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DEPARTMENT OF THE ARMY FIELD MANUAL

STAFF OFFICERS FIELD MANUAL

NUCLEAR WEAPONS EMPLOYMENT

HEADQUARTERS, DEPARTMENT OF THE ARMY
FEBRUARY 1963

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FOREWORD

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This manual may be used in basic instruction in units and in service schools, where utilization of classified reference material is not feasible. Weapons and effects data contained in this manual will not be used in command post exercises, field training exercises nor other training for actual combat operations. Data contained in FM 101-31-2 must be used for such purposes.

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FIELD MANUAL
No 101-31-3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 1 February 1963

NUCLEAR WEAPONS EMPLOYMENT

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* This manual together with FM 101-31-1, 1 February 1963, and FM 101-31-2, 1 February 1963, supersedes FM 101-31, 20 July 1959, including C 1, 29 June 1961; FM 101-31 Modified, 15 September 1960; DA Pam 39-1, 20 May 1959; and DA TC 101-1, 8 December 1958, including C 2, 14 June 1960.

TABLE OF MAX R_T and MAX R_D (See notes.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
System	Range (m)		Yield	Exposed personnel targets				Protected personnel targets				Wheeled military vehicle targets		Tanks and arty targets	
				Prompt		Delayed		Prompt		Delayed					
	Min	Max	(KT)	$R_{T_{max}}$	$R_{D_{max}}$	$R_{T_{max}}$	$R_{D_{max}}$	$R_{T_{max}}$	$R_{D_{max}}$	$R_{T_{max}}$	$R_{D_{max}}$	$R_{T_{max}}$	$R_{D_{max}}$	$R_{T_{max}}$	$R_{D_{max}}$
Short-range cannon	2,000	10,000	0.5	700	425	1,000	675	500	300	800	500	300	200	175	125
			1	900	575	1,200	775	650	400	1,000	575	400	250	250	150
Medium-range cannon	2,000	20,000	1	900	575	1,200	775	650	400	1,000	575	400	250	250	150
			2	1,000	625	1,400	900	700	450	1,100	675	550	350	325	200
Long-range cannon	3,000	30,000	2	1,000	625	1,400	875	700	450	1,100	675	550	350	325	200
			5	1,200	800	1,600	1,050	1,000	625	1,300	825	800	500	450	300
			10	1,400	875	1,800	1,175	1,100	700	1,400	925	1,100	650	600	375
			20	1,800	1,250	2,000	1,250	1,200	800	1,600	1,025	1,400	850	800	500
			50	2,800	1,650	2,800	1,650	1,400	925	2,000	1,175	2,000	1,225	1,200	750
Small free rocket	3,000	25,000	0.5	700	425	1,000	675	500	300	800	500	300	175	125	100
			1	900	575	1,200	775	700	400	1,000	600	400	225	200	125
			2	1,000	625	1,400	900	700	475	1,100	675	550	325	300	150
			5	1,200	800	1,600	1,050	1,000	675	1,400	825	800	500	450	275
			10	1,400	900	2,000	1,175	1,200	700	1,400	925	1,100	650	600	375
Large free rocket	7,000	40,000	5	1,200	800	1,600	1,050	1,000	625	1,400	825	700	400	350	225
			10	1,400	900	2,000	1,175	1,200	700	1,400	925	1,000	575	500	300
			20	1,800	1,150	2,000	1,250	1,200	800	1,600	1,025	1,300	800	700	400
			50	2,800	1,650	2,800	1,650	1,600	925	2,000	1,175	2,000	1,225	1,100	625
			100	3,600	2,175	3,600	2,175	1,600	1,075	2,000	1,300	2,800	1,625	1,600	925
Light guided missile	10,000	50,000	0.5	700	425	1,100	675	500	200	800	500	200	125	50	100
			1	900	575	1,200	775	700	400	1,000	600	250	175	150	125
			2	1,000	625	1,400	900	700	475	1,100	675	500	250	200	150
			5	1,200	800	1,600	1,050	1,000	625	1,400	825	800	425	350	225
			10	1,400	900	2,000	1,175	1,200	700	1,400	925	1,000	600	500	300
			20	1,800	1,150	2,000	1,250	1,200	800	1,600	1,025	1,400	825	800	400
Medium guided miasile	50,000	150,000	5	1,200	800	1,600	1,050	900	625	1,200	825	0	325	0	225
			10	1,400	900	1,800	1,175	1,000	700	1,400	925	800	500	0	300
			20	1,800	1,125	2,000	1,250	1,200	800	1,600	1,025	1,200	750	0	400
			50	2,800	1,650	2,800	1,650	1,400	925	1,800	1,175	2,000	1,150	900	550
			100	3,600	2,175	3,600	2,175	1,600	1,075	2,000	1,300	2,400	1,575	1,400	750
			200	4,800	2,875	4,800	2,875	1,800	1,150	2,400	1,450	3,200	2,025	1,600	975
			500	6,800	4,150	6,800	4,150	2,800	1,675	2,800	1,675	4,800	3,000	2,400	1,400
Heavy guided miasile	50,000	300,000	200	4,800	2,875	4,800	2,875	1,600	1,150	2,000	1,450	2,800	1,725	1,000	975
			500	6,400	4,150	6,400	4,150	2,400	1,675	2,400	1,675	4,400	2,725	2,000	1,400
			1,000	8,800	5,475	8,800	5,475	3,200	2,100	3,200	2,100	6,400	3,750	2,800	1,850
			2,000	12,000	7,225	12,000	7,225	4,400	2,650	4,400	2,650	8,000	5,100	4,000	2,450
			5,000	16,000	10,425	16,000	10,425	6,000	3,600	6,000	3,600	12,400	7,575	6,400	3,650
Fighter	N/A	800 KM	5	1,200	800	1,600	1,050	1,000	625	1,300	825	600	325	150	225
			10	1,400	900	2,000	1,175	1,100	700	1,400	925	900	500	400	300
			20	1,800	1,125	2,000	1,250	1,200	800	1,600	1,025	1,200	750	600	400
			50	2,800	1,650	2,800	1,650	1,600	925	2,000	1,175	2,000	1,150	1,000	550
			100	3,600	2,175	3,600	2,175	1,600	1,075	2,000	1,300	2,600	1,575	1,400	750
			200	4,600	2,875	4,600	2,875	1,800	1,150	2,400	1,450	3,200	2,025	1,600	975
			500	6,600	4,150	6,600	4,150	2,800	1,675	2,800	1,675	5,200	3,000	2,600	1,400
			1,000	9,000	5,475	9,000	5,475	3,600	2,100	3,600	2,100	6,800	4,025	3,600	2,075
Tactical Bomber	N/A	1,200 KM	100	3,600	2,150	3,600	2,150	1,600	1,075	2,000	1,300	2,400	1,325	1,000	750
			200	4,800	2,875	4,800	2,875	1,600	1,150	2,400	1,450	3,200	1,725	1,400	975
			500	6,400	4,150	6,400	4,150	2,800	1,675	2,800	1,675	4,800	2,725	2,200	1,400
			1,000	8,800	5,475	8,800	5,475	3,600	2,100	3,600	2,100	6,000	3,750	3,000	1,850
			2,000	12,000	7,225	12,000	7,225	4,000	2,650	4,000	2,650	8,400	5,100	4,000	2,450
			5,000	16,000	10,425	16,000	10,425	6,000	3,600	6,000	3,600	13,200	7,575	6,600	3,650
Strategic Bomber	N/A	2,000 KM	1,000	8,000	5,475	8,000	5,475	2,400	2,100	2,400	2,100	5,600	2,975	1,600	1,850
			2,000	12,000	7,225	12,000	7,225	3,600	2,650	3,600	2,650	8,000	4,450	3,200	2,450
			5,000	16,000	10,425	16,000	10,425	5,000	3,600	5,000	3,600	12,000	6,950	5,000	3,525

NOTES: 1. All HOB options conaidered.
2. $R_{T_{max}}$ is largeat target radius with average coverage of 0.4.
3. $R_{D_{max}}$ ia largeat probable minimum R_D tabulated.

Figure il.

CHAPTER 1
SHORT-RANGE CANNON

1.1 GENERAL

a. Orientation. This chapter contains employment data for the short-range cannon.

b. Weapon characteristics.

(1) *Yield.* The short-range cannon can fire nuclear projectiles with yields of Alfa/0.5 KT and Bravo/1 KT.

(2) *Fuzing.* The nuclear projectiles for the short-range cannon have an airburst fuzing capability. The projectiles are fuzed by time fuzes which are set for the desired time of flight by the delivery unit. These projectiles do not have a contact surface fuzing capability. If a projectile impacts, it can be expected to break up and become a dud.

SRC 1

(3) *Preinitiation.* See figure 13.7 [1] for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the short-range cannon nuclear projectiles are 2,000 meters and 10,000 meters.

(2) *Tactical system accuracy.* The horizontal and vertical dispersion errors for the short-range cannon are dependent on range. Tactical system accuracy data are contained in figure 1.8.

(3) *Unit carrying capacity.* Not a limitation in this case.

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

Situation	*Time (minutes)*
I[1]	20
II[2]	3

[1]Situation I (high readiness)—the complete round and delivery system are in a firing position and survey is completed. Preliminary firing data for a specific target are *not* available. (May be used to engage target of opportunity.)

[2]Situation II (maximum readiness)—the round is positioned, fuzed, and ready to fire. Firing data for a specific target have been computed and applied to the weapon system. The firing unit is in a "do not load" status awaiting the order to fire. (Typical of readiness to engage on-call target.)

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes the desired height of burst in meters.

[1]Short Range Cannon.

EXPOSED Personnel Targets
Short-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 500	600	700	800	900	1,000	1,100	1,200	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,500	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	30	42
3,000	1,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	45	51
4,000	1,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	55	59
5,000	1,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	70	68
6,000	1,600	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	85	77
7,000	1,600	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	95	86
8,000	1,700	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	110	94
9,000	1,700	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	125	103
10,000	1,700	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	135	112

Figure 1.1a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,500	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	30	102
3,000	1,600	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	45	111
4,000	1,600	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	55	119
5,000	1,600	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	70	128
6,000	1,600	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	85	137
7,000	1,600	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	650	95	146
8,000	1,600	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	110	154
9,000	1,700	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	125	163
10,000	1,700	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	135	172

Figure 1.1a(2).

EXPOSED Personnel Targets
Short-Range Cannon

LOW Airburst.
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	700	800	900	1,000	1,100	1,200	1,300	DELAYED CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.8/.8	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	30	53
3,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.8/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	45	57
4,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.8/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	55	65
5,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	70	74
6,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	85	83
7,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	95	92
8,000	1,900	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	110	100
9,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	125	109
10,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	135	118

SRC 1

Figure 1.1b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	700	800	900	1,000	1,100	1,200	1,300	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	30	123
3,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	45	132
4,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	55	140
5,000	1,800	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	70	149
6,000	1,800	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	85	158
7,000	1,800	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	750	95	167
8,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	110	175
9,000	1,900	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	125	184
10,000	1,900	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	135	193

Figure 1.1b(2).

[1]Short-Range Cannon.

PROTECTED Personnel Targets
Short-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 300	400	500	600	700	800			DELAYED CASUALTIES — Target radius (meters) 500	600	700	800	900	1,000	1,100	1,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,500	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	300	500	30	42
3,000	1,600	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1			.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	300	500	45	51
4,000	1,600	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1			.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	300	500	55	59
5,000	1,600	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	275	500	70	68
6,000	1,600	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	275	500	85	77
7,000	1,600	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1			.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	275	475	95	86
8,000	1,700	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1			.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	275	475	110	94
9,000	1,700	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1			.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	275	475	125	103
10,000	1,700	.6/.7	.3/.5	.2/.3	.1/.2	.1/.1	.0/.1			.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	250	475	135	112

Figure 1.2a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 300	400	500	600	700	800			DELAYED CASUALTIES — Target radius (meters) 500	600	700	800	900	1,000	1,100	1,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,500	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1			.8/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	275	475	30	102
3,000	1,600	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1			.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	275	450	45	111
4,000	1,600	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1				.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	275	450	55	119
5,000	1,600	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1				.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	250	450	70	128
6,000	1,600	.6/.7	.3/.5	.2/.3	.1/.2	.1/.1				.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	250	450	85	137
7,000	1,600	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1				.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	250	450	95	146
8,000	1,600	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1				.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	225	450	110	154
9,000	1,700	.5/.6	.3/.4	.1/.3	.1/.2	.0/.1				.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	225	450	125	163
10,000	1,700	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1				.6/.8	.5/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	200	450	135	172

Figure 1.2a(2).

PROTECTED Personnel Targets
Short-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	30	53
3,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	45	57
4,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.2/.2	.1/.1	400	575	55	65
5,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	70	74
6,000	1,800	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	85	83
7,000	1,800	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	575	95	92
8,000	1,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	110	100
9,000	1,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	125	109
10,000	1,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	135	118

SRC 1

Figure 1.2b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	575	30	123
3,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	45	132
4,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	55	140
5,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	550	70	149
6,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	550	85	158
7,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	350	550	95	167
8,000	1,900	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	350	550	110	175
9,000	1,900	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	350	550	125	184
10,000	1,900	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	325	550	135	193

Figure 1.2b(2).

[1]Short-Range Cannon.

MATERIEL Targets
Short-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 100	150	200	250	300	350	400	450	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 100	150	200	250	300				Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,500	.9/.9	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	200	.8/.9	.5/.6	.3/.3	.1/.2	.1/.1				125	30	42
3,000	1,600	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	200	.7/.9	.4/.5	.2/.3	.1/.2	.1/.1				100	45	51
4,000	1,600	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	175	.5/.8	.2/.5	.1/.3	.1/.2	.0/.1				75	55	59
5,000	1,600	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	175	.3/.6	.1/.4	.0/.2	.0/.1					50	70	68
6,000	1,600	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	175	.2/.5	.0/.3	.0/.2	.0/.1					50	85	77
7,000	1,600	.8/.9	.7/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	150	.0/.4	.0/.2	.0/.1						25	95	86
8,000	1,700	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	150	.0/.3	.0/.2	.0/.1						0	110	94
9,000	1,700	.5/.8	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	75	.0/.2	.0/.1							0	125	103
10,000	1,700	.2/.7	.1/.6	.0/.5	.0/.3	.0/.3	.0/.2	.0/.1		50	.0/.2	.0/.1							0	135	112

Figure 1.3a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 100	150	200	250	300	350	400	450	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 100	150							Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,500	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	175	.1/.2	.0/.1							25	30	102
3,000	1,600	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	150	.0/.1								25	45	111
4,000	1,600	.8/.9	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.1		125	.0/.1								0	55	119
5,000	1,600	.4/.8	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		75	.0/.1								0	70	128
6,000	1,600	.1/.7	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			50									0	85	137
7,000	1,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0									0	95	146
8,000	1,600	.0/.4	.0/.3	.0/.2	.0/.1					0									0	110	154
9,000	1,700	.0/.3	.0/.2	.0/.2	.0/.1					0									0	125	163
10,000	1,700	.0/.2	.0/.2	.0/.1						0									0	135	172

Figure 1.3a(2).

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o (meters)	Height of burst (meters)
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
		150	200	250	300	350	400	450	500		100	150	200	250	300	350	400			
2,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.3	250	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		150	30	53
3,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.3	250	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		150	45	57
4,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	250	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		125	55	65
5,000	1,800	.9/.9	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	250	.7/.9	.4/.7	.2/.5	.1/.3	.1/.2	.0/.1			100	70	74
6,000	1,800	.9/.9	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	225	.5/.8	.2/.6	.1/.4	.1/.3	.0/.2	.0/.1			75	85	83
7,000	1,800	.9/.9	.8 /9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	225	.3/.7	.1/.5	.1/.3	.0/.2	.0/.1				75	95	92
8,000	1,900	.8/.9	.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	225	.1/.6	.0/.3	.0/.2	.0/.1					50	110	100
9,000	1,900	.8/.9	.7/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	200	.0/.5	.0/.3	.0/.2	.0/.1					25	125	109
10,000	1,900	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	175	.0/.4	.0/.2	.0/.1						0	135	118

Figure 1.3b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o (meters)	Height of burst (meters)
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
		100	150	200	250	300	350	400	450		100	150	200							
2,000	1,800	.9/.9	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	225	.2/.4	.1/.2	.0/.1						50	30	123
3,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	200	.1/.3	.0/.1							25	45	132
4,000	1,800	.9/.9	.9/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	200	.0/.2	.0/.1							25	55	140
5,000	1,800	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	150	.0/.1								0	70	149
6,000	1,800	.7/.9	.4/.8	.2/.7	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	100	.0/.1								0	85	158
7,000	1,800	.4/.8	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0 /.2	.0/.1	75	.0/.1								0	95	167
8,000	1,900	.1/.7	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		25	.0/.1								0	110	175
9,000	1,900	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0									0	125	184
10,000	1,900	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0									0	135	193

Figure 1.3b(2).

[1]Short-Range Cannon.

SRC 1

Troop Safety Distances—Meters

Short-Range Cannon

ALFA/.5 KT

LOW Airburst

Range	Minimum distance required for troop vulnerability and degree of risk shown								
	Unwarned exposed personnel			Warned exposed personnel			Warned protected personnel		
meters	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk
2,000	1,500	1,300	1,000	1,500	1,300	1,000	1,300	1,100	800
3,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
4,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
5,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
6,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,100	900
7,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,200	900
8,000	1,700	1,400	1,100	1,700	1,400	1,100	1,400	1,200	900
9,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
10,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000

Figure 1.4a(1).

HIGH Airburst

Range	Minimum distance required for troop vulnerability and degree of risk shown								
	Unwarned exposed personnel			Warned exposed personnel			Warned protected personnel		
meters	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk
2,000	1,500	1,300	1,000	1,500	1,300	1,000	1,300	1,100	800
3,000	1,600	1,300	1,100	1,600	1,300	1,000	1,300	1,100	800
4,000	1,600	1,300	1,100	1,600	1,300	1,000	1,300	1,100	900
5,000	1,600	1,300	1,100	1,600	1,300	1,000	1,300	1,100	900
6,000	1,600	1,400	1,100	1,600	1,400	1,000	1,300	1,100	900
7,000	1,600	1,400	1,100	1,600	1,400	1,000	1,400	1,100	900
8,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,200	900
9,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	900
10,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000

Figure 1.4a(2).

BRAVO/1 KT

LOW Airburst

Range	Minimum distance required for troop vulnerability and degree of risk shown								
	Unwarned exposed personnel			Warned exposed personnel			Warned protected personnel		
meters	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk
2,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,000
3,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,100
4,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
5,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
6,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
7,000	1,800	1,600	1,400	1,800	1,600	1,400	1,500	1,400	1,100
8,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
9,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,200
10,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200

Figure 1.4b(1).

HIGH Airburst

Range	Minimum distance required for troop vulnerability and degree of risk shown								
	Unwarned exposed personnel			Warned exposed personnel			Warned protected personnel		
meters	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk	Neg risk	Mod risk	Emerg risk
2,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,000
3,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,000
4,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
5,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
6,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
7,000	1,800	1,600	1,400	1,800	1,600	1,400	1,500	1,400	1,100
8,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
9,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
10,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200

Figure 1.4b(2).

NOTE: The troop safety distsnces include the safety radius for tbe yield plus the buffer distance for delivery perpendicular to a strsight line friendly troop orientation. See figure 1.5 for special friendly troop orientations.

The troop safety distances in figures 1.4*a*(1) through 1.4*b*(2) are based on the friendly troop orientation shown in figure 1, below. The elliptical delivery pattern of the short-range cannon may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ- Desired ground zero.
R_S — Safety radius.
d_b — Buffer distance.
~~~-Friendly troops.
➡-Direction of fire.

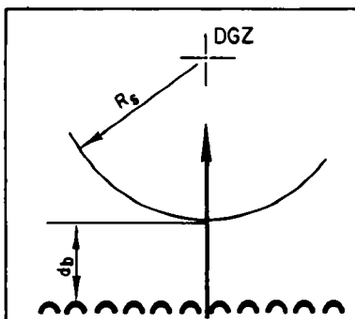

Figure 1. Straight-line, perpendicular delivery.

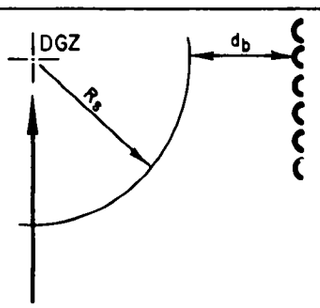

Figure 2. Straight-line, parallel delivery.

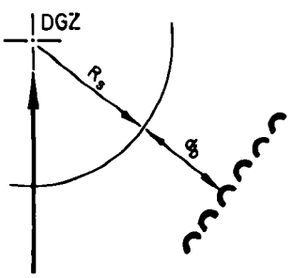

Figure 3. Straight-line, 45° delivery.

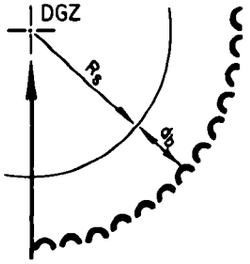

Figure 4. Quarter circle.

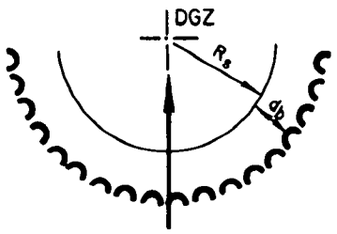

Figure 5. Half circle.

When the soecial friendly troop orientations shown above occur, the tabulated troop safety distances in figures 1.4*a*(1) through 1.4*b*(2) must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures are shown in meters.

All Height of Burst Options—All Yields									
Range (meters)	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*	*Range (meters)*	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*
2,000	0	0	+100	+100					
3,000	0	0	+100	+100					
4,000	0	0	+100	+100					
5,000	0	0	+100	+100					
6,000	0	0	+100	+100					
7,000	0	0	+100	+100					
8,000	0	0	+100	+100					
9,000	0	0	+100	+100					
10,000	0	0	+100	+100					

Figure 1.5.

[1]Short-Range Cannon.
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CASUALTY and DAMAGE Tables
Short-Range Cannon
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shetler		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
675		0										0	1,300	1,000	675	1,300	1,000	675	1,000	725	325
650		125				0						150	1,325	1,025	700	1,325	1,025	700	1,025	750	375
625		225				150				0		225	1,325	1,050	725	1,325	1,050	725	1,050	775	425
600		275				225				100		275	1,350	1,050	750	1,350	1,050	750	1,050	775	450
575		325				275				200		325	1,350	1,075	775	1,350	1,075	775	1,075	800	500
550		375				325				250		375	1,350	1,075	800	1,350	1,075	800	1,075	825	525
525		400				375				300		400	1,375	1,100	800	1,375	1,100	800	1,100	850	550
500		425		0		400				350		450	1,375	1,100	825	1,375	1,100	825	1,100	850	575
475		450		150		425				375	0	475	1,375	1,125	825	1,375	1,125	825	1,125	875	600
450		475		225	0	450				400	300	500	1,400	1,125	850	1,400	1,125	850	1,125	875	600
425	0	500		275	150	475			0	425	375	500	1,400	1,125	850	1,400	1,125	850	1,125	900	625
400	150	525		300	200	500		0	150	450	450	525	1,400	1,150	875	1,400	1,150	875	1,150	900	650
375	200	550		325	250	525		50	200	475	575	575	1,425	1,150	875	1,425	1,150	875	1,150	925	650
350	250	550		350	275	525		150	250	500	750	750	1,425	1,150	900	1,425	1,150	900	1,150	925	675
325	275	575		375	300	550		200	275	525	800	800	1,425	1,175	900	1,425	1,175	900	1,175	950	700
300	300	600	0	400	325	575		225	300	525	800	800	1,425	1,175	900	1,425	1,175	900	1,175	950	700
275	325	600	125	425	350	575		275	325	550	800	800	1,450	1,175	925	1,450	1,175	925	1,175	950	700
250	350	600	175	425	375	600	0	275	350	550	775	775	1,450	1,175	925	1,450	1,175	925	1,175	950	725
225	350	625	200	450	400	600	75	300	400	575	725	725	1,450	1,200	925	1,450	1,200	925	1,200	975	725
200	375	625	225	450	400	600	125	325	425	575	700	700	1,450	1,200	950	1,450	1,200	950	1,200	975	725
175	400	650	250	475	425	625	175	350	425	575	650	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
150	400	650	250	475	425	625	200	350	400	600	625	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
125	400	650	275	475	425	625	200	350	400	600	600	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
100	425	650	275	500	450	625	225	375	400	600	575	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
75	425	650	300	500	450	625	225	375	425	600	550	650	1,475	1,200	950	1,475	1,200	950	1,200	975	750
50	425	675	300	500	450	650	225	375	425	600	550	650	1,475	1,200	950	1,475	1,200	950	1,200	975	750
25	425	675	300	500	450	650	250	375	425	600	525	675	1,475	1,200	950	1,475	1,200	950	1,200	975	750
0	425	675	300	500	450	650	250	375	425	600	525	675	1,475	1,200	950	1,475	1,200	950	1,200	975	750

HOB_{fs} = 24 m

Low HOB_{min} =42 m

High HOB_{min} = 96 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 1.6a.

All figures in meters

SRC 1

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam ltwg and RR brgs	Severe dam floot brgs	2d-degree burns			1 PSI Over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at C2 (Rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
675										1,225			0–10				0–550	
650										1,250			0–10				0–550	
625										1,275			0–10				0–600	
600										1,275			0–15				0–600	
575										1,300		0	0–15			0	0–650	
550							0			1,325		0–5	0–20			0–50	0–650	
525							125			1,325		0–5	0–25			0–100	0–650	
500							200			1,325		0–5	0–30			0–250	0–700	
475							250			1,325		0–5	0–45			0–300	0–750	
450							300			1,350		0–5	5–60			0–350	50–750	
425							325			1,350		0–10	5–75			0–350	150–750	
400							375			1,350		0–10	5–100			0–400	200–750	
375							400			1,350	0	0–15	10–130		0	0–450	250–800	
350							400			1,350	0–5	0–15	10–160		0–50	0–450	300–800	
325							425	0		1,350	0–5	0–20	10–200		0–150	0–450	350–800	
300							450	75		1,325	0–5	0–20	10–240		0–200	0–500	350–800	
275							475	150		1,325	0–5	0–25	15–290		0–250	0–500	400–850	
250							475	175		1,300	0–5	0–30	15–330		0–250	0–500	400–850	
225				0			500	225		1,300	0–5	0–35	20–390		0–300	0–550	400–850	
200	0			50			500	225		1,275	0–5	0–45	25–540		0–300	0–550	450–850	
175	25			100			500	250		1,250	0–10	0–55	30–660		0–350	0–550	450–850	
150	75	0	0	125		0	525	275	0	1,250	0–10	5–70	35–840		0–350	50–550	450–850	
125	150	25	50	150		175	525	275	50	1,225	0–10	5–100	45–1,150		0–350	100–550	450–850	
100	175	50	75	175		200	525	300	100	1,200	0–15	5–120	55–1,350		0–350	150–550	450–850	
75	200	75	100	175	0	200	525	300	100	1,150	0–20	10–145	70–1,750		0–350	150–550	450–850	
50	200	100	100	200	175	200	550	300	125	1,125	0–20	10–175	85–2,100		0–350	150–550	450–850	
25	200	125	100	200	150	175	450	250	125	1,100	0–25	10–250	120–2,900	0	0–350	150–550	450–850	0
0	125	100	75	150	100	125	325	150	75	1,050	FALLOUT GOVERNS							

Figure 1.6a continued.

[1]Short-Range Cannon.

CASUALTY and DAMAGE Tables
Short-Range Cannon

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
825													1,450	1,125	850	1,450	1,125	850	1,075	850	475
800		0											1,475	1,150	875	1,475	1,150	875	1,100	875	525
775		125										0	1,475	1,150	900	1,475	1,150	900	1,100	900	550
750		225				0						150	1,500	1,175	925	1,500	1,175	925	1,125	925	600
725		300				125				0		250	1,500	1,200	950	1,500	1,200	950	1,150	950	625
700		350				225				100		300	1,525	1,200	950	1,525	1,200	950	1,150	950	650
675		400				300				200		350	1,525	1,225	975	1,525	1,225	975	1,175	975	675
650		450				350				275		400	1,550	1,225	1,000	1,550	1,225	1,000	1,200	1,000	700
625		475				400				325		450	1,550	1,250	1,000	1,550	1,250	1,000	1,200	1,000	725
600		500		0		425				375		475	1,550	1,250	1,025	1,550	1,250	1,025	1,225	1,025	750
575	0	550		125		450				400	0	500	1,575	1,275	1,050	1,575	1,275	1,050	1,225	1,050	775
550	125	550		225	0	500				450	325	525	1,575	1,275	1,050	1,575	1,275	1,050	1,250	1,050	800
525	200	575		275	75	525			0	475	400	550	1,575	1,300	1,075	1,575	1,300	1,075	1,250	1,075	800
500	275	600		300	175	550			75	500	475	575	1,600	1,300	1,075	1,600	1,300	1,075	1,250	1,075	825
475	300	625		350	225	550		0	175	525	550	600	1,600	1,300	1,100	1,600	1,300	1,100	1,275	1,100	825
450	350	650		375	275	575		50	225	550	600	625	1,600	1,325	1,100	1,600	1,325	1,100	1,275	1,100	850
425	375	650	0	400	325	600		150	275	550	700	700	1,625	1,325	1,100	1,625	1,325	1,100	1,300	1,100	850
400	400	675	100	425	350	625		225	300	575	950	950	1,625	1,325	1,125	1,625	1,325	1,125	1,300	1,125	875
375	425	700	175	450	375	625		250	350	600	975	975	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	875
350	450	700	225	475	400	650		300	375	600	1,000	1,000	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	900
325	475	725	250	500	425	650		325	400	625	1,000	1,000	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
300	475	725	275	500	425	675	0	350	550	625	975	975	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
275	500	725	300	525	450	675	125	375	575	650	950	950	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
250	500	750	325	525	475	700	175	375	575	650	925	925	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
225	525	750	350	550	475	700	200	400	575	675	875	875	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	925
200	525	750	350	550	500	700	225	400	575	675	850	850	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
175	550	775	375	575	500	725	250	425	525	675	800	800	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
150	550	775	375	575	500	725	250	425	500	700	775	775	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
125	550	775	400	575	525	725	275	450	500	700	750	750	1,675	1,375	1,175	1,675	1,375	1,175	1,350	1,175	950
100	550	775	400	575	525	725	275	450	500	700	725	750	1,675	1,400	1,175	1,675	1,400	1,175	1,350	1,175	950
75	550	775	400	575	525	725	300	450	500	700	700	750	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,175	950
50	550	775	400	600	525	725	300	450	500	700	675	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
25	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
0	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950

HOB_{fs} = 30 m

Low HOB_{min} = 53 m

High HOB_{min} = 120 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 1.6b.

All figures in meters

SRC 1

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled veh's	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float bridge	2d-degree burns			1 PSI over-pressure	Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III,	Type IV	Type I	Type II	Type III	Type IV
825										1,550			0–5				0–500	
800										1,575			0–5				0–550	
775										1,600			0–10				0–550	
750							0			1,625			0–10				0–600	
725							200			1,650			0–10				0–650	
700							275			1,650			0–10				0–650	
675							325			1,675			0–15				0–700	
650							375			1,675			0–20				0–700	
625							425			1,675		0	0–20			0	0–750	
600							450			1,675		0–5	0–25			0–50	0–750	
575							475			1,700		0–5	0–30			0–200	0–800	
550							500			1,700		0–5	0–40			0–250	0–800	
525							525			1,700		0–5	0–50			0–300	0–800	
500							550			1,700		0–5	0–60			0–350	0–800	
475							575			1,700		0–10	0–90			0–400	0–850	
450							600			1,700		0–10	5–120			0–400	50–850	
425							625			1,700	0	0–15	10–150		0	0–450	150–900	
400							625			1,700	0–5	0–20	10–200		0–50	0–450	200–900	
375							650			1,675	0–5	0–25	15–260		0–150	0–500	250–900	
350							675	0		1,675	0–5	0–30	15–320		0–200	0–500	300–900	
325							675	125		1,650	0–5	0–35	20–400		0–250	0–500	350–900	
300				0			675	175		1,650	0–5	5–40	20–480		0–300	50–550	350–950	
275				25			700	200		1,625	0–10	5–50	25–580		0–300	150–550	400–950	
250				75			700	250		1,600	0–10	5–55	30–660		0–350	200–550	400–950	
225	0			125			725	250		1,600	0–10	5–65	35–780		0–350	200–600	400–950	
200	50		0	150		0	725	275	0	1,575	0–10	5–90	50–1,080		0–350	250–600	450–950	
175	150	0	25	175		250	725	300	50	1,550	0–15	5–110	60–1,320		0–400	250–600	450–950	
150	200	25	75	200		250	725	300	100	1,525	0–15	10–140	70–1,680		0–400	300–600	450–950	
125	225	50	100	225		250	750	325	125	1,500	0–20	10–185	90–2,220		0–400	300–600	450–950	
100	250	100	125	225	0	275	750	325	150	1,475	0–25	10–225	110–2,700		0–400	300–600	450–950	
75	250	150	125	250	225	275	750	325	175	1,450	0–35	15–290	140–3,500		0–400	300–600	450–950	
50	250	150	150	250	250	275	725	325	175	1,400	5–40	15–350	170–4,200	0	50–400	300–600	450–950	0
25	250	150	150	250	225	250	575	350	150	1,375	FALLOUT GOVERNS							
0	175	125	100	200	150	200	450	250	125	1,325								

Figure 1.6b continued.

[1]Short-Range Cannon.

CONTINGENT EFFECTS Tables
Short-Range Cannon

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.

Yield KT	HOB	*Estimated radii in meters of 2 rad/hr contour of induced radiation, one hour after burst. (See note 2.)*				*Estimated induced radiation intensity, one hour after burst, at GZ in rad/hr. (See note 2.)*			
		Soil type I (Liberia, Africa)	*Soil type II (Nevada desert)*	*Soil type III (lava clay Hawaii)*	*Soil type IV (beach sand Pensacola, Fla.)*	*Soil type I*	*Soil type II*	*Soil type III*	*Soil type IV*
ALFA/.5	Low	0–350	150–550	450–850	0	0–25	10–250	120–2,900	0
	High	0–350	150–550	450–850	0	0–15	10–145	70–1,750	0
BRAVO/1	Low	50–400	300–600	450–950	0	5–40	15–350	170–4,200	0
	High	0–400	300–600	450–950	0	0–25	10–225	110–2,700	0

NOTES: 1. For description of chemicsl composition and effects of variations in chemical composition in soil types, see FM 101-31-1, app III, annex F.
2. For range dependent delivery systems, intensities and 2 rsd/hr contours are given for minimum ranges.

Figure 1.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	*OBSTACLES TO MOVEMENT*							*CASUALTIES TO EXPOSED PERSONNEL*		
	Foot and wheeled vehicle movement				*Tracked vehicle movement*					
	Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*
ALFA/.5	250	300	300	450	250	300	300	150	200	200
BRAVO/1	300	400	400	700	300	400	400	200	300	300

NOTE: These rsdii apply to all HOB. For general dsscription of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 1.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	*AIRCRAFT SAFETY RADII—meters (See note 2)*		
	Light fixed-wing	*Recon and obsn hel*	*Transport and util hel*
ALFA/.5	4,000	4,000	4,000
BRAVO/1	5,000	5,000	5,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.
2. A buffer distance hss been sdded to these radii of safety.

Figure 1.7c.

FIRE AREAS (See note.)

		Expected radii for ignition of wildland fuels during fire season meters							
		Dry climate (25 percent relative humidity)				*Damp climate (75 percent relative humidity)*			
		Class I	*Class II*	*Class III*	*Class IV*	*Class I*	*Class II*	*Class III*	*Class IV*
ALFA/.5	Air	800	700	700	600	700	700	600	400
BRAVO/1	Air	1,100	1,000	900	700	1,000	1,000	800	600

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 1.7d.

SRC 1

TACTICAL SYSTEM ACCURACY DATA
Short-Range Cannon

All distances in meters

Range	*Equivalent CEP*[1]	*Probable errors*			*Offset distance* (d_o)
		PE_R	PE_d	PE_h	
2,000	14	10	5	5	30
3,000	21	15	8	8	45
4,000	28	20	10	10	55
5,000	35	25	13	13	70
6,000	42	30	15	15	85
7,000	49	35	18	18	95
8,000	56	40	20	20	110
9,000	63	45	23	23	125
10,000	69	50	25	25	135

[1]Equivalent CEP=1.2345 $(PE_R^2+PE_d^2)^{1/2}$.

Figure 1.8.

[1]Short-Range Cannon.

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CHAPTER 2
MEDIUM-RANGE CANNON

2.1 GENERAL

a. Orientation. This chapter contains employment data for the medium-range cannon.

b. Weapon characteristics.

(1) *Yield.* The medium-range cannon can fire nuclear projectiles with yields of Bravo/1 KT and Charlie/2 KT.

(2) *Fuzing.* The nuclear projectiles for the medium-range cannon have an airburst fuzing capability. The projectiles are fuzed by time fuzes which are set for the desired time of flight by the delivery unit. These projectiles do not have a contact surface fuzing capability. If a projectile impacts, it can be expected to break up and become a dud.

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the medium-range cannon nuclear projectiles are 2,000 meters and 20,000 meters. MRC 1

(2) *Tactical system accuracy.* The horizontal and vertical dispersion errors for the medium-range cannon are dependent on range. Tactical system accuracy data are contained in figure 2.8.

(3) *Unit carrying capacity.* Not a limitation in this case.

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

Situation	*Time (minutes)*
I[1]	20
II[2]	3

[1]Situation I (high readiness)—the complete round and delivery system are in a firing position and survey is completed. Preliminary firing data for a specific target are *not* available. (May be used to engage target of opportunity.)

[2]Situation II (maximum readiness)—the round is positioned, fuzed, and ready to fire. Firing data for a specific target have been computed and applied to the weapon system. The firing unit is in a "do not load" status awaiting the order to fire. (Typical of readiness to engage on-call target.)

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes the desired height of burst in meters.

[1]Medium-Range Cannon.

EXPOSED Personnel Targets
Medium-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	700	800	900	1,000	1,100	1,200	1,300	DELAYED CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.8/.8	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	30	53
3,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.8/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	45	57
4,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	55	65
5,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	70	74
6,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	85	83
7,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	95	92
8,000	1,900	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	110	100
9,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	125	109
10,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	775	135	118
11,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	750	150	127
12,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	750	165	135
13,000	1,900	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	180	144
14,000	2,000	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	190	153
15,000	2,000	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	205	162
16,000	2,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	220	170
17,000	2,000	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	230	179
18,000	2,000	.6/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		500	725	245	188
19,000	2,000	.5/.7	.4/.6	.3/.4	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		500	725	260	197
20,000	2,100	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		500	725	270	205

Figure 2.1a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	700	800	900	1,000	1,100	1,200	1,300	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	30	123
3,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	45	132
4,000	1,800	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	55	140
5,000	1,800	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	70	149
6,000	1,800	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	85	158
7,000	1,800	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	750	95	167
8,000	1,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	110	175
9,000	1,900	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	125	184
10,000	1,900	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	135	193
11,000	1,900	.6/.8	.5/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	525	750	150	202
12,000	1,900	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	500	750	165	210
13,000	1,900	.6/.7	.4/.6	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	500	750	180	219
14,000	2,000	.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	500	750	190	228
15,000	2,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	475	750	205	237
16,000	2,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	475	750	220	245
17,000	2,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	475	750	230	254
18,000	2,000	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.0/.2	.0/.2	.0/.1	450	725	245	263
19,000	2,000	.5/.6	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	725	260	272
20,000	2,100	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	725	270	280

Figure 2.1a(2).

EXPOSED Personnel Targets
Medium-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 700	800	900	1,000	1,100	1,200	1,300	1,400	DELAYED CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	2,200	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	30	67
3,000	2,300	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	875	45	67
4,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	625	875	55	73
5,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	70	82
6,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	85	91
7,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	95	100
8,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	110	108
9,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	125	117
10,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	135	126
11,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	150	135
12,000	2,400	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	875	165	143
13,000	2,400	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	875	180	152
14,000	2,500	.6/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	190	161
15,000	2,500	.6/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	205	170
16,000	2,500	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	220	178
17,000	2,500	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	850	230	187
18,000	2,500	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	850	245	196
19,000	2,500	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	850	260	205
20,000	2,600	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	825	270	213

Figure 2.1b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	700	800	900	1,000	1,100	1,200	1,300	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	2,200	.8/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.9/.9	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	875	30	151
3,000	2,300	.8/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	875	45	160
4,000	2,300	.8/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	875	55	168
5,000	2,300	.7/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	875	70	177
6,000	2,300	.7/.8	.6/.7	.5/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	875	85	186
7,000	2,300	.7/.8	.6/.7	.5/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	850	95	195
8,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	850	100	203
9,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	850	125	212
10,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	135	221
11,000	2,400	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	150	230
12,000	2,400	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	165	238
13,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	825	180	247
14,000	2,500	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	525	825	190	256
15,000	2,500	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	525	825	205	265
16,000	2,500	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	525	825	220	273
17,000	2,500	.6/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	500	825	230	282
18,000	2,500	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	500	800	245	291
19,000	2,500	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	475	800	260	300
20,000	2,600	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	475	800	270	308

Figure 2.1b(2).

[1] Medium-Range Cannon.

MRC 1

PROTECTED Personnel Targets
Medium-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	30	53
3,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	45	57
4,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	55	65
5,000	1,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	70	74
6,000	1,800	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	85	83
7,000	1,800	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	575	95	92
8,000	1,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	110	100
9,000	1,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	125	109
10,000	1,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	135	118
11,000	1,900	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	550	150	127
12,000	1,900	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	350	550	165	135
13,000	1,900	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	350	550	180	144
14,000	2,000	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	350	550	190	153
15,000	2,000	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	350	550	205	162
16,000	2,000	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	325	525	220	170
17,000	2,000	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	325	525	230	179
18,000	2,000	.5/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	300	525	245	188
19,000	2,000	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.1			.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	300	525	260	197
20,000	2,100	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1			.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	275	500	270	205

Figure 2.2a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	1,800	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	575	30	123
3,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	45	132
4,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	55	140
5,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	550	70	149
6,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	550	85	158
7,000	1,800	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	350	550	95	167
8,000	1,900	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	350	550	110	175
9,000	1,900	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	350	550	125	184
10,000	1,900	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	325	550	135	193
11,000	1,900	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1		.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	325	525	150	202
12,000	1,900	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.1/.1		.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	300	525	165	210
13,000	1,900	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	300	525	180	219
14,000	2,000	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	275	500	190	228
15,000	2,000	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	275	500	205	237
16,000	2,000	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	500	220	245
17,000	2,000	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	225	475	230	254
18,000	2,000	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1			.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		225	475	245	263
19,000	2,000	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1			.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		200	475	260	272
20,000	2,100	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		175	450	270	280

Figure 2.2a(2).

PROTECTED Personnel Targets
Medium-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	30	67
3,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	45	67
4,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	55	73
5,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	70	82
6,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	85	91
7,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	95	100
8,000	2,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	450	675	110	108
9,000	2,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	675	125	117
10,000	2,400	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	675	135	126
11,000	2,400	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	650	150	135
12,000	2,400	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	165	143
13,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	180	152
14,000	2,500	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	190	161
15,000	2,500	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	650	205	170
16,000	2,500	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	625	220	178
17,000	2,500	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	230	187
18,000	2,500	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	245	196
19,000	2,500	.6/.8	.4/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	260	205
20,000	2,600	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	600	270	213

MRC 1

Figure 2.2b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
2,000	2,200	.8/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	30	151
3,000	2,300	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	45	160
4,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	55	168
5,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	70	177
6,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	85	186
7,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	95	195
8,000	2,400	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	650	110	203
9,000	2,400	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	625	125	212
10,000	2,400	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	135	221
11,000	2,400	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	150	230
12,000	2,400	.6/.8	.5/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	165	238
13,000	2,400	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	600	180	247
14,000	2,500	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	600	190	256
15,000	2,500	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	600	205	265
16,000	2,500	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	600	220	273
17,000	2,500	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	575	230	282
18,000	2,500	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	275	575	245	291
19,000	2,500	.3/.6	.2/.4	.1/.3	.1/.3	.1/.2	.0/.1			.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	575	260	300
20,000	2,600	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1			.8/.9	.6/.8	.4/.6	.2/.4	.2/.3	.1/.2	.1/.1		225	550	270	308

Figure 2.2b(2).

[1] Medium-Range Cannon.

MATERIEL Targets
Medium-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY								
		Target radius (meters)								Prob min R_D	Target radius (meters)							Prob min R_D	
(meters)	(meters)	150	200	250	300	350	400	450	500	(meters)	100	150	200	250	300	350	400	(meters)	(meters)	(meters)
2,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.3	250	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	150	30	53
3,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.3	250	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	150	45	57
4,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	250	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	125	55	65
5,000	1,800	.9/.9	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	250	.7/.9	.4/.7	.2/.5	.1/.3	.1/.2	.0/.1		100	70	74
6,000	1,800	.9/.9	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	225	.5/.8	.2/.6	.1/.4	.1/.3	.0/.2	.0/.1		75	85	83
7,000	1,800	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	225	.3/.7	.1/.5	.1/.3	.0/.2	.0/.1			75	95	92
8,000	1,900	.8/.9	.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	225	.1/.6	.0/.3	.0/.2	.0/.1				50	110	100
9,000	1,900	.8/.9	.7/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	200	.0/.5	.0/.3	.0/.2	.0/.1				25	125	109
10,000	1,900	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	175	.0/.4	.0/.2	.0/.1					0	135	118
11,000	1,900	.5/.8	.4/.7	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.1/.2	125	.0/.3	.0/.2	.0/.1					0	150	127
12,000	1,900	.3/.7	.2/.6	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	75	.0/.3	.0/.2	.0/.1					0	165	135
13,000	1,900	.1/.7	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	50	.0/.3	.0/.1						0	180	144
14,000	2,000	.0/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	25	.0/.2	.0/.1						0	190	153
15,000	2,000	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	0	.0/.2	.0/.1						0	205	162
16,000	2,000	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.2	.0/.1						0	220	170
17,000	2,000	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1							0	230	179
18,000	2,000	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.1							0	245	188
19,000	2,000	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1							0	260	197
20,000	2,100	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.1							0	270	205

Figure 2.3a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY								
		Target radius (meters)								Prob min R_D	Target radius (meters)							Prob min R_D	
(meters)	(meters)	100	150	200	250	300	350	400	450	(meters)	100	150	200					(meters)	(meters)	(meters)
2,000	1,800	.9/.9	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	225	.2/.4	.1/.2	.0/.1					50	30	123
3,000	1,800	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	200	.1/.3	.0/.1						25	45	132
4,000	1,800	.9/.9	.9/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	200	.0/.2	.0/.1						25	55	140
5,000	1,800	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	150	.0/.1							0	70	149
6,000	1,800	.7/.9	.4/.8	.2/.7	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	100	.0/.1							0	85	158
7,000	1,800	.4/.8	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	75	.0/.1							0	95	167
8,000	1,900	.1/.7	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		25	.0/.1							0	110	175
9,000	1,900	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0								0	125	184
10,000	1,900	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0								0	135	193
11,000	1,900	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				0								0	150	202
12,000	1,900	.0/.3	.0/.2	.0/.2	.0/.1					0								0	165	210
13,000	1,900	.0/.2	.0/.2	.0/.2	.0/.1					0								0	180	219
14,000	2,000	.0/.2	.0/.2	.0/.1						0								0	190	228
15,000	2,000	.0/.2	.0/.1							0								0	205	237
16,000	2,000	.0/.1								0								0	220	245
17,000	2,000	.0/.1								0								0	230	254
18,000	2,000	.0/.1								0								0	245	263
19,000	2,000	.0/.1								0								0	260	272
20,000	2,100	.0/.1								0								0	270	280

Figure 2.3a(2).

MATERIEL Targets
Medium-Range Cannon

LOW Airburst
Precludes fallout

Range[1] (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 350	400	450	500	550	600	650	700	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 150	200	250	300	350	400	450	500	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
2,000	2,200	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	350	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	200	30	67
3,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	350	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	200	45	67
4,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	350	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1	200	55	73
5,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	325	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	175	70	82
6,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	325	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	150	85	91
7,000	2,300	.7/.8	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	325	.5/.8	.3/.6	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1		125	95	100
8,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	300	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		100	110	108
9,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.4	.2/.3	.2/.3	.1/.2	300	.2/.6	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1			75	125	117
10,000	2,400	.5/.7	.4/.6	.3/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	275	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			50	135	126
11,000	2,400	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	275	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1				50	150	135
12,000	2,400	.5/.6	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	250	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				25	165	143
13,000	2,400	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	225	.0/.3	.0/.2	.0/.2	.0/.1					0	180	152
14,000	2,500	.3/.6	.2/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	150	.0/.3	.0/.2	.0/.2	.0/.1					0	190	161
15,000	2,500	.1/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	100	.0/.2	.0/.2	.0/.1						0	205	170
16,000	2,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	75	.0/.2	.0/.2	.0/.1						0	220	178
17,000	2,500	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		50	.0/.2	.0/.1							0	230	187
18,000	2,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		25	.0/.1								0	245	196
19,000	2,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.1								0	260	205
20,000	2,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.1								0	270	213

Figure 2.3b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 300	350	400	450	500	550	600	650	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 100	150	200	250	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
2,000	2,200	.8/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	300	.6/.8	.2/.4	.1/.2	.1/.1	75	30	151
3,000	2,300	.7/.8	.6/.7	.5/.6	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	275	.3/.6	.1/.3	.0/.2	.0/.1	50	45	160
4,000	2,300	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.2/.3	.1/.2	275	.1/.5	.0/.2	.0/.1		50	55	168
5,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	2/.3	.2/.3	.1/.2	.1/.2	250	.0/.3	.0/.2	.0/.1		25	70	177
6,000	2,300	.6/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	225	.0/.2	.0/.1			0	85	186
7,000	2,300	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	150	.0/.2	.0/.1			0	95	195
8,000	2,400	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	100	.0/.1				0	110	203
9,000	2,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		75	.0/.1				0	125	212
10,000	2,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			50	.0/.1				0	135	221
11,000	2,400	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				25	.0/.1				0	150	230
12,000	2,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1				0	165	238
13,000	2,400	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1				0	180	247
14,000	2,500	.0/.2	.0/.2	.0/.1						0					0	190	256
15,000	2,500	.0/.2	.0/.1							0					0	205	265
16,000	2,500	.0/.1								0					0	220	273
17,000	2,500	.0/.1								0					0	230	282
18,000	2,500	.0/.1								0					0	245	291
19,000	2,500	.0/.1								0					0	260	300
20,000	2,600	.0/.1								0					0	270	308

Figure 2.3b(2).

[1] Medium-Range Cannon.

MRC 1

Troop Safety Distances—Meters
Medium-Range Cannon

BRAVO/1 KT

LOW Airburst

Range (meters)	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
2,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,000
3,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,100
4,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
5,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
6,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
7,000	1,800	1,600	1,400	1,800	1,600	1,400	1,500	1,400	1,100
8,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
9,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,200
10,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
11,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
12,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
13,000	1,900	1,700	1,500	1,900	1,700	1,500	1,600	1,500	1,200
14,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,500	1,200
15,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
16,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
17,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
18,000	2,000	1,800	1,500	2,000	1,800	1,500	1,700	1,500	1,300
19,000	2,000	1,800	1,600	2,000	1,800	1,600	1,700	1,600	1,300
20,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300

Figure 2.4a(1).

HIGH Airburst

Range (meters)	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
2,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,000
3,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,000
4,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
5,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
6,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
7,000	1,800	1,600	1,400	1,800	1,600	1,400	1,500	1,400	1,100
8,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
9,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
10,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
11,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
12,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
13,000	1,900	1,700	1,500	1,900	1,700	1,500	1,600	1,500	1,200
14,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,500	1,200
15,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,500	1,200
16,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
17,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
18,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
19,000	2,000	1,800	1,600	2,000	1,800	1,600	1,700	1,600	1,300
20,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300

Figure 2.4a(2).

CHARLIE/2 KT

LOW Airburst

Range (meters)	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
2,000	2,200	1,700	1,400	1,800	1,600	1,400	1,500	1,300	1,000
3,000	2,300	1,700	1,400	1,900	1,600	1,400	1,500	1,300	1,100
4,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
5,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
6,000	2,300	1,700	1,500	1,900	1,600	1,500	1,600	1,400	1,100
7,000	2,300	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
8,000	2,400	1,800	1,500	1,900	1,700	1,500	1,600	1,400	1,100
9,000	2,400	1,800	1,500	2,000	1,700	1,500	1,600	1,400	1,200
10,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
11,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
12,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
13,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
14,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,200
15,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,300
16,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
17,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,600	1,300
18,000	2,500	1,900	1,700	2,100	1,900	1,700	1,800	1,600	1,300
19,000	2,500	2,000	1,700	2,100	1,900	1,700	1,800	1,600	1,300
20,000	2,600	2,000	1,700	2,200	1,900	1,700	1,800	1,600	1,400

Figure 2.4b(1).

HIGH Airburst

Range (meters)	Minimum Distance Required for Troop Vulnerability and Degree of risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
2,000	2,200	1,700	1,400	1,800	1,600	1,400	1,500	1,300	1,000
3,000	2,300	1,700	1,400	1,900	1,600	1,400	1,500	1,300	1,100
4,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
5,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
6,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,400	1,100
7,000	2,300	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
8,000	2,400	1,800	1,500	1,900	1,700	1,500	1,600	1,400	1,100
9,000	2,400	1,800	1,500	2,000	1,700	1,500	1,600	1,400	1,200
10,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
11,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
12,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,500	1,200
13,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
14,000	2,500	1,900	1,600	2,000	1,800	1,600	1,700	1,500	1,200
15,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,300
16,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
17,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
18,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,600	1,300
19,000	2,500	1,900	1,700	2,100	1,900	1,700	1,800	1,600	1,300
20,000	2,600	2,000	1,700	2,100	1,900	1,700	1,800	1,600	1,300

Figure 2.4b(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 2.5 for special friendly troop orientation.

SUPPLEMENTARY TROOP SAFETY Tables
Medium-Range Cannon—All Yields

The troop safety distances in figures 2.4o(1) through 2.4b(2) are based on the friendly troop orientation shown in figure 1, below. The elliptical delivery pattern of the medium-range cannon may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ- Desired ground zero.
R_S – Safety radius.
d_b – Buffer distance.
~~~-Friendly troops.
—►—Direction of fire.

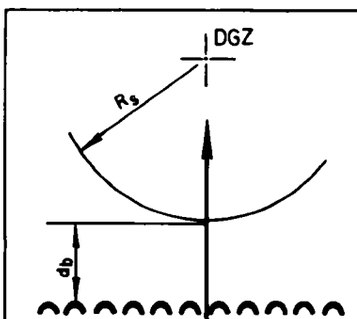

Figure 1. Straight line, perpendicular delivery.

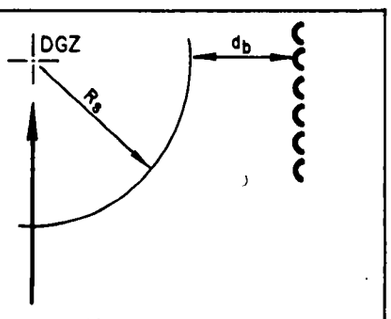

Figure 2. Straight line, parallel delivery.

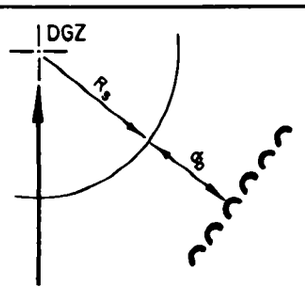

Figure 3. Straight-line, 45° delivery.

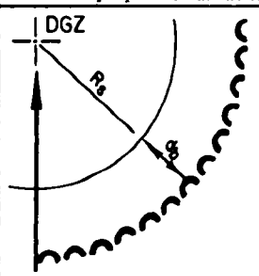

Figure 4. Quarter circle.

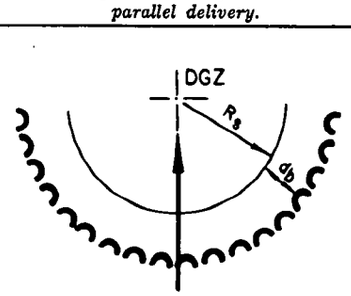

Figure 5. Half circle.

When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figures 2.4o(1) through 2.4b(2) must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

All Height of Burst Options—All Yields									
Range (meters)	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*	*Range (meters)*	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*
2,000	0	0	+100	+100	19,000	–100	0	+100	+100
3,000	0	0	+100	+100	20,000	–100	0	+100	+100
4,000	0	0	+100	+100					
5,000	0	0	+100	+100					
6,000	0	0	+100	+100					
7,000	0	0	+100	+100					
8,000	0	0	+100	+100					
9,000	0	0	+100	+100					
10,000	0	0	+100	+100					
11,000	0	0	+100	+100					
12,000	–100	0	+100	+100					
13,000	–100	0	+100	+100					
14,000	–100	0	+100	+100					
15,000	–100	0	+100	+100					
16,000	–100	0	+100	+100					
17,000	–100	0	+100	+100					
18,000	–100	0	+100	+100					

Figure 2.5.

[1]Medium-Range Cannon.
~~~

CASUALTY and DAMAGE Tables
Medium-Range Cannon

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
825													1,450	1,125	850	1,450	1,125	850	1,075	850	475
800		0											1,475	1,150	875	1,475	1,150	875	1,100	875	525
775		125										0	1,475	1,150	900	1,475	1,150	900	1,100	900	550
750		225				0						150	1,500	1,175	925	1,500	1,175	925	1,125	925	600
725		300				125				0		250	1,500	1,200	950	1,500	1,200	950	1,150	950	625
700		350				225				100		300	1,525	1,200	950	1,525	1,200	950	1,150	950	650
675		400				300				200		350	1,525	1,225	975	1,525	1,225	975	1,175	975	675
650		450				350				275		400	1,550	1,225	1,000	1,550	1,225	1,000	1,200	1,000	700
625		475				400				325		450	1,550	1,250	1,000	1,550	1,250	1,000	1,200	1,000	725
600		500		0		425				375		475	1,550	1,250	1,025	1,550	1,250	1,025	1,225	1,025	750
575	0	550		125		450				400	0	500	1,575	1,275	1,050	1,575	1,275	1,050	1,225	1,050	775
550	125	550		225	0	500				450	325	525	1,575	1,275	1,050	1,575	1,275	1,050	1,250	1,050	800
525	200	575		275	75	525			0	475	400	550	1,575	1,300	1,075	1,575	1,300	1,075	1,250	1,075	800
500	275	600		300	175	550			75	500	475	575	1,600	1,300	1,075	1,600	1,300	1,075	1,250	1,075	825
475	300	625		350	225	550		0	175	525	550	600	1,600	1,300	1,100	1,600	1,300	1,100	1,275	1,100	825
450	350	650		375	275	575		50	225	550	600	625	1,600	1,325	1,100	1,600	1,325	1,100	1,275	1,100	850
425	375	650	0	400	325	600		150	275	550	700	700	1,625	1,325	1,100	1,625	1,325	1,100	1,300	1,100	850
400	400	675	100	425	350	625		225	300	575	950	950	1,625	1,325	1,125	1,625	1,325	1,125	1,300	1,125	875
375	425	700	175	450	375	625		250	350	600	975	975	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	875
350	450	700	225	475	400	650		300	375	600	1,000	1,000	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	900
325	475	725	250	500	425	650		325	400	625	1,000	1,000	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
300	475	725	275	500	425	675	0	350	550	625	975	975	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
275	500	725	300	525	450	675	125	375	575	650	950	950	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
250	500	750	325	525	475	700	175	375	575	650	925	925	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
225	525	750	350	550	475	700	200	400	575	675	875	875	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	925
200	525	750	350	550	500	700	225	400	575	675	850	850	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
175	550	775	375	575	500	725	250	425	525	675	800	800	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
150	550	775	375	575	500	725	250	425	500	700	775	775	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
125	550	775	400	575	525	725	275	450	500	700	750	750	1,675	1,375	1,175	1,675	1,375	1,175	1,350	1,175	950
100	550	775	400	575	525	725	275	450	500	700	725	750	1,675	1,400	1,175	1,675	1,400	1,175	1,350	1,175	950
75	550	775	400	575	525	725	300	450	500	700	700	750	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,175	950
50	550	775	400	600	525	725	300	450	500	700	675	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
25	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
0	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950

HOB_{fs} = 30 m

Low HOB_{min} = 53 m

High HOB_{min} = 120 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 2.6a.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float bridge	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV.
825										1,550			0–5				0–500	
800										1,575			0–5				0–550	
775										1,600			0–10				0–550	
750							0			1,625			0–10				0–600	
725							200			1,650			0–10				0–650	
700							275			1,650			0–10				0–650	
675							325			1,675			0–15				0–700	
650							375			1,675			0–20				0–700	
625							425			1,675		0	0–20			0	0–750	
600							450			1,675		0–5	0–25			0–50	0–750	
575							475			1,700		0–5	0–30			0–200	0–800	
550							500			1,700		0–5	0–40			0–250	0–800	
525							525			1,700		0–5	0–50			0–300	0–800	
500							550			1,700		0–5	0–60			0–350	0–800	
475							575			1,700		0–10	0–90			0–400	0–850	
450							600			1,700		0–10	5–120			0–400	50–850	
425							625			1,700	0	0–15	10–150		0	0–450	150–900	
400							625			1,700	0–5	0–20	10–200		0–50	0–450	200–900	
375							650			1,675	0–5	0–25	15–260		0–150	0–500	250–900	
350							675	0		1,675	0–5	0–30	15–320		0–200	0–500	300–900	
325							675	125		1,650	0–5	0–35	20–400		0–250	0–500	350–900	
300				0			675	175		1,650	0–5	5–40	20–480		0–300	50–550	350–950	
275				25			700	200		1,625	0–10	5–50	25–580		0–300	150–550	400–950	
250				75			700	250		1,600	0–10	5–55	30–660		0–350	200–550	400–950	
225	0			125			725	250		1,600	0–10	5–65	35–780		0–350	200–600	400–950	
200	50		0	150		0	725	275	0	1,575	0–10	5–90	50–1,080		0–350	250–600	450–950	
175	150	0	25	175		250	725	300	50	1,550	0–15	5–110	60–1,320		0–400	250–600	450–950	
150	200	25	75	200		250	725	300	100	1,525	0–15	10–140	70–1,680		0–400	300–600	450–950	
125	225	50	100	225		250	750	325	125	1,500	0–20	10–185	90–2,220		0–400	300–600	450–950	
100	250	100	125	225	0	275	750	325	150	1,475	0–25	10–225	110–2,700		0–400	300–600	450–950	
75	250	150	125	250	225	275	750	325	175	1,450	0–35	15–290	140–3,500		0–400	300–600	450–950	
50	250	150	150	250	250	275	725	325	175	1,400	5–40	15–350	170–4,200	0	50–400	300–600	450–950	0
25	250	150	150	250	225	250	575	350	150	1,375	FALLOUT GOVERNS							
0	175	125	100	200	150	200	450	250	125	1,325								

Figure 2.6a continued.

[1] Medium-Range Cannon.

CASUALTY and DAMAGE Tables
Medium-Range Cannon
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
900		0											1,975	1,300	950	1,525	1,200	950	1,125	800	325
875		175										0	1,975	1,300	950	1,525	1,200	950	1,150	825	400
850		275				0						175	2,000	1,325	975	1,550	1,225	975	1,150	850	450
825		350				175				0		275	2,000	1,350	1,000	1,550	1,250	1,000	1,175	875	500
800		400				250				100		350	2,025	1,350	1,025	1,575	1,275	1,025	1,200	900	525
775		450				325				225		400	2,025	1,375	1,050	1,575	1,275	1,050	1,225	925	575
750		475				375				300		450	2,025	1,400	1,075	1,600	1,300	1,075	1,225	950	600
725		525				425				350		475	2,050	1,400	1,075	1,600	1,300	1,075	1,250	975	625
700		550		0		475				400		525	2,050	1,400	1,100	1,625	1,325	1,100	1,250	1,000	650
675		575		125		500				450	0	550	2,050	1,425	1,100	1,625	1,325	1,100	1,275	1,000	675
650		600		225		525				475	300	575	2,075	1,425	1,125	1,650	1,350	1,125	1,275	1,025	700
625	0	625		275	0	550				500	375	600	2,075	1,450	1,150	1,650	1,350	1,150	1,300	1,050	725
600	150	650		325	150	600			0	525	450	625	2,075	1,450	1,150	1,650	1,375	1,150	1,300	1,050	750
575	250	675		375	225	625			150	550	525	650	2,100	1,475	1,175	1,675	1,375	1,175	1,325	1,075	775
550	300	700		400	275	625		0	225	575	600	675	2,100	1,475	1,175	1,675	1,400	1,175	1,325	1,075	800
525	325	725		450	325	650		100	275	600	750	750	2,100	1,500	1,200	1,675	1,400	1,200	1,350	1,100	800
500	375	725		475	375	675		200	325	625	900	900	2,100	1,500	1,200	1,700	1,400	1,200	1,350	1,100	825
475	400	750	0	500	400	700		250	350	650	1,075	1,075	2,125	1,500	1,200	1,700	1,425	1,200	1,350	1,125	825
450	425	775	125	525	425	700		275	400	675	1,175	1,175	2,125	1,500	1,225	1,700	1,425	1,225	1,375	1,125	850
425	450	775	200	550	450	725		325	425	675	1,175	1,175	2,125	1,525	1,225	1,700	1,425	1,225	1,375	1,125	850
400	475	800	250	550	475	750		350	450	700	1,200	1,200	2,125	1,525	1,250	1,725	1,450	1,250	1,375	1,150	875
375	500	800	275	575	500	750	0	375	625	700	1,200	1,200	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	875
350	525	825	300	600	500	775	100	400	675	725	1,175	1,175	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	900
325	525	825	325	600	525	775	175	425	675	725	1,175	1,175	2,150	1,550	1,250	1,725	1,450	1,250	1,400	1,175	900
300	550	825	350	625	550	775	200	450	675	750	1,125	1,125	2,150	1,550	1,275	1,725	1,475	1,275	1,400	1,175	900
275	550	850	375	625	550	800	250	450	675	750	1,100	1,100	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
250	575	850	400	625	575	800	275	475	650	750	1,050	1,050	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
225	575	850	400	650	575	800	300	475	650	775	1,025	1,025	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	925
200	575	875	425	650	600	825	300	500	625	775	975	975	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	950
175	600	875	425	675	600	825	325	500	600	775	950	950	2,175	1,575	1,300	1,750	1,475	1,300	1,425	1,200	950
150	600	875	450	675	600	825	325	525	575	800	925	925	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
125	600	875	450	675	600	825	350	525	575	800	900	900	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
100	600	875	450	675	625	825	350	525	575	800	850	850	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
75	625	875	450	675	625	850	350	525	600	800	825	875	2,175	1,575	1,300	1,750	1,500	1,300	1,450	1,200	950
50	625	900	450	675	625	850	350	525	600	800	800	875	2,025	1,550	1,300	1,750	1,500	1,300	1,450	1,200	950
25	625	900	475	675	625	850	375	525	600	800	775	875	1,900	1,525	1,300	1,750	1,500	1,300	1,450	1,200	950
0	625	900	475	675	625	850	375	525	600	800	775	875	1,750	1,500	1,300	1,750	1,500	1,300	1,450	1,200	950

HOB_{fs} = 38 m

Low HOB_{min} = 67 m

High HOB_{min} = 152 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 2.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
							2d-degree burns				Induced contamination							
											Intensity at CZ (rad/hr)				2 rad/hr radius			
HOB	Mod dam wheeled vehicles	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	Exposed skin	2-layer summer uniform	4-layer winter uniform	1 PSI over-pressure	Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
900							550			2,075			0–5				0–500	
875							575			2,100			0–10				0–600	
850							625			2,100			0–10				0–650	
825							650			2,100			0–10				0–700	
800							675			2,100			0–10				0–700	
775							700			2,125			0–15				0–750	
750							725			2,125			0–15				0–750	
725							750			2,125		0	0–20			0	0–800	
700							775			2,125		0–5	0–20			0–50	0–600	
675							800			2,150		0–5	0–25			0–200	0–850	
650							825			2,150		0–5	0–35			0–300	0–850	
625							850			2,150		0–5	0–40			0–350	0–850	
600							850			2,150		0–5	5–50			0–400	50–900	
575							875			2,150		0–5	5–60			0–400	200–900	
550							900			2,150		0–10	5–75			0–450	250–900	
525							900			2,125	0	0–10	5–100		0	0–450	300–960	
500							925			2,125	0–5	0–10	5–120		0–50	0–300	350–950	
475							925	0		2,125	0–5	0–15	10–180		0–150	0–350	400–950	
450							950	150		2,100	0–5	0–20	10–230		0–250	0–550	400–1,000	
425							950	200		2,100	0–5	0–25	15–300		0–300	0–600	450–1,000	
400							975	250		2,075	0–5	0–35	20–400		0–300	0–600	450–1,000	
375				0			975	300		2,075	0–5	0–50	20–520		0–350	0–600	500–1,000	
350				25			1,000	325		2,050	0–10	5–60	25–640		0–400	50–650	500–1,000	
325				75			1,000	350		2,025	0–10	5–70	35–800		0–400	150–650	500–1,000	
300	0			125			1,000	375		2,025	0–10	5–80	40–940		0–400	200–650	550–1,050	
275	25			175		0	1,025	375	0	2,000	0–15	5–100	50–1,140		0–450	250–650	550–1,050	
250	100		0	200		250	1,025	400	50	1,975	0–15	5–110	60–1,320		0–450	250–700	550–1,050	
225	150	0	25	250		300	1,025	425	125	1,950	0–15	10–130	70–1,560		0–450	300–700	600–1,050	
200	250	25	75	250		325	1,025	425	150	1,925	0–20	10–180	90–2,160		0–500	300–700	600–1,050	
175	275	50	100	275		325	1,025	450	175	1,900	0–25	10–220	110–2,700		0–500	350–700	600–1,050	
150	300	100	125	300		350	1,050	450	200	1,875	0–35	15–280	140–3,400		0–500	350–700	600–1,050	
125	325	125	150	300	0	350	1,050	450	225	1,850	0–40	15–370	180–4,500		0–500	350–700	600–1,050	
100	350	175	175	325	275	350	1,050	475	225	1,825	5–50	20–450	220–5,400		50–500	350–700	600–1,050	
75	350	200	175	325	300	375	1,050	475	250	1,775	5–70	25–580	280–7,000	0	100–500	350–700	600–1,050	0
50	350	200	200	325	300	375	925	425	225	1,750	5–80	30–700	340–8,400	0–5	100–500	350–700	600–1,050	0–80
25	300	200	175	325	275	350	775	350	200	1,725	FALLOUT GOVERNS							
0	225	150	125	275	250	300	625	300	150	1,675								

Figure 2.6b continued.

[1]Medium-Range Cannon.

CONTINGENT EFFECTS Tables
Medium-Range Cannon

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.

Yield KT	*HOB*	*Estimated radii in meters of 2 rad/hr contour of induced radiation 1 hour after burst. (See note 2.)*				*Estimated induced radiation intensity, 1 hour after burst, at GZ. In rad/hr. (See note 2.)*			
		Soil type I (Liberia, Africa)	*Soil type II (Nevada desert)*	*Soil type III (lava clay, Hawaii)*	*Soil type IV (beach sand, Pensacola, Fla)*	*Soil type I*	*Soil type II*	*Soil type III*	*Soil type IV*
BRAVO/1	Low	50–400	300–600	450–950	0	5–40	15–350	170–4,200	0
	High	0–400	300–600	450–950	0	0–25	10–225	110–2,700	0
CHARLIE/2	Low	100–500	350–700	600–1,050	0–50	5–80	30–700	340–8,400	0–5
	High	0–500	350–700	600–1,050	0	0–40	15–370	180–4,500	0

NOTES: 1. For description of chemical composition and effects of vsristions in chemical composition in soil types, see FM101-31-1, app III, annex F.

2. For range dependent delivery systems, intensities and 2 rad/hr contours are given for minimum ranges.

Figure 2.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	*OBSTACLES TO MOVEMENT*							*CASUALTIES TO EXPOSED PERSONNEL*		
	Foot and wheeled vehicle movement				*Tracked vehicle movement*					
	Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*
BRAVO/1	300	400	400	700	300	400	400	200	300	300
CHARLIE/2	350	500	550	900	350	500	550	250	400	400

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 2.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	*AIRCRAFT SAFETY RADII-meters (See note 2.)*		
	Light fixed wing	*Recon and obsn hel*	*Transport and util hel*
BRAVO/1	5,000	5,000	5,000
CHARLIE/2	6,000	6,000	5,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of safety.

Figure 2.7c.

Yield KT	HOB	Expected radii for ignition of wildland fuels during fire season—meters							
		Dry climate (25 percent relative humidity)				Damp climate (75 percent relative humidity)			
		Class I	Class II	Class III	Class IV	Class I	Class II	Class III	Class IV
BRAVO/1	Air	1,100	1,000	900	700	1,000	1,000	800	600
CHARLIE/2	Air	1,400	1,300	1,000	800	1,300	1,300	1,100	800

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 2.7d.

MRC 1

TACTICAL SYSTEM ACCURACY DATA
Medium-Range Cannon

All distances in meters

Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)	Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)
		PE_R	PE_D	PE_h				PE_R	PE_D	PE_h	
2,000	14	10	5	5	30	18,000	125	90	45	45	245
3,000	21	15	8	8	45	19,000	132	95	48	48	260
4,000	28	20	10	10	55	20,000	138	100	50	50	270
5,000	35	25	13	13	70						
6,000	42	30	15	15	85						
7,000	49	35	18	18	95						
8,000	56	40	20	20	110						
9,000	63	45	23	23	125						
10,000	69	50	25	25	135						
11,000	76	55	28	28	150						
12,000	83	60	30	30	165						
13,000	90	65	33	33	180						
14,000	97	70	35	35	190						
15,000	104	75	38	38	205						
16,000	111	80	40	40	220						
17,000	118	85	43	43	230						

[1]Equivalent CEP= $1.2345\ (PE_R^2 + PE_D^2)^{1/2}$.

Figure 2.8.

[1]Medium-Range Cannon.

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CHAPTER 3
LONG-RANGE CANNON

3.1 GENERAL

a. Orientation. This chapter contains employment data for the long-range cannon.

b. Weapon characteristics.

(1) *Yield.* The long-range cannon can fire nuclear projectiles with yields of Charlie/2 KT, Delta/5 KT, Echo/10 KT, Foxtrot/20 KT and Golf/50 KT.

(2) *Fuzing.* The nuclear projectiles for the long-range cannon have an airburst fuzing capability. The projectiles are fuzed by time fuzes which are set for the desired time of flight by the delivery unit. These projectiles do not have a contact surface fuzing capability. If a projectile impacts, it can be expected to break up and become a dud.

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the long-range cannon nuclear projectiles are 3,000 meters and 30,000 meters.

(2) *Tactical system accuracy.* The horizontal and vertical dispersion errors for the long-range cannon are dependent on range. Tactical system accuracy data are contained in figure 3.8.

(3) *Unit carrying capacity.* Not a limitation in this case.

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

Situation	*Time (minutes)*
I[1]	30
II[2]	5

[1]Situation I (high readiness)—the complete round and delivery system are in a firing position and survey is completed. Preliminary firing data for a specific target are *not* available. (May be used to engage target of opportunity.)

[2]Situation II (maximum readiness)—the round is positioned, fuzed, and ready to fire. Firing data for a specific target have been computed and applied to the weapon system. The firing unit is in a "do not load" status awaiting the order to fire. (Typical of readiness to engage on-call target.)

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes the desired height of burst in meters.

LRC 1

[1]Long-Range Cannon.

EXPOSED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 700	800	900	1,000	1,100	1,200	1,300	1,400	DELAYED CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	2,300	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	625	875	45	67
4,000	2,300	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	625	875	55	73
5,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	70	82
6,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	85	91
7,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	95	100
8,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	110	108
9,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	125	117
10,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	135	126
11,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	150	135
12,000	2,400	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	875	165	143
13,000	2,400	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	875	180	152
14,000	2,500	.6/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	190	161
15,000	2,500	.6/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	205	170
16,000	2,500	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	220	178
17,000	2,500	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	850	230	187
18,000	2,500	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	850	245	196
19,000	2,500	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	850	260	205
20,000	2,600	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	825	270	213
21,000	2,600	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	825	285	222
22,000	2,600	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	825	300	231
23,000	2,600	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	525	825	315	240
24,000	2,600	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	500	825	325	248
25,000	2,700	.4/.6	.3/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	500	800	340	257
26,000	2,700	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	475	800	355	266
27,000	2,700	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	475	800	365	275
28,000	2,700	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	450	775	380	283
29,000	2,700	.3/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	775	395	292
30,000	2,700	.3/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	.0/.1	.6/.8	.5/.6	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	775	405	301

Figure 3.1a(1).

EXPOSED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES										
		Target radius (meters)								Target radius (meters)								(meters)		
(meters)	(meters)	600	700	800	900	1,000	1,100	1,200	1,300	600	800	1,000	1,200	1,400	1,600	1,800	2,000	Prompt	Delayed	(meters)	(meters)
3,000	2,300	.8/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	875	45	160
4,000	2,300	.8/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	875	55	168
5,000	2,300	.7/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	875	70	177
6,000	2,300	.7/.8	.6/.7	.5/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	875	85	186
7,000	2,300	.7/.8	.6/.7	.5/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	850	95	195
8,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	850	110	203
9,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	850	125	212
10,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	135	221
11,000	2,400	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	150	230
12,000	2,400	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	165	238
13,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	825	180	247
14,000	2,500	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	525	825	190	256
15,000	2,500	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	525	825	205	265
16,000	2,500	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	525	825	220	273
17,000	2,500	.6/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	500	825	230	282
18,000	2,500	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	500	800	245	291
19,000	2,500	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	475	800	260	300
20,000	2,600	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	475	800	270	308
21,000	2,600	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	775	285	317
22,000	2,600	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	775	300	326
23,000	2,600	.4/.6	.3/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	425	775	315	335
24,000	2,600	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	425	775	325	343
25,000	2,600	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	400	750	340	352
26,000	2,700	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.2	.0/.1	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	400	750	355	361
27,000	2,700	.3/.6	.3/.4	.2/.4	.1/.3	.1/.2	.1/.2	.1/.2	.0/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	375	750	365	370
28,000	2,700	.3/.5	.2/.4	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.0/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	350	725	380	378
29,000	2,700	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.1/.2	.0/.2	.0/.1	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	325	725	395	387
30,000	2,700	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.1		.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	300	700	405	396

Figure 3.1a(2).

[1]Long-Range Cannon.

LRC 1

EXPOSED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200
3,000	3,200	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
4,000	3,300	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
5,000	3,300	.8/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
6,000	3,400	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	.1/.1
7,000	3,400	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
8,000	3,400	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
9,000	3,400	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
10,000	3,400	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
11,000	3,400	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
12,000	3,500	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
13,000	3,500	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
14,000	3,500	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
15,000	3,500	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
16,000	3,500	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
17,000	3,500	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
18,000	3,600	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
19,000	3,600	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
20,000	3,600	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
21,000	3,600	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
22,000	3,600	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
23,000	3,600	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
24,000	3,700	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
25,000	3,700	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
26,000	3,700	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
27,000	3,700	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
28,000	3,700	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
29,000	3,800	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
30,000	3,800	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	

DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1
.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1

Probable minimum R_D. (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
800	1,050	45	91
800	1,050	55	91
775	1,050	70	96
775	1,025	85	105
775	1,025	95	114
775	1,025	110	122
775	1,025	125	131
775	1,025	135	140
775	1,025	150	149
775	1,025	165	157
750	1,025	180	166
750	1,000	190	175
750	1,000	205	184
750	1,000	220	192
750	1,000	230	201
750	1,000	245	210
725	1,000	260	219
725	1,000	270	227
725	1,000	285	236
725	975	300	245
700	975	315	254
700	975	325	262
700	975	340	271
675	975	355	280
675	950	365	289
675	950	380	297
650	950	395	306
650	950	405	315

Figure 3.1b(1).

EXPOSED Personnel Targets
Long-Range Cannon

***HIGH* Airburst**
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000
3,000	3,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
4,000	3,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
5,000	3,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
6,000	3,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
7,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
8,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
9,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
10,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
11,000	3,400	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
12,000	3,500	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
13,000	3,500	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
14,000	3,500	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
15,000	3,500	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
16,000	3,500	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
17,000	3,500	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
18,000	3,600	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
19,000	3,600	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
20,000	3,600	.8/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1
21,000	3,600	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1
22,000	3,600	.7/.9	.5/.7	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.0/.1
23,000	3,600	.7/.8	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1
24,000	3,700	.7/.8	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1
25,000	3,700	.7/.8	.5/.6	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1	
26,000	3,700	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
27,000	3,700	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
28,000	3,700	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	
29,000	3,700	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	
30,000	3,800	.6/.8	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	

DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,025	45	207
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,025	55	215
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,025	70	224
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,000	85	233
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,000	95	242
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,000	110	250
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	1,000	125	259
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	1,000	135	268
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	1,000	150	277
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	975	165	285
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	700	975	180	294
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	700	975	190	303
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	700	975	205	312
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	700	975	220	320
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	675	950	230	329
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	675	950	245	338
.8/.9	.5/.7	.3/.4	.2/.2	.1/.2	.1/.1	650	950	260	347
.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	650	950	270	355
.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	650	950	285	364
.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	625	925	300	373
.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	625	925	315	382
.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	625	925	325	390
.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	600	925	340	399
.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1	600	900	355	408
.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1	575	900	365	417
.8/.9	.5/.6	.2/.4	.1/.2	.1/.2	.0/.1	575	875	380	425
.8/.9	.5/.6	.2/.4	.1/.2	.1/.2	.0/.1	550	875	395	434
.7/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1	550	875	405	443

Figure 3.1b(2).

[1] Long-Range Cannon.

LRC 1

EXPOSED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	3,800	.7/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,175	45	115
4,000	3,900	.7/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,175	55	115
5,000	4,100	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,175	70	115
6,000	4,200	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	85	118
7,000	4,200	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	95	127
8,000	4,200	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	110	135
9,000	4,200	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	125	144
10,000	4,200	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	135	153
11,000	4,300	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	150	162
12,000	4,300	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	165	170
13,000	4,300	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	180	179
14,000	4,300	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	190	188
15,000	4,300	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	205	197
16,000	4,400	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	220	205
17,000	4,400	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	230	214
18,000	4,400	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	245	223
19,000	4,400	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	260	232
20,000	4,400	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	270	240
21,000	4,400	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,125	285	249
22,000	4,500	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,125	300	258
23,000	4,500	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,100	315	267
24,000	4,500	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,100	325	275
25,000	4,500	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	875	1,100	340	284
26,000	4,500	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,100	355	293
27,000	4,500	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,100	365	302
28,000	4,600	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	380	310
29,000	4,600	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	395	319
30,000	4,600	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	405	328

Figure 3.1c(1).

EXPOSED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200
3,000	4,100	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
4,000	4,100	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
5,000	4,200	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
6,000	4,200	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
7,000	4,200	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
8,000	4,200	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
9,000	4,200	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
10,000	4,200	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
11,000	4,300	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
12,000	4,300	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
13,000	4,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
14,000	4,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
15,000	4,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
16,000	4,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
17,000	4,400	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
18,000	4,400	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
19,000	4,400	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
20,000	4,400	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
21,000	4,400	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2
22,000	4,400	.7/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2
23,000	4,500	.7/.8	.5/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.1
24,000	4,500	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.1
25,000	4,500	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1
26,000	4,500	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.1	
27,000	4,500	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.1	
28,000	4,500	.5/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.1	
29,000	4,600	.5/.7	.4/.6	.2/.4	.2/.3	.1/.3	.1/.2	.1/.1	
30,000	4,600	.5/.7	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	

DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	45	259
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	55	262
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	70	271
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	85	280
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	95	289
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	110	297
.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,125	125	306
.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,125	135	315
.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,100	150	324
.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,100	165	332
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	875	1,100	180	341
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,100	190	350
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,100	205	359
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	220	367
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	230	376
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	245	385
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	260	394
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	825	1,050	270	402
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	775	1,050	285	411
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	725	1,050	300	420
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	725	1,050	315	429
.9/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1	700	1,025	325	437
.9/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	700	1,025	340	446
.8/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	675	1,025	355	455
.8/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	675	1,000	365	464
.8/.9	.6/.8	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	650	1,000	380	472
.8/.9	.6/.8	.3/.4	.2/.3	.1/.2	.1/.2		650	1,000	395	481
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2		625	975	405	490

Figure 3.1c(2).

[1]Long-Range Cannon.

LRC 1

EXPOSED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	5,100	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,075	1,250	45	144
4,000	5,300	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,075	1,250	55	144
5,000	5,500	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,075	1,250	70	144
6,000	5,700	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,250	85	144
7,000	5,900	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,250	95	144
8,000	6,000	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,250	110	152
9,000	6,100	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,250	125	161
10,000	6,100	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,250	135	170
11,000	6,100	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,250	150	179
12,000	6,100	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,225	165	187
13,000	6,100	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,225	180	196
14,000	6,100	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	190	205
15,000	6,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	205	214
16,000	6,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	220	222
17,000	6,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	230	231
18,000	6,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	245	240
19,000	6,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	260	249
20,000	6,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	270	257
21,000	6,300	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	285	266
22,000	6,300	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	300	275
23,000	6,300	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	315	284
24,000	6,300	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	325	292
25,000	6,300	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	340	301
26,000	6,400	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,175	355	310
27,000	6,400	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	365	319
28,000	6,400	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	380	327
29,000	6,400	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	390	336
30,000	6,400	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,150	405	345

Figure 3.1d(1).

EXPOSED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	5,900	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,150	1,225	45	326
4,000	6,000	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,150	1,225	55	326
5,000	6,000	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.1		1,150	1,200	70	330
6,000	6,000	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,200	85	339
7,000	6,000	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,200	95	348
8,000	6,000	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,200	110	356
9,000	6,000	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,200	125	365
10,000	6,100	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,200	135	374
11,000	6,100	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	150	383
12,000	6,100	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	165	391
13,000	6,100	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	180	400
14,000	6,100	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	190	409
15,000	6,200	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,150	205	418
16,000	6,200	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,150	220	426
17,000	6,200	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		1,150	1,150	230	435
18,000	6,200	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1		1,125	1,150	245	444
19,000	6,200	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1		1,125	1,125	260	453
20,000	6,200	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1		1,125	1,125	270	461
21,000	6,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		1,125	1,125	285	470
22,000	6,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		1,125	1,125	300	479
23,000	6,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		1,125	1,125	315	488
24,000	6,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		1,125	1,125	325	496
25,000	6,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		1,100	1,100	340	505
26,000	6,300	.8/.9	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		1,050	1,075	355	514
27,000	6,400	.8/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		1,000	1,075	365	523
28,000	6,400	.7/.8	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		800	1,075	380	531
29,000	6,400	.6/.8	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		725	1,050	390	540
30,000	6,400	.5/.8	.3/.7	.2/.6	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		725	1,050	405	549

Figure 3.1d(2).

LRC 1

[1]Long-Range Cannon.

EXPOSED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	DELAYED CASUALTIES — Target radius (meters) 1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	7,200	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,550	1,550	45	196
4,000	7,400	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.8/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,550	1,550	55	196
5,000	7,600	.8/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,550	1,550	70	196
6,000	7,800	.8/.8	.5/.6	.4/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.5/.6	.4/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,550	1,550	85	196
7,000	8,000	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,575	1,575	95	196
8,000	8,200	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,575	1,575	110	196
9,000	8,500	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,575	1,575	125	196
10,000	8,700	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,575	1,575	135	199
11,000	8,900	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,575	1,575	150	208
12,000	8,900	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,575	1,575	165	216
13,000	9,000	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,575	1,575	180	225
14,000	9,000	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	190	234
15,000	9,000	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	205	243
16,000	9,000	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	220	251
17,000	9,000	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	230	260
18,000	9,000	.8/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	245	269
19,000	9,100	.8/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	260	278
20,000	9,100	.8/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	270	286
21,000	9,100	.8/.9	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,600	1,600	285	295
22,000	9,100	.8/.9	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.6	.3/.4	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	300	304
23,000	9,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	315	313
24,000	9,200	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	325	321
25,000	9,200	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	340	330
26,000	9,200	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	355	339
27,000	9,200	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	365	348
28,000	9,200	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	380	356
29,000	9,200	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	395	365
30,000	9,300	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	405	374

Figure 3.1e(1).

EXPOSED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	Prompt	Delayed	(meters)	(meters)
3,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	45	442
4,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	55	442
5,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	70	442
6,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	85	442
7,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	95	449
8,000	8,900	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	110	457
9,000	8,900	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	125	466
10,000	8,900	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	135	475
11,000	8,900	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	150	484
12,000	8,900	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	165	492
13,000	9,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	180	501
14,000	9,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	190	510
15,000	9,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	205	519
16,000	9,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	220	527
17,000	9,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	230	536
18,000	9,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	245	545
19,000	9,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	260	554
20,000	9,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	270	562
21,000	9,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	285	571
22,000	9,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	300	580
23,000	9,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	315	589
24,000	9,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	325	597
25,000	9,200	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	340	606
26,000	9,200	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,650	1,650	355	615
27,000	9,200	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	365	624
28,000	9,200	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	380	632
29,000	9,200	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	395	641
30,000	9,200	.7/.8	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,625	1,625	405	650

LRC 1

Figure 3.1e(2).

[1]Long-Range Cannon.

PROTECTED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)											
(meters)	(meters)	400	500	600	700	800	900	1,000	1,100	400	600	800	1,000	1,200	1,400	1,600	1,800	Prompt	Delayed	(meters)	(meters)
3,000	2,300	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	45	67
4,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	55	73
5,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	70	82
6,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	85	91
7,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	95	100
8,000	2,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	450	675	110	108
9,000	2,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	675	125	117
10,000	2,400	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	675	135	126
11,000	2,400	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	650	150	135
12,000	2,400	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	165	143
13,000	2,400	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	180	152
14,000	2,500	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	190	161
15,000	2,500	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	650	205	170
16,000	2,500	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	625	220	178
17,000	2,500	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	230	187
18,000	2,500	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	245	196
19,000	2,500	.6/.8	.4/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	260	205
20,000	2,600	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	600	270	213
21,000	2,600	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	600	285	222
22,000	2,600	.5/.7	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	600	300	231
23,000	2,600	.4/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	600	315	240
24,000	2,600	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	575	325	248
25,000	2,700	.3/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	275	575	340	257
26,000	2,700	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	575	355	266
27,000	2,700	.3/.6	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	225	550	365	275
28,000	2,700	.2/.5	.2/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1		.7/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	200	550	380	283
29,000	2,700	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	175	525	395	292
30,000	2,700	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		150	525	405	301

Figure 3.2a(1).

PROTECTED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	400	500	600	700	800	900	1,000	1,100	400	600	800	1,000	1,200	1,400	1,600	1,800	Prompt	Delayed	(meters)	(meters)
3,000	2,300	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	45	160
4,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	55	168
5,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	70	177
6,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	85	186
7,000	2,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	95	195
8,000	2,400	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	650	110	203
9,000	2,400	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	625	125	212
10,000	2,400	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	135	221
11,000	2,400	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	150	230
12,000	2,400	.6/.8	.5/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	165	238
13,000	2,400	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	600	180	247
14,000	2,500	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	600	190	256
15,000	2,500	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	600	205	265
16,000	2,500	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	600	220	273
17,000	2,500	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	575	230	283
18,000	2,500	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	275	575	245	291
19,000	2,500	.3/.6	.2/.4	.1/.3	.1/.3	.1/.2	.0/.1			.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	575	260	300
20,000	2,600	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1			.8/.9	.6/.8	.4/.6	.2/.4	.2/.3	.1/.2	.1/.1		225	550	270	308
21,000	2,600	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1			.8/.9	.6/.8	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		200	550	285	317
22,000	2,600	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1			.8/.9	.6/.8	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		175	525	300	326
23,000	2,600	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			.8/.9	.6/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		150	525	315	335
24,000	2,600	.1/.4	.0/.3	.0/.3	.0/.2	.0/.1				.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		100	500	325	343
25,000	2,600	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	500	340	352
26,000	2,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	475	355	361
27,000	2,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	475	365	370
28,000	2,700	.0/.3	.0/.3	.0/.2	.0/.1					.6/.8	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	450	380	378
29,000	2,700	.0/.3	.0/.2	.0/.2	.0/.1					.6/.8	.4/.6	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	450	395	387
30,000	2,700	.0/.3	.0/.2	.0/.2	.0/.1					.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	425	405	396

Figure 3.2a(2).

LRC 1

[1] Long-Range Cannon.

PROTECTED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800
3,000	3,200	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
4,000	3,300	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
5,000	3,300	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
6,000	3,400	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
7,000	3,400	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
8,000	3,400	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	
9,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	
10,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	
11,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	
12,000	3,500	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	
13,000	3,500	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	
14,000	3,500	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	
15,000	3,500	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	
16,000	3,500	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	
17,000	3,500	.9/.9	.6/.8	.4/.5	.2/.4	.2/.2	.1/.2	.1/.1	
18,000	3,600	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	
19,000	3,600	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	
20,000	3,600	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	
21,000	3,600	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	
22,000	3,600	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	
23,000	3,600	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	
24,000	3,700	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	
25,000	3,700	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	
26,000	3,700	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	
27,000	3,700	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	
28,000	3,700	.6/.8	.4/.6	.3/.4	.1/.3	.1/.2	.1/.2	.0/.1	
29,000	3,800	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		
30,000	3,800	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		

DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	625	825	45	91
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	825	55	91
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	70	96
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	85	105
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	95	114
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	110	122
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	125	131
.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	135	140
.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	575	800	150	149
.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	575	800	165	157
.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	575	800	180	166
.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	575	775	190	175
.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.3	.1/.2	.1/.2	575	775	205	184
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	775	220	192
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	775	230	201
.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	775	245	210
.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	750	260	219
.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	270	227
.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	285	236
.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	500	750	300	245
.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	500	725	315	254
.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	500	725	325	262
.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	475	725	340	271
.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	475	725	355	280
.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	700	365	289
.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	700	380	297
.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	700	395	306
.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	675	405	315

Figure 3.2b(1).

PROTECTED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600
3,000	3,300	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1
4,000	3,300	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1
5,000	3,300	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1
6,000	3,300	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1
7,000	3,400	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1
8,000	3,400	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1
9,000	3,400	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1
10,000	3,400	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1
11,000	3,400	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1
12,000	3,500	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1
13,000	3,500	.9/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1
14,000	3,500	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1
15,000	3,500	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1
16,000	3,500	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	
17,000	3,500	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	
18,000	3,600	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	
19,000	3,600	.7/.9	.5/.6	.3/.4	.1/.3	.1/.2	.0/.1	
20,000	3,600	.7/.9	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1	
21,000	3,600	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1	
22,000	3,600	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1	
23,000	3,600	.6/.8	.3/.6	.2/.3	.1/.2	.0/.2	.0/.1	
24,000	3,700	.5/.8	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1	
25,000	3,700	.5/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1	
26,000	3,700	.4/.7	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1	
27,000	3,700	.4/.7	.2/.5	.1/.3	.0/.2	.0/.1		
28,000	3,700	.3/.7	.2/.5	.1/.3	.0/.2	.0/.1		
29,000	3,700	.3/.6	.1/.4	.0/.3	.0/.2	.0/.1		
30,000	3,800	.2/.6	.1/.4	.0/.3	.0/.2	.0/.1		

DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	575	800	45	207
.9/.9	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	575	775	55	215
.9/.9	.8/.8	.5/.6	.4/.4	.2/.3	.2/.3	.1/.2	.1/.2	575	775	70	224
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	85	233
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	95	242
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	110	250
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	125	259
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	135	268
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	150	277
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	165	285
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	500	750	180	294
.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	500	725	190	303
.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	500	725	205	312
.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	475	725	220	320
.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	475	700	230	329
.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	700	245	338
.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	700	260	347
.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	675	270	355
.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	675	285	364
.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	675	300	373
.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	650	315	382
.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	650	325	390
.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	350	625	340	399
.7/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	325	625	355	408
.7/.8	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	300	625	365	417
.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	275	600	380	425
.6/.8	.5/.6	.3/.5	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1	250	600	395	434
.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		200	575	405	443

Figure 3.2b(2).

[1]Long-Range Cannon.

PROTECTED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, Unif Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Prompt	Delayed	(meters)	(meters)
3,000	3,800	.9/.9	.9/.9	.6/.8	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	700	925	45	115
4,000	3,900	.9/.9	.9/.9	.6/.8	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	700	900	55	115
5,000	4,100	.9/.9	.9/.9	.6/.8	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	700	900	70	115
6,000	4,200	.9/.9	.9/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	700	900	85	118
7,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	675	900	95	127
8,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	675	900	110	135
9,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	675	900	125	144
10,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	675	900	135	153
11,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	675	900	150	162
12,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	675	900	165	170
13,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	675	900	180	179
14,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	650	875	190	188
15,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	650	875	205	197
16,000	4,400	.9/.9	.8/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	650	875	220	205
17,000	4,400	.9/.9	.8/.9	.5/.7	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	650	875	230	214
18,000	4,400	.9/.9	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	875	245	223
19,000	4,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	850	260	232
20,000	4,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	625	850	270	240
21,000	4,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	625	850	285	249
22,000	4,500	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	850	300	258
23,000	4,500	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	850	315	267
24,000	4,500	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	825	325	275
25,000	4,500	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	825	340	284
26,000	4,500	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	575	825	355	293
27,000	4,500	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	550	825	365	302
28,000	4,600	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	550	800	380	310
29,000	4,600	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	525	800	395	319
30,000	4,600	.7/.9	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	525	800	405	328

Figure 3.2c(1).

PROTECTED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	600	800	1,000	1,200	1,400	1,600	1,800	2,000	Prompt	Delayed	(meters)	(meters)
3,000	4,100	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	650	875	45	259
4,000	4,100	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	650	875	55	262
5,000	4,200	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	650	875	70	271
6.000	4,200	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	625	875	85	280
7,000	4,200	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	625	850	95	289
8,000	4,200	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	625	850	110	297
9,000	4,200	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	625	850	125	306
10,000	4,200	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	850	135	315
11,000	4,300	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	850	150	324
12,000	4,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	825	165	332
13,000	4,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	825	180	341
14,000	4,300	.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	575	825	190	350
15,000	4,300	.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	550	825	205	359
16,000	4,300	.9/.9	.7/.8	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1		.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	550	800	220	367
17,000	4,400	.9/.9	.6/.8	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	525	800	230	376
18,000	4,400	.8/.9	.6/.8	.4/.5	.2/.4	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	525	800	245	385
19,000	4,400	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	525	775	260	394
20,000	4,400	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	500	775	270	402
21,000	4,400	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.7/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	475	775	285	411
22,000	4,400	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	475	750	300	420
23,000	4,500	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	450	750	315	429
24,000	4,500	.7/.9	.5/.7	.3/.4	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	450	725	325	437
25,000	4,500	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	425	725	340	446
26,000	4,500	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1			.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	400	725	355	455
27,000	4,500	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1			.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	375	700	365	464
28,000	4,500	.5/.8	.3/.6	.2/.4	.1/.3	.0/.2	.0/.1			.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	350	700	380	472
29,000	4,600	.4/.7	.3/.6	.1/.4	.1/.3	.0/.2	.0/.1			.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	350	675	395	481
30,000	4,600	.4/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1			.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	300	675	405	490

LRC 1

Figure 3.2c(2).

[1]Long-Range Cannon.

PROTECTED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200
3,000	5,100	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
4,000	5,300	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
5,000	5,500	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
6,000	5,700	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	.1/.1
7,000	5,900	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
8,000	6,000	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
9,000	6,100	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
10,000	6,100	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
11,000	6,100	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
12,000	6,100	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
13,000	6,100	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
14,000	6,100	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
15,000	6,200	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
16,000	6,200	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
17,000	6,200	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
18,000	6,200	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	
19,000	6,200	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
20,000	6,200	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
21,000	6,300	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
22,000	6,300	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
23,000	6,300	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
24,000	6,300	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
25,000	6,300	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
26,000	6,400	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
27,000	6,400	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
28,000	6,400	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	
29,000	6,400	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	
30,000	6,400	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	

DELAYED CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	45	144
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	55	144
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,025	70	144
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,000	85	144
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,000	95	144
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,000	110	152
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,000	125	161
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,000	135	170
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	775	1,000	150	179
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,000	165	187
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,000	180	196
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,000	190	205
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	975	205	214
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	975	220	222
.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	975	230	231
.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	975	245	240
.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	975	260	249
.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	975	270	257
.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	700	950	285	266
.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	300	275
.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	315	284
.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	325	292
.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	675	925	340	301
.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	675	925	355	310
.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	675	925	365	319
.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	650	925	380	327
.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	650	900	395	336
.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1	625	900	405	345

Figure 3.2d(1).

PROTECTED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	5,900	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.1	725	975	45	326
4,000	6,000	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.1	725	975	55	326
5,000	6,000	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.1	725	950	70	330
6,000	6,000	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.1	700	950	85	339
7,000	6,000	.9/.9	.7/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	95	348
8,000	6,000	.9/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	110	356
9,000	6,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	125	365
10,000	6,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	675	925	135	374
11,000	6,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	675	925	150	383
12,000	6,100	.8/.9	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	675	925	165	391
13,000	6,100	.8/.9	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	650	900	180	400
14,000	6,100	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	650	900	190	409
15,000	6,200	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1	625	900	205	418
16,000	6,200	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.3/.3	.1/.2	.1/.2	.0/.1	625	900	220	426
17,000	6,200	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.2/.3	.1/.2	.1/.2	.0/.1	625	875	230	435
18,000	6,200	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.8/.9	.5/.6	.2/.3	.1/.2	.1/.2	.0/.1	600	875	245	444
19,000	6,200	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.8/.9	.5/.6	.2/.3	.1/.2	.1/.2	.0/.1	600	875	260	453
20,000	6,200	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.8/.9	.5/.6	.2/.3	.1/.2	.1/.1		575	850	270	461
21,000	6,300	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.8/.9	.4/.6	.2/.3	.1/.2	.1/.1		575	850	285	470
22,000	6,300	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.8/.9	.4/.6	.2/.3	.1/.2	.1/.1		550	850	300	479
23,000	6,300	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.8/.9	.4/.6	.2/.3	.1/.2	.1/.1		525	825	315	488
24,000	6,300	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.9	.4/.5	.2/.3	.1/.2	.1/.1		525	825	325	496
25,000	6,300	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		500	825	340	505
26,000	6,300	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1			.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		475	800	355	514
27,000	6,400	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1			.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		475	800	365	523
28,000	6,400	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		450	775	380	531
29,000	6,400	.4/.7	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1			.9/.9	.7/.8	.3/.5	.2/.3	.1/.2	.0/.1		425	775	390	540
30,000	6,400	.4/.6	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1			.9/.9	.6/.8	.3/.5	.2/.3	.1/.2	.0/.1		400	750	405	549

Figure 3.2d(2).

LRC [1]

[1] Long-Range Cannon.

PROTECTED Personnel Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D (meters)		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES										
		Target radius (meters)								Target radius (meters)										
(meters)	(meters)	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	800	1,200	1,600	2,000	2,400	2,800	3,200		Prompt	Delayed	(meters)	(meters)
3,000	7,200	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		925	1,175	45	196
4,000	7,400	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		925	1,175	55	196
5,000	7,600	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		925	1,175	70	196
6,000	7,800	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		925	1,175	85	196
7,000	8,000	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		900	1,175	95	196
8,000	8,200	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		900	1,175	110	196
9,000	8,500	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		900	1,150	125	196
10,000	8,700	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		900	1,150	135	199
11,000	8,900	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1		900	1,150	150	208
12,000	8,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1		900	1,150	165	216
13,000	9,000	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		900	1,150	180	225
14,000	9,000	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	190	234
15,000	9,000	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	205	243
16,000	9,000	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	220	251
17,000	9,000	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,125	230	260
18,000	9,000	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,125	245	269
19,000	9,100	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		850	1,125	260	278
20,000	9,100	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		850	1,125	270	286
21,000	9,100	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		850	1,125	285	295
22,000	9,100	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		850	1,100	300	304
23,000	9,100	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		825	1,100	315	313
24,000	9,200	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		825	1,100	325	321
25,000	9,200	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		825	1,100	340	330
26,000	9,200	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		800	1,100	355	339
27,000	9,200	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		800	1,075	365	348
28,000	9,200	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		800	1,075	380	356
29,000	9,200	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		800	1,075	395	365
30,000	9,300	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		800	1,075	405	374

Figure 3.2e(1).

PROTECTED Personnel Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200
3,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
4,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
5,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
6,000	8,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
7,000	8,800	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
8,000	8,900	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
9,000	8,900	.7/.8	.5/.6	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1
10,000	8,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1
11,000	8,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1
12,000	8,900	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1
13,000	9,000	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
14,000	9,000	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1
15,000	9,000	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1
16,000	9,000	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1
17,000	9,000	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
18,000	9,000	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
19,000	9,100	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
20,000	9,100	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	
21,000	9,100	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	
22,000	9,100	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	
23,000	9,100	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	
24,000	9,100	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	
25,000	9,200	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	
26,000	9,200	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	
27,000	9,200	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	
28,000	9,200	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		
29,000	9,200	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		
30,000	9,200	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		

Range (meters)	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	825	1,100	45	442
4,000	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	825	1,100	55	442
5,000	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	825	1,100	70	442
6,000	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	800	1,100	85	442
7,000	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	800	1,075	95	449
8,000	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	800	1,075	110	457
9,000	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	775	1,075	125	466
10,000	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	775	1,075	135	475
11,000	.9/.9	.7/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	750	1,050	150	484
12,000	.9/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	750	1,050	165	492
13,000	.9/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	750	1,050	180	501
14,000	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	725	1,025	190	510
15,000	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2		725	1,025	205	519
16,000	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		700	1,025	220	527
17,000	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		700	1,000	230	536
18,000	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		675	1,000	245	545
19,000	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		675	1,000	260	554
20,000	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		650	975	270	562
21,000	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		650	975	285	571
22,000	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	975	300	580
23,000	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	950	315	589
24,000	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	950	325	597
25,000	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		600	950	340	606
26,000	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		600	925	355	615
27,000	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		575	925	365	624
28,000	.8/.9	.5/.6	.3/.4	.1/.3	.1/.2	.1/.1		575	900	380	632
29,000	.8/.9	.5/.6	.3/.4	.1/.3	.1/.2	.0/.1		550	900	395	641
30,000	.8/.9	.5/.6	.2/.4	.1/.3	.1/.2	.0/.1		525	875	405	650

Figure 3.2e(2).

LRC [1]

[1] Long-Range Cannon.

MATERIEL Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	350	400	450	500	550	600	650	700	(meters)	150	200	250	300	350	400	450	500	(meters)	(meters)	(meters)
3,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	350	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	200	45	67
4,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	350	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1	200	55	73
5,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	325	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	175	70	82
6,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	325	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	150	85	91
7,000	2,300	.7/.8	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	325	.5/.8	.3/.6	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1		125	95	100
8,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	300	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		100	110	108
9,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.4	.2/.3	.2/.3	.1/.2	300	.2/.6	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1			75	125	117
10,000	2,400	.5/.7	.4/.6	.3/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	275	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			50	135	126
11,000	2,400	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	275	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1				50	150	135
12,000	2,400	.5/.6	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	250	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				25	165	143
13,000	2,400	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	225	.0/.3	.0/.2	.0/.2	.0/.1					0	180	152
14,000	2,500	.3/.6	.2/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	150	.0/.3	.0/.2	.0/.2	.0/.1					0	190	161
15,000	2,500	.1/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	100	.0/.2	.0/.2	.0/.1						0	205	170
16,000	2,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	75	.0/.2	.0/.2	.0/.1						0	220	178
17,000	2,500	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		50	.0/.2	.0/.1							0	230	187
18,000	2,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		25	.0/.1								0	245	196
19,000	2,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.1								0	260	205
20,000	2,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.1								0	270	213
21,000	2,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.1								0	285	222
22,000	2,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.1								0	300	231
23,000	2,600	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1								0	315	240
24,000	2,600	.0/.2	.0/.2	.0/.1						0	.0/.1								0	325	248
25,000	2,700	.0/.2	.0/.2	.0/.1						0									0	340	257
26,000	2,700	.0/.2	.0/.1							0									0	355	266
27,000	2,700	.0/.2	.0/.1							0									0	365	275
28,000	2,700	.0/.1								0									0	380	283
29,000	2,700	.0/.1								0									0	395	292
30,000	2,700	.0/.1								0									0	405	301

Figure 3.3a(1).

MATERIEL Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	300	350	400	450	500	550	600	650	(meters)	100	150	200	250					(meters)	(meters)	(meters)
3,000	2,300	.7/.8	.6/.7	.5/.6	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	275	.3/.6	.1/.3	.0/.2	.0/.1					50	45	160
4,000	2,300	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	275	.1/.5	.0/.2	.0/.1						50	55	168
5,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	250	.0/.3	.0/.2	.0/.1						25	70	177
6,000	2,300	.6/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	225	.0/.2	.0/.1							0	85	186
7,000	2,300	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	150	.0/.2	.0/.1							0	95	195
8,000	2,400	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	100	.0/.1								0	110	203
9,000	2,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		75	.0/.1								0	125	212
10,000	2,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			50	.0/.1								0	135	221
11,000	2,400	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				25	.0/.1								0	150	230
12,000	2,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1								0	165	238
13,000	2,400	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1								0	180	247
14,000	2,500	.0/.2	.0/.2	.0/.1						0									0	190	256
15,000	2,500	.0/.2	.0/.1							0									0	205	265
16,000	2,500	.0/.1								0									0	220	273
17,000	2,500	.0/.1								0									0	230	282
18,000	2,500	.0/.1								0									0	245	291
19,000	2,500	.0/.1								0									0	260	300
20,000	2,600	.0/.1								0									0	270	308
21,000	2,600	.0/.1								0									0	285	317
22,000	2,600									0									0	300	326
23,000	2,600									0									0	315	335
24,000	2,600									0									0	325	343
25,000	2,600									0									0	340	352
26,000	2,700									0									0	355	361
27,000	2,700									0									0	365	370
28,000	2,700									0									0	380	378
29,000	2,700									0									0	395	387
30,000	2,700									0									0	405	396

Figure 3.3a(2).

LRC 1

[1] Long-Range Cannon.

MATERIEL Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 250	300	350	400	450	500	550	600	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	3,200	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	500	.8/.9	.7/.8	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	300	45	91
4,000	3,300	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	500	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	275	55	91
5,000	3,300	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	500	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	275	70	96
6,000	3,400	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	500	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	275	85	105
7,000	3,400	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	475	.7/.8	.6/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	250	95	114
8,000	3,400	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	475	.6/.8	.4/.7	.3/.5	.2/.4	.2/.4	.1/.3	.1/.3	.1/.2	200	110	122
9,000	3,400	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	450	.5/.7	.3/.6	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	175	125	131
10,000	3,400	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	.4/.7	.2/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	150	135	140
11,000	3,400	.8/.9	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	450	.3/.6	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.1	150	150	149
12,000	3,500	.8/.9	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	425	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	125	165	157
13,000	3,500	.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	425	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		100	180	166
14,000	3,500	.7/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			75	190	175
15,000	3,500	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			50	205	184
16,000	3,500	.6/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	375	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				25	220	192
17,000	3,500	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.2	350	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				25	230	201
18,000	3,600	.5/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	275	.0/.3	.0/.2	.0/.2	.0/.1					0	245	210
19,000	3,600	.2/.7	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	200	.0/.3	.0/.2	.0/.2	.0/.1					0	260	219
20,000	3,600	.1/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	175	.0/.3	.0/.2	.0/.2	.0/.1					0	270	227
21,000	3,600	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		125	.0/.2	.0/.2	.0/.1						0	285	236
22,000	3,600	.0/.6	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		100	.0/.2	.0/.2	.0/.1						0	300	245
23,000	3,600	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		75	.0/.2	.0/.2	.0/.1						0	315	254
24,000	3,700	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			50	.0/.2	.0/.1							0	325	262
25,000	3,700	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.1							0	340	271
26,000	3,700	.0/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.1							0	355	280
27,000	3,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	365	289
28,000	3,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	380	297
29,000	3,800	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	395	306
30,000	3,800	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	405	315

Figure 3.3b(1).

MATERIEL Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY								
		Target radius (meters)								Prob min R_D	Target radius (meters)							Prob min R_D	
(meters)	(meters)	200	300	400	500	600	700	800	900	(meters)	100	150	200	250	300	350		(meters)	(meters)	(meters)
3,000	3,300	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	425	.8/.9	.5/.7	.2/.4	.1/.3	.1/.2	.0/.1		100	45	207
4,000	3,300	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	425	.6/.8	.3/.6	.1/.4	.1/.2	.0/.2	.0/.1		100	55	215
5,000	3,300	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	400	.4/.7	.2/.5	.1/.3	.0/.2	.0/.1			75	70	224
6,000	3,300	.9/.9	.9/.9	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	400	.2/.6	.0/.3	.0/.2	.0/.1				50	85	233
7,000	3,400	.9/.9	.9/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	375	.0/.5	.0/.3	.0/.2	.0/.1				25	95	242
8,000	3,400	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	325	.0/.4	.0/.2	.0/.1					0	110	250
9,000	3,400	.9/.9	.7/.9	.4/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.2	250	.0/.3	.0/.2	.0/.1					0	125	259
10,000	3,400	.7/.9	.4/.8	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	200	.0/.3	.0/.1						0	135	268
11,000	3,400	.5/.9	.3/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	150	.0/.2	.0/.1						0	150	277
12,000	3,500	.3/.8	.2/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	125	.0/.2	.0/.1						0	165	285
13,000	3,500	.2/.7	.0/.6	.0/.5	.0/.3	.0/.3	.0/.2	.0/.1		100	.0/.2	.0/.1						0	180	294
14,000	3,500	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		50	.0/.1							0	190	303
15,000	3,500	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			25	.0/.1							0	205	312
16,000	3,500	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1							0	220	320
17,000	3,500	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1							0	230	329
18,000	3,600	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1							0	245	338
19,000	3,600	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1							0	260	347
20,000	3,600	.0/.3	.0/.3	.0/.2	.0/.1					0	.0/.1							0	270	355
21,000	3,600	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1							0	285	364
22,000	3,600	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1							0	300	373
23,000	3,600	.0/.2	.0/.2	.0/.1						0	.0/.1							0	315	382
24,000	3,700	.0/.2	.0/.2	.0/.1						0	.0/.1							0	325	390
25,000	3,700	.0/.2	.0/.1							0								0	340	399
26,000	3,700	.0/.2	.0/.1							0								0	355	408
27,000	3,700	.0/.1								0								0	365	417
28,000	3,700	.0/.1								0								0	380	425
29,000	3,700	.0/.1								0								0	395	434
30,000	3,800	.0/.1								0								0	405	443

Figure 3.3b(2)

LRC 1

[1]Long-Range Cannon.

MATERIEL Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	700	800	900	1,000	1,100	1,200	1,300	1,400	(meters)	200	300	400	500	600	700	800	900	(meters)	(meters)	(meters)
3,000	3,800	.7/.8	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	650	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	375	45	115
4,000	3,900	.7/.8	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	650	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	375	55	115
5,000	4,100	.7/.8	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	650	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	375	70	115
6,000	4,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	650	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	375	85	118
7,000	4,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	650	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	350	95	127
8,000	4,200	.7/.8	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	650	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	350	110	135
9,000	4,200	.7/.8	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	625	.9/.9	.8/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	300	125	144
10,000	4,200	.7/.8	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	625	.9/.9	.7/.9	.4/.7	.3/.5	.2/.3	.1/.3	.1/.2	.0/.1	275	135	153
11,000	4,300	.6/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	625	.8/.9	.6/.8	.3/.6	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1	250	150	162
12,000	4,300	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	600	.7/.9	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	225	165	170
13,000	4,300	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	600	.6/.9	.4/.7	.2/.6	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	200	180	179
14,000	4,300	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	575	.5/.8	.3/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1		175	190	188
15,000	4,300	.6/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	575	.4/.8	.2/.6	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1		150	205	197
16,000	4,400	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	.3/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		150	220	205
17,000	4,400	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	.2/.7	.1/.5	.0/.4	.0/.2	.0/.2	.0/.1			125	230	214
18,000	4,400	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	525	.2/.6	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1			100	245	223
19,000	4,400	.5/.6	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	525	.1/.6	.0/.4	.0/.2	.0/.2	.0/.1				75	260	232
20,000	4,400	.5/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	500	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				50	270	240
21,000	4,400	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	475	.0/.5	.0/.3	.0/.2	.0/.1					25	285	249
22,000	4,500	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	450	.0/.5	.0/.3	.0/.2	.0/.1					0	300	258
23,000	4,500	.2/.6	.1/.5	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.2	350	.0/.4	.0/.3	.0/.2	.0/.1					0	315	267
24,000	4,500	.1/.5	.1/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	275	.0/.4	.0/.3	.0/.2	.0/.1					0	325	275
25,000	4,500	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	225	.0/.4	.0/.2	.0/.1						0	340	284
26,000	4,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	200	.0/.3	.0/.2	.0/.1						0	355	293
27,000	4,500	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		175	.0/.3	.0/.2	.0/.1						0	365	302
28,000	4,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		125	.0/.3	.0/.2	.0/.1						0	380	310
29,000	4,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		100	.0/.3	.0/.2	.0/.2						0	395	319
30,000	4,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			75	.0/.3	.0/.2	.0/.1						0	405	328

Figure 3.3c(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	*Minimum safe distance (negligible risk, UnW Ex)*	*FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.*																	*Offset distance d_o*	*Height of burst*
		WHEELED VEHICLES									**TANKS AND ARTILLERY**									
		Target radius (meters)								*Prob min R_D*	*Target radius (meters)*								*Prob min R_D*	
(meters)	*(meters)*	600	700	800	900	1,000	1,100	1,200	1,300	*(meters)*	200	300	400	500					*(meters)*	*(meters)*	*(meters)*
3,000	4,100	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	575	.6/.8	.2/.4	.1/.2	.1/.1					175	45	259
4,000	4,100	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	550	.4/.7	.2/.3	.1/.2	.0/.1					150	55	262
5,000	4,200	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	.3/.6	.1/.3	.0/.2	.0/.1					125	70	271
6,000	4,200	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	525	.2/.5	.1/.2	.0/.1						100	85	280
7,000	4,200	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	525	.1/.4	.0/.2	.0/.1						75	95	289
8,000	4,200	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	500	.0/.3	.0/.2	.0/.1						50	110	297
9,000	4,200	.6/.7	.4/.6	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	475	.0/.3	.0/.1							25	125	306
10,000	4,200	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.1							0	135	315
11,000	4,300	.4/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2	350	.0/.2	.0/.1							0	150	324
12,000	4,300	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.1/.2	.0/.2	.0/.1	275	.0/.2	.0/.1							0	165	332
13,000	4,300	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		225	.0/.1								0	180	341
14,000	4,300	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		200	.0/.1								0	190	350
15,000	4,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			175	.0/.1								0	205	359
16,000	4,300	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			125	.0/.1								0	220	367
17,000	4,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				100	.0/.1								0	230	376
18,000	4,400	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				75	.0/.1								0	245	385
19,000	4,400	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				25	.0/.1								0	260	394
20,000	4,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1								0	270	402
21,000	4,400	.0/.2	.0/.2	.0/.1						0	.0/.1								0	285	411
22,000	4,400	.0/.2	.0/.2	.0/.1						0	.0/.1								0	300	420
23,000	4,500	.0/.2	.0/.2	.0/.1						0	.0/.1								0	315	429
24,000	4,500	.0/.2	.0/.1							0									0	325	437
25,000	4,500	.0/.2	.0/.1							0									0	340	446
26,000	4,500	.0/.2	.0/.1							0									0	355	455
27,000	4,500	.0/.1								0									0	365	464
28,000	4,500	.0/.1								0									0	380	472
29,000	4,600	.0/.1								0									0	395	481
30,000	4,600	.0/.1								0									0	405	490

Figure 3.3c(2).

LRC 1

[1]Long-Range Cannon.

MATERIEL Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	(meters)	400	500	600	700	800	900	1,000	1,100	(meters)	(meters)	(meters)
3,000	5,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	500	45	144
4,000	5,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.9/.9	.8/.8	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	500	55	144
5,000	5,500	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	500	70	144
6,000	5,700	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	500	85	144
7,000	5,900	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	500	95	144
8,000	6,000	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	475	110	152
9,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	475	125	161
10,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	450	135	170
11,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	850	.8/.9	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	425	150	179
12,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	825	.7/.9	.5/.7	.4/.6	.3/.4	.2/.4	.1/.3	.1/.2	.1/.2	375	165	187
13,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	825	.6/.9	.4/.7	.3/.6	.2/.4	.1/.3	.1/.3	.1/.2	.1/.2	350	180	196
14,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	800	.6/.8	.4/.7	.2/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	325	190	205
15,000	6,200	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	800	.5/.8	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	300	205	214
16,000	6,200	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	775	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	275	220	222
17,000	6,200	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	775	.4/.7	.2/.6	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	250	230	231
18,000	6,200	.9/.9	.7/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	775	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.2	.0/.1	225	245	240
19,000	6,200	.9/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	750	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		200	260	249
20,000	6,200	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	750	.2/.6	.1/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		175	270	257
21,000	6,300	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	725	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		175	285	266
22,000	6,300	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	700	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			150	300	275
23,000	6,300	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	700	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			125	315	284
24,000	6,300	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	675	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				100	325	292
25,000	6,300	.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	675	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				75	340	301
26,000	6,400	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	650	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				50	355	310
27,000	6,400	.7/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	625	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				25	365	319
28,000	6,400	.7/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	575	.0/.4	.0/.3	.0/.2	.0/.1					0	380	327
29,000	6,400	.5/.8	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	450	.0/.3	.0/.2	.0/.2	.0/.1					0	390	336
30,000	6,400	.4/.8	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	375	.0/.3	.0/.2	.0/.2	.0/.1					0	405	345

Figure 3.3d(1)

MATERIEL Targets
Long-Range Cannon

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 200	300	400	500	600	700			Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	5,900	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	750	.9/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			225	45	326
4,000	6,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	750	.8/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1			200	55	326
5,000	6,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	725	.7/.9	.3/.6	.2/.3	.1/.2	.0/.1				175	70	330
6,000	6,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	725	.6/.8	.2/.5	.1/.3	.1/.2	.0/.1				175	85	339
7,000	6,000	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	700	.4/.7	.2/.4	.1/.3	.0/.2	.0/.1				150	95	348
8,000	6,000	.9/.9	.9/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	700	.3/.6	.1/.4	.0/.2	.0/.1					125	110	356
9,000	6,000	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	675	.2/.6	.1/.3	.0/.2	.0/.1					100	125	365
10,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	675	.1/.5	.0/.3	.0/.2	.0/.1					75	135	374
11,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	650	.0/.4	.0/.2	.0/.1						50	150	383
12,000	6,100	.9/.9	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.2	625	.0/.4	.0/.2	.0/.1						25	165	391
13,000	6,100	.9/.9	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	550	.0/.3	.0/.2	.0/.1						0	180	400
14,000	6,100	.9/.9	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	450	.0/.3	.0/.2	.0/.1						0	190	409
15,000	6,200	.8/.9	.4/.8	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	375	.0/.2	.0/.1							0	205	419
16,000	6,200	.6/.9	.3/.7	.1/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	325	.0/.2	.0/.1							0	220	426
17,000	6,200	.5/.8	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.1		275	.0/.2	.0/.1							0	230	435
18,000	6,200	.4/.8	.2/.7	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		250	.0/.1								0	245	444
19,000	6,200	.3/.8	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		200	.0/.1								0	260	453
20,000	6,200	.2/.7	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			175	.0/.1								0	270	461
21,000	6,300	.1/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			150	.0/.1								0	285	470
22,000	6,300	.0/.6	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			100	.0/.1								0	300	479
23,000	6,300	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			75	.0/.1								0	315	488
24,000	6,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				50	.0/.1								0	325	496
25,000	6,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	.0/.1								0	340	505
26,000	6,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	.0/.1								0	355	514
27,000	6,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0									0	365	523
28,000	6,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0									0	380	531
29,000	6,400	.0/.4	.0/.3	.0/.2	.0/.1					0									0	390	540
30,000	6,400	.0/.4	.0/.3	.0/.2	.0/.1					0									0	405	549

Figure 3.3d(2).

[1]Long-Range Cannon.

LRC 1

MATERIEL Targets
Long-Range Cannon

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	1,400	1,600	1,800	2,000	2,200	2,400	2,600	2,800	(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	(meters)	(meters)	(meters)
3,000	7,200	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	750	45	196
4,000	7,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	725	55	196
5,000	7,600	.7/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	725	70	196
6,000	7,800	.7/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	725	85	196
7,000	8,000	.7/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	725	95	196
8,000	8,200	.7/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	725	110	196
9,000	8,500	.7/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	725	125	196
10,000	8,700	.7/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.9/.9	.6/.8	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	700	135	199
11,000	8,900	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	700	150	208
12,000	8,900	.6/.7	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	675	165	216
13,000	9,000	.6/.7	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	650	180	225
14,000	9,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,225	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	625	190	234
15,000	9,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,200	.9/.9	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.2	600	205	243
16,000	9,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,200	.9/.9	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	575	220	251
17,000	9,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,200	.9/.9	.7/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	525	230	260
18,000	9,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,175	.8/.9	.6/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	500	245	269
19,000	9,100	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,175	.8/.9	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	475	260	278
20,000	9,100	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,150	.8/.9	.5/.8	.3/.6	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	450	270	286
21,000	9,100	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,150	.7/.9	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	425	285	295
22,000	9,100	.6/.7	.4/.6	.3/.4	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,125	.7/.9	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1		400	300	304
23,000	9,100	.6/.7	.4/.6	.3/.4	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,125	.6/.9	.3/.7	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		375	315	313
24,000	9,200	.5/.7	.4/.6	.3/.4	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,100	.5/.8	.3/.7	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1		350	325	321
25,000	9,200	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.2/.2	.2/.2	.1/.2	1,100	.5/.8	.2/.6	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1		325	340	330
26,000	9,200	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	1,075	.4/.8	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		300	355	339
27,000	9,200	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	1,075	.4/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1			275	365	348
28,000	9,200	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	1,050	.3/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.1			250	380	356
29,000	9,200	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	1,050	.3/.7	.1/.5	.0/.4	.0/.2	.0/.2	.0/.1			225	395	365
30,000	9,300	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	1,025	.2/.7	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1			200	405	374

Figure 3.3e(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY								
		Target radius (meters)								Prob min R_D	Target radius (meters)							Prob min R_D	
(meters)	(meters)	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	(meters)	400	600	800	1,000	1,200			(meters)	(meters)	(meters)
3,000	8,800	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	1,125	.7/.8	.3/.4	.1/.2	.1/.2	.0/.1			350	45	442
4,000	8,800	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	1,100	.6/.8	.3/.4	.1/.2	.1/.1				325	55	442
5,000	8,800	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	1,100	.5/.7	.2/.4	.1/.2	.0/.1				300	70	442
6,000	8,800	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	1,075	.5/.7	.2/.3	.1/.2	.0/.1				275	85	442
7,000	8,800	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	1,050	.4/.6	.1/.3	.1/.2	.0/.1				275	95	449
8,000	8,900	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	1,050	.3/.6	.1/.3	.0/.2	.0/.1				250	110	457
9,000	8,900	.8/.9	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	1,025	.2/.5	.1/.3	.0/.1					225	125	466
10,000	8,900	.8/.9	.6/.7	.5/.6	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	1,025	.2/.5	.1/.2	.0/.1					200	135	475
11,000	8,900	.8/.9	.6/.7	.5/.6	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	1,000	.1/.4	.0/.2	.0/.1					175	150	484
12,000	8,900	.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	1,000	.1/.4	.0/.2	.0/.1					150	165	492
13,000	9,000	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	975	.0/.4	.0/.2	.0/.1					125	180	501
14,000	9,000	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	950	.0/.3	.0/.2	.0/.1					100	190	510
15,000	9,000	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	925	.0/.3	.0/.1						75	205	519
16,000	9,000	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	900	.0/.3	.0/.1						50	220	527
17,000	9,000	.7/.8	.5/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.2	875	.0/.2	.0/.1						25	230	536
18,000	9,000	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.2	775	.0/.2	.0/.1						0	245	545
19,000	9,100	.4/.7	.2/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	650	.0/.2	.0/.1						0	260	554
20,000	9,100	.3/.7	.2/.6	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	575	.0/.2	.0/.1						0	270	562
21,000	9,100	.2/.7	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	500	.0/.2	.0/.1						0	285	571
22,000	9,100	.2/.7	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	450	.0/.1							0	300	580
23,000	9,100	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	425	.0/.1							0	315	589
24,000	9,100	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		375	.0/.1							0	325	597
25,000	9,200	.1/.6	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		350	.0/.1							0	340	606
26,000	9,200	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		300	.0/.1							0	355	615
27,000	9,200	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		250	.0/.1							0	365	624
28,000	9,200	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			225	.0/.1							0	380	632
29,000	9,200	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			200	.0/.1							0	395	641
30,000	9,200	.0/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			150	.0/.1							0	405	650

Figure 3.3e(2).

LRC 1

[1]Long-Range Cannon.

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	2,300	1,700	1,400	1,900	1,600	1,400	1,500	1,300	1,100
4,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
5,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
6,000	2,300	1,700	1,500	1,900	1,600	1,500	1,600	1,400	1,100
7,000	2,300	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
8,000	2,400	1,800	1,500	1,900	1,700	1,500	1,600	1,400	1,100
9,000	2,400	1,800	1,500	2,000	1,700	1,500	1,600	1,400	1,200
10,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
11,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
12,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
13,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
14,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,200
15,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,300
16,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
17,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,600	1,300
18,000	2,500	1,900	1,700	2,100	1,900	1,700	1,800	1,600	1,300
19,000	2,500	2,000	1,700	2,100	1,900	1,700	1,800	1,600	1,300
20,000	2,600	2,000	1,700	2,200	1,900	1,700	1,800	1,600	1,400
21,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
22,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
23,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,700	1,400
24,000	2,600	2,000	1,800	2,200	2,000	1,800	1,900	1,700	1,400
25,000	2,700	2,100	1,800	2,200	2,000	1,800	1,900	1,700	1,400
26,000	2,700	2,100	1,800	2,300	2,000	1,800	1,900	1,700	1,500
27,000	2,700	2,100	1,800	2,300	2,000	1,800	2,000	1,700	1,500
28,000	2,700	2,100	1,800	2,300	2,000	1,800	2,000	1,700	1,500
29,000	2,700	2,100	1,800	2,300	2,000	1,800	2,000	1,800	1,500
30,000	2,700	2,100	1,900	2,300	2,100	1,900	2,000	1,800	1,500

Figure 3.4a(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	2,300	1,700	1,400	1,900	1,600	1,400	1,500	1,300	1,100
4,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
5,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
6,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,400	1,100
7,000	2,300	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
8,000	2,400	1,800	1,500	1,900	1,700	1,500	1,600	1,400	1,100
9,000	2,400	1,800	1,500	2,000	1,700	1,500	1,600	1,400	1,200
10,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
11,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
12,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,500	1,200
13,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
14,000	2,500	1,900	1,600	2,000	1,800	1,600	1,700	1,500	1,200
15,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,300
16,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
17,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
18,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,600	1,300
19,000	2,500	1,900	1,700	2,100	1,900	1,700	1,800	1,600	1,300
20,000	2,600	2,000	1,700	2,100	1,900	1,700	1,800	1,600	1,300
21,000	2,600	2,000	1,700	2,200	1,900	1,700	1,800	1,600	1,400
22,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
23,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
24,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,700	1,400
25,000	2,600	2,000	1,800	2,200	2,000	1,800	1,900	1,700	1,400
26,000	2,700	2,100	1,800	2,200	2,000	1,800	1,900	1,700	1,400
27,000	2,700	2,100	1,800	2,300	2,000	1,800	1,900	1,700	1,500
28,000	2,700	2,100	1,800	2,300	2,000	1,800	2,000	1,700	1,500
29,000	2,700	2,100	1,800	2,300	2,000	1,800	2,000	1,700	1,500
30,000	2,700	2,100	1,800	2,300	2,000	1,800	2,000	1,800	1,500

Figure 3.4a(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 3.5 for special friendly troop orientations.

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	3,200	2,400	2,000	2,100	1,800	1,500	1,700	1,400	1,200
4,000	3,300	2,500	2,100	2,100	1,800	1,500	1,700	1,500	1,200
5,000	3,300	2,500	2,100	2,200	1,800	1,500	1,800	1,500	1,200
6,000	3,400	2,500	2,100	2,200	1,900	1,500	1,800	1,500	1,300
7,000	3,400	2,500	2,220	2,200	1,900	1,500	1,800	1,500	1,300
8,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
9,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
10,000	3,400	2,600	2,200	2,300	1,900	1,600	1,800	1,600	1,300
11,000	3,400	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
12,000	3,500	2,600	2,200	2,300	2,000	1,600	1,900	1,600	1,400
13,000	3,500	2,700	2,300	2,300	2,000	1,600	1,900	1,600	1,400
14,000	3,500	2,700	2,300	2,300	2,000	1,700	1,900	1,700	1,400
15,000	3,500	2,700	2,300	2,300	2,000	1,700	1,900	1,700	1,400
16,000	3,500	2,700	2,300	2,400	2,000	1,700	1,900	1,700	1,400
17,000	3,500	2,700	2,300	2,400	2,000	1,700	2,000	1,700	1,400
18,000	3,600	2,800	2,400	2,400	2,100	1,700	2,000	1,700	1,500
19,000	3,600	2,800	2,400	2,400	2,100	1,700	2,000	1,700	1,500
20,000	3,600	2,800	2,400	2,400	2,100	1,800	2,000	1,800	1,500
21,000	3,600	2,800	2,400	2,400	2,100	1,800	2,000	1,800	1,500
22,000	3,600	2,800	2,400	2,500	2,100	1,800	2,000	1,800	1,500
23,000	3,600	2,800	2,400	2,500	2,100	1,800	2,100	1,800	1,500
24,000	3,700	2,800	2,500	2,500	2,200	1,800	2,100	1,800	1,600
25,000	3,700	2,900	2,500	2,500	2,200	1,800	2,100	1,800	1,600
26,000	3,700	2,900	2,500	2,500	2,200	1,900	2,100	1,900	1,600
27,000	3,700	2,900	2,500	2,500	2,200	1,900	2,100	1,900	1,600
28,000	3,700	2,900	2,500	2,600	2,200	1,900	2,200	1,900	1,600
29,000	3,800	2,900	2,500	2,600	2,200	1,900	2,200	1,900	1,600
30,000	3,800	2,900	2,500	2,600	2,200	1,900	2,200	1.900	1,600

Figure 3.4b(1).

HIGH Airburst

Range	Minimum Distanee Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	3,300	2,500	2,100	2,100	1,800	1,500	1,700	1,500	1,200
4,000	3,300	2,500	2,100	2,100	1,800	1,500	1,700	1,500	1,200
5,000	3,300	2,500	2,100	2,200	1,800	1,500	1,700	1,500	1,200
6,000	3,300	2,500	2,100	2,200	1,800	1,500	1,800	1,500	1,200
7,000	3,400	2,500	2,200	2,200	1,900	1,500	1,800	1,500	1,300
8,000	3,400	2,600	2,200	2,200	1,900	1,500	1,800	1,500	1,300
9,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
10,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
11,000	3,400	2,600	2,200	2,300	1,900	1,600	1,800	1,600	1,300
12,000	3,500	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
13,000	3,500	2,600	2,300	2,300	2,000	1,600	1,900	1,600	1,400
14,000	3,500	2,700	2,300	2,300	2,000	1,600	1,900	1,600	1,400
15,000	3,500	2,700	2,300	2,300	2,000	1,700	1,900	1,700	1,400
16,000	3,500	2,700	2,300	2,300	2,000	1,700	1,900	1,700	1,400
17,000	3,500	2,700	2,300	2,400	2,000	1,700	1,900	1,700	1,400
18,000	3,600	2,700	2,300	2,400	2,000	1,700	2,000	1,700	1,400
19,000	3,600	2,700	2,400	2,400	2,100	1,700	2,000	1,700	1,500
20,000	3,600	2,800	2,400	2,400	2,100	1,700	2,000	1,700	1,500
21,000	3,600	2,800	2,400	2,400	2,100	1,800	2,100	1,800	1,500
22,000	3,600	2,800	2,400	2,400	2,100	1,800	2,100	1,800	1,500
23,000	3,600	2,800	2,400	2,500	2,100	1,800	2,100	1,800	1,500
24,000	3,700	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
25,000	3,700	2,900	2,500	2,500	2,200	1,800	2,200	1,800	1,600
26,000	3,700	2,900	2,500	2,500	2,200	1,800	2,200	1,800	1,600
27,000	3,700	2,900	2,500	2,500	2,200	1,900	2,300	1,900	1,600
28,000	3,700	2,900	2,500	2,500	2,200	1,900	2,300	1,900	1,600
29,000	3,700	2,900	2,500	2,600	2,200	1,900	2,300	1,900	1,600
30,000	3,800	2,900	2,500	2,600	2,200	1,900	2,300	1,900	1,600

Figure 3.4b(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 3.5 for special friendly troop orientations.

LRC 1

[1]Long-Range Cannon.

Troop Safety Distances—Meters
Long-Range Cannon

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	3,800	3,000	2,700	2,600	1,900	1,600	1,900	1,600	1,300
4,000	3,900	3,100	2,900	2,700	1,900	1,600	1,900	1,600	1,300
5,000	4,100	3,300	3,000	2,800	2,000	1,700	1,900	1,600	1,300
6,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
7,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
8,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
9,000	4,200	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
10,000	4,200	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
11,000	4,300	3,400	3,200	2,900	2,100	1,800	2,000	1,700	1,400
12,000	4,300	3,500	3,200	2,900	2,100	1,800	2,000	1,800	1,500
13,000	4,300	3,500	3,200	2,900	2,100	1,800	2,000	1,800	1,500
14,000	4,300	3,500	3,200	2,900	2,100	1,800	2,000	1,800	1,500
15,000	4,300	3,500	3,300	3,000	2,100	1,800	2,100	1,800	1,500
16,000	4,400	3,500	3,300	3,000	2,100	1,800	2,100	1,800	1,500
17,000	4,400	3,500	3,300	3,000	2,200	1,900	2,100	1,800	1,500
18,000	4,400	3,600	3,300	3,000	2,200	1,900	2,100	1,900	1,600
19,000	4,400	3,600	3,300	3,000	2,200	1,900	2,100	1,900	1,600
20,000	4,400	3,600	3,300	3,000	2,200	1,900	2,100	1,900	1,600
21,000	4,400	3,600	3,400	3,100	2,200	1,900	2,100	1,900	1,600
22,000	4,500	3,600	3,400	3,100	2,200	1,900	2,200	1,900	1,600
23,000	4,500	3,600	3,400	3,100	2,300	2,000	2,200	1,900	1,600
24,000	4,500	3,700	3,400	3,100	2,300	2,000	2,200	2,000	1,700
25,000	4,500	3,700	3,400	3,100	2,300	2,000	2,200	2,000	1,700
26,000	4,500	3,700	3,400	3,100	2,300	2,000	2,200	2,000	1,700
27,000	4,500	3,700	3,500	3,200	2,300	2,000	2,200	2,000	1,700
28,000	4,600	3,700	3,500	3,200	2,400	2,000	2,200	2,000	1,700
29,000	4,600	3,800	3,500	3,200	2,400	2,100	2,200	2,000	1,700
30,000	4,600	3,800	3,500	3,200	2,400	2,100	2,300	2,000	1,800

Figure 3.4c(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	4,100	3,300	3,000	2,700	1,900	1,600	1,800	1,600	1,300
4,000	4,100	3,300	3,100	2,800	1,900	1,600	1,900	1,600	1,300
5,000	4,200	3,300	3,100	2,800	1,900	1,600	1,900	1,600	1,300
6,000	4,200	3,300	3,100	2,800	2,000	1,700	1,900	1,600	1,300
7,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,300
8,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
9,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
10,000	4,200	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
11,000	4,300	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
12,000	4,300	3,400	3,200	2,900	2,100	1,800	2,100	1,700	1,400
13,000	4,300	3,500	3,200	2,900	2,100	1,800	2,100	1,700	1,400
14,000	4,300	3,500	3,200	2,900	2,100	1,800	2,100	1,700	1,500
15,000	4,300	3,500	3,200	2,900	2,100	1,800	2,200	1,800	1,500
16,000	4,300	3,500	3,300	3,000	2,100	1,800	2,200	1,800	1,500
17,000	4,400	3,500	3,300	3,000	2,100	1,800	2,200	1,800	1,500
18,000	4,400	3,600	3,300	3,000	2,200	1,900	2,300	1,800	1,500
19,000	4,400	3,600	3,300	3,000	2,200	1,900	2,300	1,800	1,500
20,000	4,400	3,600	3,300	3,000	2,200	1,900	2,400	1,800	1,600
21,000	4,400	3,600	3,400	3,000	2,200	1,900	2,400	1,800	1,600
22,000	4,400	3,600	3,400	3,100	2,200	1,900	2,400	1,800	1,600
23,000	4,500	3,600	3,400	3,100	2,200	1,900	2,500	1,900	1,600
24,000	4,500	3,700	3,400	3,100	2,300	2,000	2,500	1,900	1,600
25,000	4,500	3,700	3,400	3,100	2,300	2,000	2,500	1,900	1,600
26,000	4,500	3,700	3,400	3,100	2,300	2,000	2,600	1,900	1,700
27,000	4,500	3,700	3,500	3,200	2,300	2,000	2,600	2,000	1,700
28,000	4,500	3,700	3,500	3,200	2,300	2,000	2,700	2,000	1,700
29,000	4,600	3,700	3,500	3,200	2,300	2,000	2,700	2,000	1,700
30,000	4,600	3,800	3,500	3,200	2,400	2,100	2,700	2,000	1,700

Figure 3.4c(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 3.5 for special friendly troop orientations.

Troop Safety Distances—Meters
Long-Range Cannon

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	5,100	3,600	3,100	3,200	2,300	1,900	2,000	1,700	1,400
4,000	5,300	3,800	3,300	3,400	2,300	1,900	2,000	1,700	1,400
5,000	5,500	3,900	3,400	3,500	2,400	1,900	2,000	1,700	1,500
6,000	5,700	4,000	3,500	3,600	2,400	2,000	2,000	1,800	1,500
7,000	5,900	4,200	3,600	3,700	2,500	2,000	2,000	1,800	1,500
8,000	6,000	4,200	3,700	3,700	2,500	2,000	2,100	1,800	1,500
9,000	6,100	4,200	3,700	3,800	2,500	2,000	2,100	1,800	1,500
10,000	6,100	4,200	3,700	3,800	2,500	2,000	2,100	1,800	1,500
11,000	6,100	4,300	3,700	3,800	2,500	2,100	2,100	1,800	1,600
12,000	6,100	4,300	3,700	3,800	2,500	2,100	2,200	1,900	1,600
13,000	6,100	4,300	3,800	3,800	2,600	2,100	2,200	1,900	1,600
14,000	6,100	4,300	3,800	3,900	2,600	2,100	2,200	1,900	1,600
15,000	6,200	4,300	3,800	3,900	2,600	2,100	2,300	1,900	1,600
16,000	6,200	4,300	3,800	3,900	2,600	2,100	2,300	1,900	1,700
17,000	6,200	4,400	3,800	3,900	2,600	2,200	2,300	2,000	1,700
18,000	6,200	4,400	3,900	3,900	2,600	2,200	2,400	2,000	1,700
19,000	6,200	4,400	3,900	3,900	2,700	2,200	2,400	2,000	1,700
20,000	6,200	4,400	3,900	4,000	2,700	2,200	2,500	2,000	1,700
21,000	6,300	4,400	3,900	4,000	2,700	2,200	2,500	2,000	1,700
22,000	6,300	4,500	3,900	4,000	2,700	2,300	2,500	2,000	1,800
23,000	6,300	4,500	3,900	4,000	2,700	2,300	2,600	2,100	1,800
24,000	6,300	4,500	4,000	4,000	2,800	2,300	2,600	2,100	1,800
25,000	6,300	4,500	4,000	4,000	2,800	2,300	2,600	2,100	1,800
26,000	6,400	4,500	4,000	4,100	2,800	2,300	2,700	2,100	1,800
27,000	6,400	4,500	4,000	4,100	2,800	2,300	2,700	2,100	1,800
28,000	6,400	4,600	4,000	4,100	2,800	2,400	2,700	2,100	1,900
29,000	6,400	4,600	4,000	4,100	2,800	2,400	2,800	2,100	1,900
30,000	6,400	4,600	4,100	4,100	2,900	2,400	2,800	2,200	1,900

Figure 3.4d(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	5,900	4,100	3,600	3,700	2,400	1,900	2,100	1,700	1,400
4,000	6,000	4,100	3,600	3,700	2,400	1,900	2,200	1,700	1,400
5,000	6,000	4,100	3,600	3,700	2,400	1,900	2,200	1,700	1,400
6,000	6,000	4,200	3,600	3,700	2,400	2,000	2,200	1,700	1,400
7,000	6,000	4,200	3,700	3,700	2,400	2,000	2,300	1,800	1,500
8,000	6,000	4,200	3,700	3,700	2,500	2,000	2,300	1,800	1,500
9,000	6,000	4,200	3,700	3,800	2,500	2,000	2,300	1,800	1,500
10,000	6,100	4,200	3,700	3,800	2,500	2,000	2,400	1,800	1,500
11,000	6,100	4,300	3,700	3,800	2,500	2,000	2,400	1,800	1,500
12,000	6,100	4,300	3,700	3,800	2,500	2,100	2,500	1,800	1,500
13,000	6,100	4,300	3,800	3,800	2,500	2,100	2,500	1,800	1,600
14,000	6,100	4,300	3,800	3,800	2,600	2,100	2,500	1,900	1,600
15,000	6,200	4,300	3,800	3,900	2,600	2,100	2,600	1,900	1,600
16,000	6,200	4,300	3,800	3,900	2,600	2,100	2,600	1,900	1,600
17,000	6,200	4,400	3,800	3,900	2,600	2,100	2,600	2,000	1,600
18,000	6,200	4,400	3,800	3,900	2,600	2,200	2,700	2,000	1,600
19,000	6,200	4,400	3,900	3,900	2,600	2,200	2,700	2,000	1,700
20,000	6,200	4,400	3,900	3,900	2,700	2,200	2,800	2,100	1,700
21,000	6,300	4,400	3,900	4,000	2,700	2,200	2,800	2,100	1,700
22,000	6,300	4,400	3,900	4,000	2,700	2,200	2,900	2,100	1,700
23,000	6,300	4,500	3,900	4,000	2,700	2,200	2,900	2,100	1,700
24,000	6,300	4,500	3,900	4,000	2,700	2,300	2,900	2,200	1,700
25,000	6,300	4,500	4,000	4,000	2,700	2,300	3,000	2,200	1,800
26,000	6,300	4,500	4,000	4,000	2,800	2,300	3,000	2,200	1,800
27,000	6,400	4,500	4,000	4,100	2,800	2,300	3,000	2,300	1,800
28,000	6,400	4,500	4,000	4,100	2,800	2,300	3,100	2,300	1,800
29,000	6,400	4,600	4,000	4,100	2,800	2,300	3,100	2,300	1,800
30,000	6,400	4,600	4,000	4,100	2,800	2,400	3,100	2,400	1,800

Figure 3.4d(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 3.5 for special friendly troop orientations.

LRC 1

[1]Long-Range Cannon.

Troop Safety Distances—Meters
Long-Range Cannon

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	7,200	5,500	4,800	4,500	3,000	2,500	2,500	1,900	1,600
4,000	7,400	5,700	4,900	4,700	3,100	2,500	2,600	1,900	1,600
5,000	7,600	5,800	5,100	4,800	3,200	2,600	2,600	1,900	1,600
6,000	7,800	6,000	5,200	4,900	3,200	2,600	2,600	2,000	1,700
7,000	8,000	6,100	5,400	5,100	3,300	2,700	2,600	2,000	1,700
8,000	8,200	6,300	5,500	5,200	3,400	2,800	2,700	2,000	1,700
9,000	8,500	6,500	5,700	5,300	3,500	2,800	2,700	2,000	1,700
10,000	8,700	6,600	5,800	5,500	3,500	2,900	2,700	2,100	1,700
11,000	8,900	6,800	6,000	5,600	3,600	2,900	2,800	2,100	1,700
12,000	8,900	6,800	6,000	5,600	3,600	2,900	2,800	2,100	1,800
13,000	9,000	6,900	6,000	5,700	3,700	3,000	2,800	2,100	1,800
14,000	9,000	6,900	6,000	5,700	3,700	3,000	2,900	2,200	1,800
15,000	9,000	6,900	6,100	5,700	3,700	3,000	2,900	2,200	1,800
16,000	9,000	6,900	6,100	5,700	3,700	3,000	2,900	2,200	1,800
17,000	9,000	6,900	6,100	5,700	3,700	3,000	3,000	2,300	1,800
18,000	9,000	6,900	6,100	5,800	3,700	3,100	3,000	2,300	1,900
19,000	9,100	7,000	6,100	5,800	3,800	3,100	3,000	2,300	1,900
20,000	9,100	7,000	6,200	5,800	3,800	3,100	3,100	2,300	1,900
21,000	9,100	7,000	6,200	5,800	3,800	3,100	3,100	2,400	1,900
22,000	9,100	7,000	6,200	5,800	3,800	3,100	3,100	2,400	1,900
23,000	9,100	7,000	6,200	5,800	3,800	3,100	3,200	2,400	1,900
24,000	9,200	7,000	6,200	5,900	3,800	3,200	3,200	2,400	2,000
25,000	9,200	7,100	6,200	5,900	3,900	3,200	3,200	2,500	2,000
26,000	9,200	7,100	6,300	5,900	3,900	3,200	3,300	2,500	2,000
27,000	9,200	7,100	6,300	5,900	3,900	3,200	3,300	2,500	2,000
28,000	9,200	7,100	6,300	5,900	3,900	3,200	3,300	2,500	2,000
29,000	9,200	7,100	6,300	5,900	3,900	3,200	3,400	2,600	2,000
30,000	9,300	7,200	6,300	6,000	3,900	3,300	3,400	2,600	2,100

Figure 3.4e(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	8,800	6,700	5,800	5,500	3,500	2,800	2,800	2,100	1,600
4,000	8,800	6,700	5,900	5,500	3,500	2,800	2,900	2,100	1,600
5,000	8,800	6,700	5,900	5,500	3,500	2,800	2,900	2,100	1,600
6,000	8,800	6,700	5,900	5,500	3,500	2,800	2,900	2,100	1,600
7,000	8,800	6,700	5,900	5,600	3,500	2,800	3,000	2,200	1,600
8,000	8,900	6,800	5,900	5,600	3,500	2,900	3,000	2,200	1,600
9,000	8,900	6,800	6,000	5,600	3,600	2,900	3,000	2,200	1,700
10,000	8,900	6,800	6,000	5,600	3,600	2,900	3,100	2,300	1,700
11,000	8,900	6,800	6,000	5,600	3,600	2,900	3,100	2,300	1,700
12,000	8,900	6,800	6,000	5,600	3,600	2,900	3,200	2,300	1,700
13,000	9,000	6,800	6,000	5,700	3,600	2,900	3,200	2,300	1,700
14,000	9,000	6,900	6,000	5,700	3,600	3,000	3,200	2,400	1,700
15,000	9,000	6,900	6,100	5,700	3,700	3,000	3,300	2,400	1,800
16,000	9,000	6,900	6,100	5,700	3,700	3,000	3,300	2,400	1,800
17,000	9,000	6,900	6,100	5,700	3,700	3,000	3,300	2,500	1,800
18,000	9,000	6,900	6,100	5,700	3,700	3,000	3,400	2,500	1,800
19,000	9,100	7,000	6,100	5,800	3,700	3,000	3,400	2,500	1,800
20,000	9,100	7,000	6,100	5,800	3,800	3,100	3,500	2,500	1,800
21,000	9,100	7,000	6,200	5,800	3,800	3,100	3,500	2,600	1,800
22,000	9,100	7,000	6,200	5,800	3,800	3,100	3,500	2,600	1,800
23,000	9,100	7,000	6,200	5,800	3,800	3,100	3,600	2,600	1,800
24,000	9,100	7,000	6,200	5,800	3,800	3,100	3,600	2,700	1,900
25,000	9,200	7,100	6,200	5,900	3,800	3,100	3,600	2,700	1,900
26,000	9,200	7,100	6,200	5,900	3,900	3,200	3,600	2,700	1,900
27,000	9,200	7,100	6,300	5,900	3,900	3,200	3,600	2,800	2,000
28,000	9,200	7,100	6,300	5,900	3,900	3,200	3,600	2,800	2,000
29,000	9,200	7,100	6,300	5,900	3,900	3,200	3,600	2,800	2,000
30,000	9,200	7,100	6,300	5,900	3,900	3,200	3,800	2,900	2,000

Figure 3.4e(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 3.5 for special friendly troop orientations.

The troop safety distances in figures 3.4*a*(1) through 3.4*e*(2) are based on the friendly troop orientation shown in figure 1, below. The elliptical delivery pattern of the long-range cannon may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ – Desired ground zero.
R_S – Safety radius
d_b – Buffer distance.
~~~ – Friendly troops.
⟶ – Direction of fire.

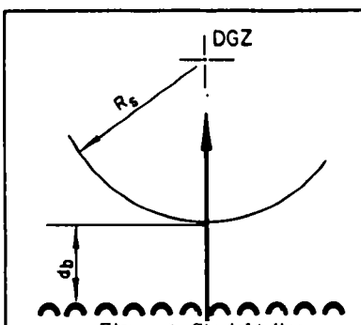

Figure 1. Straight line, perpendicular delivery.

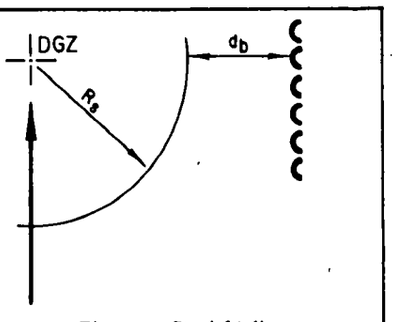

Figure 2. Straight line, parallel delivery.

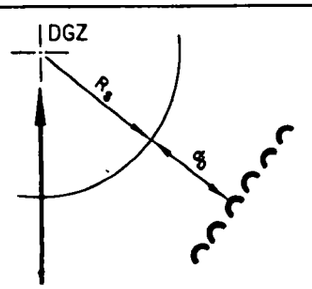

Figure 3. Straight-line, 45° delivery.

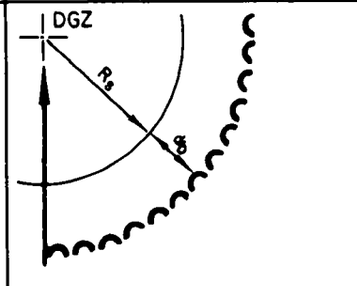

Figure 4. Quarter circle.

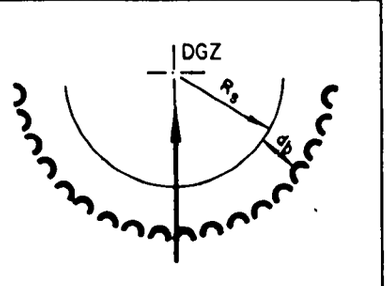

Figure 5. Half circle.

When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figures 3.4*a*(1) through 3.4*e*(2) must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

All Height of Burst Options—All Yields									
Range (meters)	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*	*Range (meters)*	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*
3,000	0	0	+100	+100	20,000	–100	0	+100	+100
4,000	0	0	+100	+100	21,000	–100	0	+100	+100
5,000	0	0	+100	+100	22,000	–100	0	+100	+100
6,000	0	0	+100	+100	23,000	–200	0	+100	+100
7,000	0	0	+100	+100	24,000	–200	0	+100	+100
8,000	0	0	+100	+100	25,000	–200	–100	+100	+100
9,000	0	0	+100	+100	26,000	–200	–100	+100	+100
10,000	0	0	+100	+100	27,000	–200	–100	+100	+100
11,000	0	0	+100	+100	28,000	–200	–100	+100	+100
12,000	–100	0	+100	+100	29,000	–200	–100	+100	+100
13,000	–100	0	+100	+100	30,000	–200	–100	+100	+100
14,000	–100	0	+100	+100					
15,000	–100	0	+100	+100					
16,000	–100	0	+100	+100					
17,000	–100	0	+100	+100					
18,000	–100	0	+100	+100					
19,000	–100	0	+100	+100					

Figure 3.5.

[1]Long-Range Cannon.
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CASUALTY and DAMAGE Tables
Long-Range Cannon
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
900		0											1,975	1,300	950	1,525	1,200	950	1,125	800	325
875		175										0	1,975	1,300	950	1,525	1,200	950	1,150	825	400
850		275				0						175	2,000	1,325	975	1,550	1,225	975	1,150	850	450
825		350				175				0		275	2,000	1,350	1,000	1,550	1,250	1,000	1,175	875	500
800		400				250				100		350	2,025	1,350	1,025	1,575	1,275	1,025	1,200	900	525
775		450				325				225		400	2,025	1,375	1,050	1,575	1,275	1,050	1,225	925	575
750		475				375				300		450	2,025	1,400	1,075	1,600	1,300	1,075	1,225	950	600
725		525				425				350		475	2,050	1,400	1,075	1,600	1,300	1,075	1,250	975	625
700		550		0		475				400		525	2,050	1,400	1,100	1,625	1,325	1,100	1,250	1,000	650
675		575		125		500				450	0	550	2,050	1,425	1,100	1,625	1,325	1,100	1,275	1,000	675
650		600		225		525				475	300	575	2,075	1,425	1,125	1,650	1,350	1,125	1,275	1,025	700
625	0	625		275	0	550				500	375	600	2,075	1,450	1,150	1,650	1,350	1,150	1,300	1,050	725
600	150	650		325	150	600			0	525	450	625	2,075	1,450	1,150	1,650	1,375	1,150	1,300	1,050	750
575	250	675		375	225	625			150	550	525	650	2,100	1,475	1,175	1,675	1,375	1,175	1,325	1,075	775
550	300	700		400	275	625		0	225	575	600	675	2,100	1,475	1,175	1,675	1,400	1,175	1,325	1,075	800
525	325	725		450	325	650		100	275	600	750	750	2,100	1,500	1,200	1,675	1,400	1,200	1,350	1,100	800
500	375	725		475	375	675		200	325	625	900	900	2,100	1,500	1,200	1,700	1,400	1,200	1,350	1,100	825
475	400	750	0	500	400	700		250	350	650	1,075	1,075	2,125	1,500	1,200	1,700	1,425	1,200	1,350	1,125	825
450	425	775	125	525	425	700		275	400	675	1,175	1,175	2,125	1,500	1,225	1,700	1,425	1,225	1,375	1,125	850
425	450	775	200	550	450	725		325	425	675	1,175	1,175	2,125	1,525	1,225	1,700	1,425	1,225	1,375	1,125	850
400	475	800	250	550	475	750		350	450	700	1,200	1,200	2,125	1,525	1,250	1,725	1,450	1,250	1,375	1,150	875
375	500	800	275	575	500	750	0	375	625	700	1,200	1,200	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	875
350	525	825	300	600	500	775	100	400	675	725	1,175	1,175	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	900
325	525	825	325	600	525	775	175	425	675	725	1,175	1,175	2,150	1,550	1,250	1,725	1,450	1,250	1,400	1,175	900
300	550	825	350	625	550	775	200	450	675	750	1,125	1,125	2,150	1,550	1,275	1,725	1,475	1,275	1,400	1,175	900
275	550	850	375	625	550	800	250	450	675	750	1,100	1,100	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
250	575	850	400	625	575	800	275	475	650	750	1,050	1,050	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
225	575	850	400	650	575	800	300	475	650	775	1,025	1,025	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	925
200	575	875	425	650	600	825	300	500	625	775	975	975	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	950
175	600	875	425	675	600	825	325	500	600	775	950	950	2,175	1,575	1,300	1,750	1,475	1,300	1,425	1,200	950
150	600	875	450	675	600	825	325	525	575	800	925	925	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
125	600	875	450	675	600	825	350	525	575	800	900	900	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
100	600	875	450	675	625	825	350	525	575	800	850	850	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
75	625	875	450	675	625	850	350	525	600	800	825	875	2,175	1,575	1,300	1,750	1,500	1,300	1,450	1,200	950
50	625	900	450	675	625	850	350	525	600	800	800	875	2,025	1,550	1,300	1,750	1,500	1,300	1,450	1,200	950
25	625	900	475	675	625	850	375	525	600	800	775	875	1,900	1,525	1,300	1,750	1,500	1,300	1,450	1,200	950
0	625	900	475	675	625	850	375	525	600	800	775	875	1,750	1,500	1,300	1,750	1,500	1,300	1,450	1,200	950

HOB_{fs} = 38 m

Low HOB_{min} = 67 m

High HOB_{min} = 152 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 3.6a.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehicles	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
900							550			2,075			0–5				0–500	
875							575			2,100			0–10				0–600	
850							625			2,100			0–10				0–650	
825							650			2,100			0–10				0–700	
800							675			2,100			0–10				0–700	
775							700			2,125			0–15				0–750	
750							725			2,125			0–15				0–750	
725							750			2,125		0	0–20			0	0–800	
700							775			2,125		0–5	0–20			0–50	0–800	
675							800			2,150		0–5	0–25			0–200	0–850	
650							825			2,150		0–5	0–35			0–300	0–850	
625							850			2,150		0–5	0–40			0–350	0–850	
600							850			2,150		0–5	0–50			0–400	50–900	
575							875			2,150		0–5	0–60			0–400	200–900	
550							900			2,150		0–10	5–75			0–450	250–900	
525							900			2,125	0	0–10	5–100		0	0–450	300–950	
500							925			2,125	0–5	0–10	5–120		0–50	0–500	350–950	
475							925	0		2,125	0–5	0–15	10–180		0–150	0–550	400–950	
450							950	150		2,100	0–5	0–20	10–230		0–250	0–550	400–1,000	
425							950	200		2,100	0–5	0–25	15–300		0–300	0–600	450–1,000	
400							975	250		2,075	0–5	0–35	20–400		0–300	0–600	450–1,000	
375				0			975	300		2,075	0–5	0–50	20–520		0–350	0–600	500–1,000	
350				25			1,000	325		2,050	0–10	5–60	25–640		0–400	50–650	500–1,000	
325				75			1,000	350		2,025	0–10	5–70	35–800		0–400	150–650	500–1,000	
300	0			125			1,000	375		2,025	0–10	5–80	40–940		0–400	200–650	550–1,050	
275	25			175		0	1,025	375	0	2,000	0–15	5–100	50–1,140		0–450	250–650	550–1,050	
250	100		0	200		250	1,025	400	50	1,975	0–15	5–110	60–1,320		0–450	250–700	550–1,050	
225	150	0	25	250		300	1,025	425	125	1,950	0–15	10–130	70–1,560		0–450	300–700	600–1,050	
200	250	25	75	250		325	1,025	425	150	1,925	0–20	10–180	90–2,160		0–500	300–700	600–1,050	
175	275	50	100	275		325	1,025	450	175	1,900	0–25	10–220	110–2,700		0–500	350–700	600–1,050	
150	300	100	125	300		350	1,050	450	200	1,875	0–35	15–280	140–3,400		0–500	350–700	600–1,050	
125	325	125	150	300	0	350	1,050	450	225	1,850	0–40	15–370	180–4,500		0–500	350–700	600–1,050	
100	350	175	175	325	275	350	1,050	475	225	1,825	5–50	20–450	220–5,400		50–500	350–700	600–1,050	
75	350	200	175	325	300	375	1,050	475	250	1,775	5–70	25–580	280–7,000	0	100–500	350–700	600–1,050	0
50	350	200	200	325	300	375	925	425	225	1,750	5–80	30–700	340–8,400	0–5	100–500	350–700	600–1,050	0–50
25	300	200	175	325	275	350	775	350	200	1,725	FALLOUT GOVERNS							
0	225	150	125	275	250	300	625	300	150	1,675								

Figure 3.6a continued.

[1]Long-Range Cannon.

CASUALTY and DAMAGE Tables
Long-Range Cannon
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	*Exposed personnel*		*Protected personnel*		*Personnel in in APC's*		*Personnel in 1-m earth shelters*		*Personnel in multistory apt bldgs*		*Personnel in framehouses*		*Radius of safety*								
													Unwarned, exposed			*Warned, exposed*			*Warned, protected*		
	Prompt	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Neg*	*Mod*	*Emer*	*Neg*	*Mod*	*Emer*	*Neg*	*Mod*	*Emer*
1,050		0											3,025	2,150	1,700	1,750	1,350	875	1,225	875	350
1,025		225										0	3,025	2,150	1,700	1,750	1,350	900	1,250	900	425
1,000		325				0						175	3,025	2,150	1,725	1,775	1,375	925	1,275	925	475
975		400				150						275	3,025	2,175	1,750	1,775	1,400	950	1,300	950	525
950		450				250				0		350	3,050	2,175	1,750	1,800	1,400	1,000	1,300	975	575
925		500				350				200		425	3,050	2,200	1,775	1,800	1,425	1,000	1,325	1,000	600
900		550				400				300	0	475	3,050	2,200	1,775	1,825	1,450	1,025	1,350	1,025	650
875		575				450				350	650	650	3,075	2,225	1,800	1,825	1,450	1,050	1,350	1,050	675
850		625				500				400	750	750	3,075	2,225	1,800	1,850	1,475	1,075	1,375	1,075	700
825		650		0		550				450	850	850	3,075	2,225	1,800	1,850	1,500	1,100	1,400	1,075	725
800	0	675		200		575				500	925	925	3,100	2,250	1,825	1,875	1,500	1,100	1,400	1,100	750
775	175	700		275		600				550	975	975	3,100	2,250	1,825	1,875	1,525	1,125	1,425	1,125	800
750	275	725		350	0	650				775	1,050	1,050	3,100	2,275	1,850	1,900	1,525	1,150	1,425	1,150	800
725	325	750		400	175	675			0	600	1,150	1,150	3,100	2,275	1,850	1,900	1,550	1,150	1,550	1,150	825
700	375	775		425	250	700			150	625	1,300	1,300	3,125	2,275	1,875	1,900	1,550	1,175	1,700	1,175	850
675	425	800		475	300	725			225	650	1,500	1,500	3,125	2,275	1,875	1,925	1,550	1,200	1,725	1,175	875
650	450	825		500	350	750		0	300	675	1,600	1,600	3,125	2,300	1,875	1,925	1,575	1,200	1,725	1,200	900
625	500	850	0	525	400	750		175	350	700	1,625	1,625	3,125	2,300	1,900	1,925	1,575	1,225	1,725	1,200	925
600	525	850	150	550	450	775		250	375	725	1,650	1,650	3,125	2,300	1,900	1,950	1,600	1,225	1,725	1,225	925
575	550	875	225	575	475	800		300	425	750	1,650	1,650	3,150	2,300	1,900	1,950	1,600	1,250	1,725	1,225	950
550	575	900	300	600	500	825		350	450	775	1,625	1,625	3,150	2,325	1,900	1,950	1,600	1,250	1,750	1,250	950
525	600	900	325	625	525	825		375	525	775	1,625	1,625	3,150	2,325	1,925	1,950	1,625	1,275	1,725	1,250	975
500	625	925	375	650	550	850		425	825	825	1,600	1,600	3,150	2,325	1,925	1,975	1,625	1,275	1,700	1,275	975
475	650	925	400	675	575	875	0	450	875	875	1,550	1,550	3,150	2,325	1,925	1,975	1,625	1,275	1,675	1,275	1,000
450	650	950	425	700	600	875	100	475	925	925	1,525	1,525	3,150	2,350	1,950	1,975	1,650	1,300	1,650	1,300	1,000
425	675	950	450	700	600	875	175	500	925	925	1,475	1,475	3,175	2,350	1,950	2,000	1,650	1,300	1,625	1,300	1,025
400	700	975	475	725	625	900	225	525	925	925	1,450	1,450	3,175	2,350	1,950	2,000	1,650	1,300	1,600	1,300	1,025
375	700	975	500	725	650	900	275	525	925	925	1,425	1,425	3,175	2,350	1,950	2,000	1,650	1,325	1,575	1,300	1,050
350	725	975	500	750	650	925	300	550	900	900	1,400	1,400	3,175	2,350	1,950	2,000	1,675	1,325	1,575	1,325	1,050
325	725	1,000	525	750	675	925	325	575	875	875	1,375	1,375	3,175	2,350	1,975	2,000	1,675	1,325	1,575	1,325	1,050
300	750	1,000	550	775	675	950	350	575	850	900	1,350	1,350	3,175	2,350	1,975	2,000	1,675	1,350	1,600	1,325	1,075
275	750	1,000	550	775	700	950	375	600	850	900	1,300	1,300	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,325	1,075
250	750	1,025	575	775	700	950	400	600	825	900	1,275	1,275	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,350	1,075
225	775	1,025	575	800	700	950	400	600	800	925	1,250	1,250	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,075
200	775	1,025	600	800	725	975	425	625	800	925	1,225	1,225	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
175	775	1,025	600	800	725	975	425	625	775	925	1,200	1,200	3,200	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
150	775	1,025	600	800	725	975	425	625	750	925	1,175	1,175	3,200	2,375	2,000	2,025	1,700	1,350	1,600	1,350	1,100
125	775	1,050	600	800	725	975	450	650	750	925	1,150	1,150	3,200	2,375	2,000	2,025	1,700	1,375	1,625	1,350	1,100
100	800	1,050	625	825	750	975	450	650	725	950	1,125	1,125	3,150	2,375	1,950	2,025	1,700	1,375	1,625	1,350	1,100
75	800	1,050	625	825	750	975	450	650	700	950	1,125	1,125	2,800	2,200	1,800	2,025	1,700	1,375	1,625	1,350	1,100
50	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,550	2,025	1,650	2,025	1,700	1,375	1,625	1,375	1,100
25	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,275	1,850	1,525	2,025	1,700	1,375	1,625	1,375	1,100
0	800	1,050	625	825	750	975	450	650	725	950	1,050	1,050	2,125	1,700	1,375	2,025	1,700	1,375	1,625	1,375	1,100

HOB_{fs} = 52 m

Low HOB_{min} = 91 m

High HOB_{min} = 206 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 3.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d Degree Burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,050							1,175			2,875			0–5				0–500	
1,025							1,200			2,875			0–5				0–550	
1,000							1,225			2,875			0–10				0–600	
975							1,225			2,900			0–10				0–600	
950							1,250			2,900			0–10				0–650	
925							1,275			2,900			0–10				0–700	
900							1,300			2,900			0–15				0–750	
875							1,300			2,925			0–15				0–750	
850							1,325			2,925			0–20				0–800	
825							1,350			2,925		0	0–20			0	0–800	
800							1,350			2,925		0–5	0–25			0–50	0–850	
775							1,375			2,900		0–5	0–30			0–200	0–850	
750							1,375	0		2,900		0–5	0–35			0–300	0–900	
725							1,400	75		2,900		0–5	0–45			0–350	0–900	
700							1,400	200		2,900		0–5	5–50			0–400	50–950	
675							1,425	275		2,875		0–10	5–65			0–450	200–950	
650							1,425	325		2,875		0–10	5–80			0–500	300–950	
625							1,450	375		2,850		0–10	5–100			0–500	350–1,000	
600							1,450	425		2,850		0–10	5–120			0–550	400–1,000	
575							1,475	450		2,850	0	0–15	10–150		0	0–600	400–1,000	
550							1,475	475		2,825	0–5	0–20	10–190		0–50	0–600	450–1,050	
525							1,475	500		2,825	0–5	0–25	10–250		0–200	0–650	450–1,050	
500				0			1,500	525		2,800	0–5	0–25	15–300		0–250	0–650	500–1,050	
475				50			1,500	550		2,800	0–5	0–40	20–450		0–300	0–650	550–1,050	
450				100			1,500	575		2,775	0–5	5–50	25–570		0–300	50–700	550–1,100	
425				150			1,525	600		2,750	0–10	5–70	30–750		0–350	150–700	600–1,100	
400	0			200		0	1,525	600	0	2,725	0–10	5–90	40–1,000		0–400	200–700	600–1,100	
375	50			250		400	1,525	625	125	2,725	0–15	5–110	50–1,300		0–400	250–750	600–1,100	
350	100			300		425	1,525	650	175	2,700	0–15	10–140	70–1,600		0–400	300–750	650–1,100	
325	150		0	325		425	1,550	650	225	2,675	0–20	10–165	80–1,980		0–400	350–750	650–1,100	
300	250	0	50	350		425	1,550	675	250	2,650	0–25	10–200	100–2,340		0–450	350–750	650–1,150	
275	375	25	100	375		450	1,550	675	275	2,625	0–25	10–240	120–2,820		0–500	400–800	650–1,150	
250	400	75	150	400		450	1,550	675	300	2,600	0–35	15–275	140–3,300		0–500	400–800	700–1,150	
225	425	100	175	400		450	1,550	700	325	2,575	0–35	15–325	160–3,900		0–550	400–800	700–1,150	
200	450	125	200	425		475	1,550	700	350	2,550	5–50	20–450	220–5,400		50–550	450–800	700–1,150	
175	450	175	225	450	0	475	1,575	700	350	2,525	5–60	25–550	280–6,600	0	100–550	450–800	700–1,150	0
150	475	225	225	450	400	500	1,575	725	375	2,475	5–80	30–700	340–8,400	0–5	150–550	450–800	700–1,150	0–50
125	500	275	250	475	425	500	1,575	725	375	2,450	5–100	40–940	450–11,000	0–5	200–550	450–800	700–1,150	0–100
100	500	300	250	475	425	525	1,550	725	400	2,425	5–125	50–1,140	540–13,500	0–5	200–550	450–800	700–1,150	0–150
75	500	300	275	475	425	525	1,400	650	350	2,400	10–160	60–1,450	700–17,400	0–5	200–550	450–800	700–1,150	0–150
50	475	300	275	475	400	500	1,250	575	325	2,350	FALLOUT GOVERNS							
25	450	275	250	425	350	475	1,100	500	275	2,325								
0	325	225	175	375	300	400	925	450	250	2,275								

Figure 3.6b continued.

[1]Long-Range Cannon.

LRC 1

CASUALTY and DAMAGE Tables
Long-Range Cannon
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		0									600	600	3,850	2,975	2,700	2,375	1,375	925	1,275	900	100
1,150		250									850	850	3,850	3,000	2,725	2,400	1,400	1,000	1,325	950	350
1,100		400				0				0	1,000	1,000	3,875	3,000	2,750	2,425	1,450	1,050	1,375	1,025	500
1,050		525				325				150	1,150	1,150	3,875	3,025	2,750	2,425	1,500	1,100	1,400	1,075	600
1,000		625				450				350	1,300	1,300	3,900	3,050	2,775	2,450	1,525	1,150	1,500	1,125	675
950		700		0		550				475	1,500	1,500	3,900	3,050	2,800	2,475	1,550	1,200	1,650	1,150	750
900	0	750		200		625				550	1,750	1,750	3,925	3,075	2,800	2,500	1,575	1,225	2,100	1,200	800
850	275	800		350	0	700			0	625	2,125	2,125	3,925	3,075	2,825	2,500	1,600	1,250	2,175	1,250	850
800	400	850		450	300	750			175	700	2,175	2,175	3,950	3,100	2,850	2,525	1,625	1,300	2,175	1,275	900
775	450	875		500	350	775			475	725	2,200	2,200	3,950	3,100	2,850	2,525	1,650	1,300	2,175	1,275	925
750	500	900		550	400	800		0	550	750	2,200	2,200	3,950	3,100	2,850	2,550	1,650	1,325	2,175	1,325	950
725	525	925	0	575	450	825		175	625	775	2,200	2,200	3,950	3,125	2,850	2,550	1,675	1,350	2,175	1,400	950
700	550	950	100	600	475	850		250	675	800	2,175	2,175	3,975	3,125	2,875	2,550	1,675	1,350	2,225	1,475	975
675	600	950	200	625	525	875		325	725	825	2,175	2,175	3,975	3,125	2,875	2,550	1,700	1,350	2,200	1,500	1,000
650	625	975	275	650	550	875		375	1,200	1,200	2,150	2,150	3,975	3,150	2,875	2,575	1,700	1,375	2,175	1,475	1,000
625	650	1,000	325	675	575	900		400	1,225	1,225	2,125	2,125	3,975	3,150	2,875	2,575	1,700	1,400	2,150	1,475	1,025
600	650	1,000	375	700	600	925		450	1,250	1,250	2,100	2,100	3,975	3,150	2,900	2,575	1,725	1,400	2,125	1,450	1,050
575	675	1,025	400	725	625	950		475	1,275	1,275	2,075	2,075	3,975	3,150	2,900	2,600	1,725	1,400	2,100	1,425	1,050
550	700	1,025	450	750	650	950	0	500	1,275	1,275	2,050	2,050	3,975	3,150	2,900	2,600	1,725	1,425	2,075	1,425	1,075
525	725	1,050	475	750	675	975	150	525	1,250	1,250	2,000	2,000	4,000	3,150	2,900	2,600	1,750	1,425	2,025	1,425	1,075
500	825	1,050	500	775	675	975	225	550	1,250	1,250	1,975	1,975	4,000	3,175	2,900	2,600	1,750	1,450	2,000	1,425	1,100
475	850	1,075	525	800	700	1,000	275	575	1,225	1,225	1,950	1,950	4,000	3,175	2,925	2,600	1,750	1,450	1,950	1,425	1,100
450	850	1,075	550	800	725	1,000	300	600	1,200	1,200	1,900	1,900	4,000	3,175	2,925	2,600	1,750	1,450	1,925	1,425	1,125
425	850	1,100	575	825	725	1,025	350	625	1,175	1,175	1,850	1,850	4,000	3,175	2,925	2,625	1,775	1,450	1,875	1,450	1,125
400	850	1,100	575	825	750	1,025	375	625	1,175	1,175	1,825	1,825	4,000	3,175	2,925	2,625	1,775	1,475	1,850	1,450	1,125
375	875	1,100	600	850	750	1,025	400	650	1,150	1,150	1,775	1,775	4,000	3,175	2,925	2,625	1,775	1,475	1,800	1,450	1,150
350	875	1,125	625	850	775	1,050	425	650	1,125	1,125	1,750	1,750	4,000	3,175	2,925	2,625	1,800	1,475	1,750	1,450	1,150
325	875	1,125	650	850	775	1,050	450	675	1,100	1,100	1,700	1,700	4,025	3,175	2,950	2,625	1,800	1,475	1,725	1,475	1,150
300	875	1,125	650	875	800	1,050	450	675	1,075	1,075	1,650	1,650	4,025	3,175	2,950	2,625	1,800	1,500	1,725	1,475	1,175
275	875	1,150	650	875	800	1,075	475	700	1,075	1,075	1,625	1,625	4,025	3,200	2,950	2,650	1,800	1,500	1,725	1,475	1,175
250	875	1,150	650	900	800	1,075	475	700	1,050	1,050	1,600	1,600	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
225	875	1,150	675	900	825	1,075	500	700	1,025	1,025	1,575	1,575	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
200	875	1,150	675	900	825	1,075	500	725	1,025	1,050	1,550	1,550	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
175	875	1,150	700	900	825	1,075	525	725	1,000	1,050	1,500	1,500	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
150	875	1,150	700	900	825	1,100	525	725	975	1,050	1,475	1,475	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
125	875	1,175	700	900	850	1,100	525	725	975	1,050	1,450	1,450	3,800	3,050	2,850	2,600	1,825	1,525	1,750	1,500	1,200
100	900	1,175	700	925	850	1,100	525	750	950	1,050	1,425	1,425	3,575	2,825	2,600	2,525	1,825	1,525	1,750	1,500	1,200
75	900	1,175	700	925	850	1,100	550	750	925	1,050	1,400	1,400	3,325	2,600	2,350	2,450	1,825	1,525	1,750	1,500	1,200
50	900	1,175	700	925	850	1,100	550	750	900	1,050	1,375	1,375	3,075	2,350	2,100	2,350	1,825	1,525	1,750	1,500	1,200
25	900	1,175	700	925	850	1,100	550	750	900	1,050	1,350	1,350	2,850	2,125	1,850	2,275	1,825	1,525	1,750	1,500	1,200
0	900	1,175	700	925	850	1,100	550	750	875	1,050	1,325	1,325	2,575	1,875	1,600	2,175	1,825	1,525	1,750	1,500	1,200

$HOB_{fs} = 65$ m
Low $HOB_{min} = 115$ m
High $HOB_{min} = 259$ m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 3.6c.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							1,775			3,650			0–5				0–650	
1,150							1,825			3,675			0–5				0–750	
1,100							1,850			3,675			0–10				0–800	
1,050							1,875	0		3,675			0–10				0–850	
1,000							1,900	150		3,675			0–15				0–950	
950							1,925	350		3,675		0	0–20			0	0–1,000	
900							1,950	450		3,650		0–5	0–25			0–50	0–1,050	
850							1,975	550		3,625		0–5	0–35			0–350	0–1,050	
800							2,000	625		3,600		0–5	5–45			0–450	50–1,100	
775							2,000	650		3,600		0–5	5–55			0–500	200–1,150	
750							2,025	675		3,600		0–10	5–70			0–550	300–1,150	
725							2,025	700		3,575		0–10	5–85			0–550	350–1,150	
700							2,025	725		3,575		0–10	5–100			0–600	400–1,200	
675							2,050	750		3,550		0–15	5–125			0–600	450–1,200	
650							2,050	775		3,550		0–15	10–160			0–650	500–1,200	
625				0			2,050	800		3,525	0	0–20	10–200		0	0–700	500–1,200	
600				50			2,075	800		3,525	0–5	0–20	10–240		0–50	0–700	550–1,250	
575				125			2,075	825		3,500	0–5	0–25	15–300		0–200	0–700	600–1,250	
550				175			2,075	850	0	3,475	0–5	0–35	15–380		0–250	0–750	600–1,250	
525				225			2,075	875	125	3,450	0–5	0–45	20–500		0–300	0–750	650–1,250	
500	0			275			2,100	875	200	3,450	0–10	5–50	25–600		0–350	50–800	650–1,300	
475	50			325		0	2,100	900	250	3,425	0–10	5–75	40–900		0–400	150–800	650–1,300	
450	125			375		575	2,100	900	300	3,400	0–15	5–100	50–1,140		0–400	250–800	700–1,300	
425	175		0	400		600	2,100	925	325	3,375	0–15	5–125	60–1,500		0–450	300–800	700–1,300	
400	225		25	425		600	2,125	925	375	3,350	0–20	10–170	80–1,980		0–450	300–850	700–1,300	
375	350	0	75	475		600	2,125	950	400	3,325	0–25	10–220	120–2,600		0–500	350–850	750–1,300	
350	475	25	125	475		625	2,125	950	400	3,300	0–30	15–270	140–3,200		0–500	400–850	750–1,350	
325	500	75	175	500		625	2,125	950	425	3,275	0–40	15–330	160–3,960		0–500	400–850	750–1,350	
300	550	100	200	525		625	2,125	975	450	3,250	5–45	20–390	200–4,680		50–550	400–850	750–1,350	
275	575	150	250	550		625	2,125	975	475	3,225	5–55	20–470	230–5,650	0	150–550	450–900	800–1,350	0
250	575	175	275	550		625	2,125	975	475	3,200	5–65	25–550	270–6,600	0–5	200–550	450–900	800–1,350	0–50
225	600	225	275	575	0	650	2,150	975	500	3,175	5–75	30–650	320–7,800	0–5	200–600	450–900	800–1,350	0–150
200	625	275	300	600	450	650	2,150	1,000	500	3,150	5–100	40–900	440–10,800	0–5	250–600	500–900	800–1,350	0–150
175	650	350	325	600	525	650	2,150	1,000	500	3,125	5–125	50–1,100	540–13,200	0–5	250–600	500–900	800–1,350	0–200
150	650	375	325	625	550	650	2,150	1,000	525	3,075	10–160	60–1,400	680–16,800	0–5	300–600	500–900	800–1,350	0–200
125	650	375	350	625	575	650	2,075	975	525	3,050	10–200	75–1,850	900–22,200	0–5	300–600	500–900	800–1,350	0–250
100	650	375	350	650	575	650	1,900	900	475	3,025	10–250	90–2,250	1,080–27,000	0–10	300–600	500–900	800–1,350	0–250
75	650	400	375	625	575	650	1,750	825	450	2,975	15–320	120–2,900	1,400–34,800	0–10	300–600	500–900	800–1,350	0–250
50	625	375	350	600	525	625	1,575	750	400	2,950	FALLOUT GOVERNS							
25	550	350	300	575	500	575	1,425	675	375	2,900								
0	450	300	250	500	425	500	1,250	600	325	2,875								

LRC 1

Figure 3.6c continued.

[1]Long-Range Cannon.

CASUALTY and DAMAGE Tables
Long-Range Cannon
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		400				250				0	1,600	1,600	5,725	3,850	3,275	3,350	1,950	1,375	2,050	1,075	575
1,150		525				425				250	1,750	1,750	5,725	3,875	3,300	3,375	1,975	1,425	2,475	1,125	675
1,100		625				550				425	1,950	1,950	5,750	3,875	3,325	3,400	2,000	1,450	2,700	1,150	750
1,050		700		0		625				525	2,350	2,350	5,750	3,900	3,350	3,400	2,025	1,500	2,750	1,275	825
1,000	0	775		225	0	700			0	625	2,625	2,625	5,750	3,900	3,350	3,425	2,050	1,525	2,750	1,400	875
950	300	825		400	175	775			475	700	2,675	2,675	5,775	3,925	3,375	3,425	2,075	1,550	2,750	1,650	925
900	425	875		500	350	825			625	750	2,700	2,700	5,775	3,925	3,375	3,450	2,100	1,600	2,750	1,800	975
850	525	925		575	450	875		0	800	825	2,700	2,700	5,775	3,950	3,400	3,475	2,125	1,625	2,775	1,875	1,025
800	600	975	0	650	550	925		275	1,150	1,150	2,650	2,650	5,800	3,950	3,400	3,475	2,150	1,650	2,725	1,850	1,075
775	625	1,000	200	675	575	950		350	1,450	1,450	2,650	2,650	5,800	3,950	3,425	3,475	2,150	1,650	2,700	1,850	1,075
750	650	1,025	275	700	600	975		400	1,525	1,525	2,625	2,625	5,800	3,950	3,425	3,475	2,150	1,675	2,675	1,825	1,100
725	675	1,025	325	725	625	975		450	1,550	1,550	2,575	2,575	5,800	3,975	3,425	3,500	2,175	1,675	2,650	1,800	1,125
700	700	1,050	400	750	675	1,000		475	1,550	1,550	2,525	2,525	5,800	3,975	3,425	3,500	2,175	1,700	2,600	1,800	1,125
675	725	1,075	425	775	700	1,025		525	1,525	1,525	2,475	2,475	5,800	3,975	3,425	3,500	2,175	1,700	2,575	1,775	1,150
650	1,000	1,075	475	800	725	1,050	0	550	1,525	1,525	2,450	2,450	5,825	3,975	3,450	3,500	2,200	1,700	2,550	1,750	1,150
625	1,100	1,100	500	825	725	1,050	125	575	1,525	1,525	2,400	2,400	5,825	3,975	3,450	3,500	2,200	1,725	2,500	1,725	1,175
600	1,125	1,125	525	825	750	1,075	200	600	1,500	1,500	2,350	2,350	5,825	3,975	3,450	3,525	2,200	1,725	2,475	1,700	1,200
575	1,125	1,125	550	850	775	1,075	275	625	1,500	1,500	2,325	2,325	5,825	4,000	3,450	3,525	2,225	1,750	2,425	1,675	1,200
550	1,150	1,150	575	875	800	1,100	325	650	1,475	1,475	2,275	2,275	5,825	4,000	3,450	3,525	2,225	1,750	2,400	1,650	1,225
525	1,150	1,150	600	875	800	1,100	350	675	1,450	1,450	2,250	2,250	5,825	4,000	3,450	3,525	2,225	1,750	2,350	1,625	1,225
500	1,150	1,150	625	900	825	1,125	400	700	1,425	1,425	2,200	2,200	5,825	4,000	3,475	3,525	2,225	1,750	2,300	1,600	1,225
475	1,150	1,175	650	900	850	1,125	425	700	1,400	1,400	2,175	2,175	5,825	4,000	3,475	3,525	2,250	1,775	2,275	1,575	1,250
450	1,150	1,175	650	925	850	1,150	450	725	1,375	1,375	2,150	2,150	5,825	4,000	3,475	3,525	2,250	1,775	2,225	1,550	1,250
425	1,150	1,175	675	925	875	1,150	475	750	1,350	1,350	2,100	2,100	5,825	4,000	3,475	3,525	2,250	1,775	2,175	1,550	1,275
400	1,150	1,200	700	950	875	1,150	500	750	1,350	1,350	2,075	2,075	5,825	4,000	3,475	3,550	2,250	1,775	2,125	1,550	1,275
375	1,150	1,200	700	950	875	1,175	525	775	1,325	1,325	2,050	2,050	5,850	4,025	3,475	3,550	2,250	1,800	2,100	1,575	1,275
350	1,150	1,200	725	975	900	1,175	525	775	1,300	1,300	2,025	2,025	5,850	4,025	3,475	3,550	2,250	1,800	2,050	1,575	1,275
325	1,150	1,225	725	975	900	1,175	550	775	1,275	1,275	1,975	1,975	5,850	4,025	3,475	3,550	2,275	1,800	2,025	1,575	1,300
300	1,150	1,225	750	975	925	1,175	550	800	1,275	1,275	1,950	1,950	5,850	4,025	3,500	3,550	2,275	1,800	2,000	1,575	1,300
275	1,150	1,225	750	1,000	925	1,200	575	800	1,250	1,250	1,925	1,925	5,850	4,025	3,500	3,550	2,275	1,800	1,950	1,575	1,300
250	1,150	1,225	750	1,000	925	1,200	575	825	1,225	1,225	1,900	1,900	5,850	4,025	3,500	3,550	2,275	1,800	1,925	1,600	1,300
225	1,150	1,250	775	1,000	950	1,200	600	825	1,225	1,225	1,875	1,875	5,850	4,025	3,500	3,500	2,275	1,825	1,900	1,600	1,325
200	1,150	1,250	775	1,000	950	1,200	600	825	1,200	1,200	1,850	1,850	5,850	4,025	3,500	3,550	2,275	1,825	1,875	1,600	1,325
175	1,125	1,250	775	1,000	950	1,200	625	825	1,175	1,175	1,825	1,825	5,725	3,925	3,400	3,500	2,200	1,800	1,825	1,600	1,325
150	1,125	1,250	800	1,000	950	1,225	625	850	1,175	1,175	1,800	1,800	5,400	3,725	3,200	3,325	2,225	1,775	1,850	1,600	1,325
125	1,100	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,775	1,775	5,100	3,525	3,000	3,150	2,175	1,750	1,850	1,600	1,325
100	1,075	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,750	1,750	4,750	3,300	2,800	2,975	2,150	1,725	1,850	1,600	1,325
75	1,050	1,250	800	1,025	950	1,225	625	850	1,125	1,175	1,725	1,725	4,500	3,100	2,625	2,750	2,100	1,700	1,875	1,600	1,325
50	1,025	1,250	800	1,025	975	1,225	625	850	1,125	1,175	1,700	1,700	4,100	2,875	2,425	2,600	2,050	1,675	1,875	1,600	1,325
25	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,750	2,675	2,250	2,425	2,025	1,650	1,875	1,600	1,325
0	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,375	2,475	2,050	2,275	1,975	1,625	1,875	1,600	1,325

$HOB_{fs} = 82$ m
Low $HOB_{min} = 144$ m
High $HOB_{min} = 326$ m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 3.6d.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam Hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							2,625	650		4,625			0–10				0–750	
1,150							2,650	750		4,600			0–10				0–800	
1,100							2,675	825		4,600			0–15				0–900	
1,050							2,700	875		4,575		0	0–20			0	0–950	
1,000							2,700	925		4,550		0–5	0–25			0–50	0–1,000	
950							2,725	975		4,525		0–5	0–35			0–300	0–1,050	
900							2,750	1,025		4,500		0–5	5–45			0–450	50–1,100	
850							2,750	1,075		4,475		0–10	5–65			0–550	350–1,150	
800				0			2,775	1,100		4,450		0–10	5–90			0–600	450–1,150	
775				25			2,775	1,125		4,450	0	0–10	5–110		0	0–650	500–1,200	
750				75			2,800	1,150	0	4,425	0–5	0–15	10–140		0–50	0–700	550–1,200	
725				150			2,800	1,150	75	4,400	0–5	0–15	10–170		0–200	0–700	550–1,200	
700				225			2,800	1,175	200	4,400	0–5	0–20	10–200		0–300	0–750	600–1,250	
675				275			2,800	1,200	275	4,375	0–5	0–25	10–250		0–350	0–750	600–1,250	
650				325			2,825	1,200	325	4,350	0–5	0–30	15–320		0–400	0–800	650–1,250	
625	0			375		0	2,825	1,225	375	4,325	0–5	0–35	20–390		0–450	0–800	700–1,300	
600	75			425		750	2,825	1,225	425	4,325	0–5	5–40	20–480		0–450	50–800	700–1,300	
575	125			475		775	2,825	1,250	450	4,300	0–10	5–50	25–590		0–500	200–850	700–1,300	
550	200			525		775	2,825	1,250	475	4,275	0–10	5–65	30–750		0–550	250–850	750–1,300	
525	250		0	550		775	2,850	1,275	500	4,250	0–10	5–85	40–990		0–600	300–900	750–1,350	
500	325		25	575		775	2,850	1,275	525	4,225	0–15	5–100	50–1,200		0–600	350–900	800–1,350	
475	425	0	100	600		775	2,850	1,275	550	4,200	0–20	10–150	75–1,800		0–600	400–900	800–1,350	
450	600	25	150	625	0	800	2,850	1,300	575	4,175	0–25	10–190	100–2,280		0–600	400–900	800–1,350	
425	675	75	200	650	550	800	2,850	1,300	600	4,150	0–30	10–250	120–3,000		0–650	450–950	800–1,350	
400	700	100	250	675	650	800	2,850	1,300	600	4,125	0–40	15–330	160–3,960		0–650	450–950	850–1,350	
375	725	150	275	700	675	800	2,875	1,325	625	4,100	0–50	20–430	210–5,160		0–650	500–950	850–1,400	
350	750	200	325	725	675	825	2,875	1,325	650	4,075	5–60	25–530	260–6,360		50–700	500–950	850–1,400	
325	775	225	350	725	700	825	2,875	1,325	650	4,050	5–75	30–660	320–7,920	0	150–700	500–950	850–1,400	0
300	800	275	350	750	700	825	2,875	1,325	675	4,025	5–90	35–780	380–9,360	0–5	200–700	550–1,000	850–1,400	0–50
275	800	325	375	775	700	825	2,875	1,350	675	4,000	5–105	40–940	460–11,300	0–5	250–700	550–1,000	900–1,400	0–150
250	825	375	400	775	700	850	2,875	1,350	675	3,950	5–125	45–1,100	530–13,200	0–5	250–750	550–1,000	900–1,400	0–200
225	850	425	425	800	725	850	2,875	1,350	700	3,925	10–150	60–1,300	630–15,600	0–5	300–750	600–1,000	900–1,400	0–200
200	850	475	450	825	725	850	2,875	1,350	700	3,900	10–200	75–1,800	870–21,600	0–5	300–750	600–1,000	900–1,400	0–250
175	875	500	450	825	725	850	2,850	1,350	725	3,875	10–250	90–2,200	1,060–26,400	0–10	350–750	600–1,000	900–1,400	0–250
150	875	500	475	850	725	850	2,675	1,275	675	3,825	15–310	120–2,800	1,350–33,600	0–10	350–750	600–1,000	900–1,400	0–300
125	850	500	475	850	725	850	2,500	1,200	650	3,800	20–410	150–3,700	1,780–44,000	0–10	350–750	600–1,000	900–1,400	0–300
100	850	525	475	850	700	825	2,350	1,125	600	3,775	20–500	180–4,500	2,160–54,000	0–15	350–750	600–1,000	900–1,400	0–300
75	825	500	475	825	675	800	2,175	1,050	550	3,725	FALLOUT GOVERNS							
50	775	500	450	775	750	750	2,000	975	525	3,700								
25	700	450	375	725	600	725	1,850	900	475	3,650								
0	600	400	325	650	550	650	1,675	825	450	3,625								

Figure 3.6d continued.

[1]Long-Range Cannon.

LRC 1

CASUALTY and DAMAGE Tables
Long-Range Cannon
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in l-m earth shelters		Personnel in multistory apt bldgs		Personnel in frame houses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		600				400			0	125	3,750	3,750	8,575	6,450	5,600	5,225	3,100	2,350	3,750	2,000	675
1,300		700				550			900	900	3,750	3,750	8,575	6,450	5,600	5,225	3,125	2,375	3,750	2,175	750
1,250		800				650			1,125	1,125	3,750	3,750	8,600	6,475	5,625	5,250	3,150	2,400	3,750	2,375	825
1,200	0	875		0		750			1,300	1,300	3,750	3,750	8,600	6,475	5,625	5,250	3,175	2,425	3,750	2,500	925
1,150	250	925		250	0	800			1,425	1,425	3,750	3,750	8,600	6,475	5,625	5,275	3,175	2,450	3,750	2,550	975
1,100	425	975	0	425	250	875			2,125	2,125	3,700	3,700	8,600	6,500	5,650	5,275	3,200	2,475	3,700	2,525	1,025
1,050	550	1,025	150	550	400	950			2,150	2,150	3,700	3,700	8,625	6,500	5,650	5,300	3,225	2,500	3,650	2,500	1,125
1,000	625	1,075	350	625	525	1,000		0	2,175	2,175	3,650	3,650	8,625	6,500	5,675	5,300	3,225	2,500	3,600	2,475	1,225
950	700	1,125	475	700	600	1,050		300	2,175	2,175	3,600	3,600	8,625	6,500	5,675	5,300	3,250	2,525	3,550	2,425	1,375
900	1,350	1,350	550	775	675	1,075		425	2,150	2,150	3,500	3,500	8,625	6,525	5,675	5,325	3,250	2,550	3,475	2,400	1,450
850	1,575	1,575	650	825	750	1,125		525	2,125	2,125	3,400	3,400	8,650	6,525	5,675	5,325	3,275	2,550	3,400	2,350	1,475
800	1,625	1,625	700	875	800	1,150		600	2,100	2,100	3,300	3,300	8,650	6,525	5,700	5,325	3,300	2,575	3,325	2,300	1,450
775	1,625	1,625	725	900	825	1,175	0	625	2,100	2,100	3,250	3,250	8,650	6,525	5,700	5,325	3,300	2,575	3,300	2,275	1,450
750	1,625	1,625	750	925	850	1,200	125	650	2,075	2,075	3,250	3,250	8,650	6,525	5,700	5,350	3,300	2,600	3,250	2,250	1,425
725	1,650	1,650	775	925	850	1,200	225	675	2,050	2,050	3,200	3,200	8,650	6,525	5,700	5,350	3,300	2,600	3,225	2,225	1,425
700	1,650	1,650	800	950	875	1,225	300	700	2,050	2,050	3,150	3,150	8,650	6,525	5,700	5,350	3,325	2,600	3,175	2,175	1,400
675	1,650	1,650	825	975	900	1,250	350	725	2,025	2,025	3,100	3,100	8,650	6,550	5,725	5,350	3,325	2,625	3,125	2,150	1,375
650	1,650	1,650	850	1,000	925	1,250	400	750	2,000	2,000	3,050	3,050	8,650	6,550	5,725	5,350	3,325	2,625	3,075	2,125	1,350
625	1,650	1,650	850	1,000	925	1,250	425	775	1,975	1,975	3,000	3,000	8,675	6,550	5,725	5,350	3,325	2,625	3,050	2,100	1,375
600	1,650	1,650	875	1,025	950	1,275	475	800	1,950	1,950	3,000	3,000	8,675	6,550	5,725	5,375	3,325	2,625	3,000	2,100	1,375
575	1,650	1,650	900	1,025	975	1,275	500	825	1,925	1,925	2,950	2,950	8,675	6,550	5,725	5,375	3,350	2,650	2,950	2,075	1,400
550	1,650	1,650	900	1,050	975	1,300	525	825	1,900	1,900	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,900	2,050	1,400
525	1,650	1,650	925	1,050	1,000	1,300	550	850	1,875	1,875	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,850	2,025	1,425
500	1,650	1,650	950	1,075	1,000	1,325	575	850	1,850	1,850	2,850	2,850	8,675	6,575	5,725	5,375	3,350	2,650	2,825	2,025	1,425
475	1,650	1,650	950	1,075	1,025	1,325	600	875	1,825	1,825	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,775	2,000	1,425
450	1,650	1,650	975	1,100	1,025	1,325	625	875	1,800	1,800	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,750	1,975	1,425
425	1,650	1,650	975	1,100	1,050	1,350	625	900	1,775	1,775	2,750	2,750	8,675	6,575	5,725	5,375	3,350	2,675	2,725	1,950	1,450
400	1,650	1,650	975	1,125	1,050	1,350	650	900	1,750	1,750	2,700	2,700	8,675	6,575	5,725	5,375	3,350	2,675	2,700	1,950	1,450
375	1,650	1,650	1,000	1,125	1,050	1,350	650	925	1,725	1,725	2,700	2,700	8,675	6,575	5,800	5,375	3,350	2,675	2,650	1,925	1,450
350	1,650	1,650	1,000	1,125	1,075	1,375	675	925	1,700	1,700	2,650	2,650	8,675	6,575	5,800	5,375	3,375	2,675	2,625	1,900	1,475
325	1,650	1,650	1,025	1,150	1,075	1,375	675	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,600	1,900	1,475
300	1,650	1,650	1,025	1,150	1,075	1,375	700	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,575	1,875	1,475
275	1,650	1,650	1,025	1,150	1,100	1,375	700	950	1,650	1,650	2,550	2,550	8,675	6,575	5,800	5,375	3,375	2,675	2,550	1,875	1,475
250	1,650	1,650	1,025	1,150	1,100	1,400	725	975	1,625	1,625	2,550	2,550	8,600	6,500	5,675	5,350	3,300	2,650	2,525	1,850	1,475
225	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,625	1,625	2,500	2,500	8,000	6,225	5,425	5,100	3,200	2,575	2,500	1,850	1,500
200	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,600	1,600	2,500	2,500	7,750	5,950	5,175	4,875	3,100	2,500	2,475	1,825	1,500
175	1,600	1,600	1,050	1,175	1,100	1,400	750	975	1,600	1,600	2,450	2,450	7,500	5,675	4,925	4,650	2,975	2,400	2,450	1,825	1,500
150	1,575	1,575	1,050	1,175	1,125	1,400	750	975	1,575	1,575	2,450	2,450	7,100	5,400	4,700	4,425	2,875	2,325	2,425	1,800	1,500
125	1,550	1,550	1,050	1,175	1,125	1,400	750	975	1,550	1,550	2,400	2,400	6,750	5,100	4,450	4,200	2,775	2,250	2,400	1,800	1,500
100	1,525	1,525	1,050	1,175	1,125	1,400	750	1,000	1,550	1,550	2,400	2,400	6,400	4,825	4,200	3,975	2,675	2,175	2,375	1,800	1,500
75	1,475	1,475	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,350	2,350	6,050	4,550	3,950	3,725	2,550	2,100	2,350	1,800	1,500
50	1,425	1,425	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,300	2,300	5,600	4,275	3,700	3,500	2,450	2,025	2,350	1,800	1,500
25	1,350	1,350	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	5,300	4,025	3,475	3,300	2,350	1,950	2,325	1,800	1,500
0	1,300	1,300	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	4,850	3,750	3,250	3,100	2,250	1,875	2,300	1,800	1,500

HOB_{fs} = 111 m

Low HOB_{min} = 196 m

High HOB_{min} = 442 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 3.6e.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350							3,700	1,550		6,175			0–10				0–800	
1,300							3,700	1,600		6,150			0–10				0–850	
1,250							3,725	1,625		6,125			0–15				0–950	
1,200							3,750	1,675	0	6,100		0	0–15			0	0–1,000	
1,150							3,750	1,700	300	6,075		0–5	0–25			0–50	0–1,050	
1,100				0			3,775	1,750	450	6,050		0–5	0–30			0–350	0–1,100	
1,050				25			3,775	1,775	550	6,025		0–5	5–40			0–500	50–1,150	
1,000				175			3,800	1,800	650	6,000		0–5	5–60			0–600	350–1,200	
950				300			3,825	1,825	725	5,950		0–10	5–80			0–650	500–1,250	
900				425		0	3,825	1,850	775	5,925		0–10	5–110			0–750	550–1,300	
850	0			550		1,175	3,825	1,875	825	5,875	0	0–15	10–160		0	0–800	650–1,300	
800	150			650		1,225	3,850	1,900	875	5,850	0–5	0–20	10–230		0–50	0–850	700–1,350	
775	225			700		1,225	3,850	1,900	900	5,825	0–5	0–25	15–270		0–200	0–850	750–1,350	
750	275			725	0	1,225	3,850	1,925	925	5,800	0–5	0–30	15–330		0–300	0–900	750–1,400	
725	350			775	800	1,225	3,875	1,925	950	5,775	0–5	0–35	20–410		0–350	0–900	800–1,400	
700	400		0	800	875	1,225	3,875	1,925	950	5,750	0–5	5–45	20–500		0–400	50–950	800–1,400	
675	475		50	850	900	1,225	3,875	1,950	975	5,725	0–10	5–55	25–620		0–450	200–950	850–1,400	
650	600	0	125	875	900	1,225	3,875	1,950	975	5,700	0–10	5–65	35–780		0–500	300–950	850–1,450	
625	825	25	175	900	925	1,250	3,875	1,975	1,025	5,675	0–10	5–80	40–960		0–500	350–1,000	850–1,450	
600	900	50	250	925	925	1,250	3,875	1,975	1,025	5,650	0–15	5–100	50–1,200		0–550	400–1,000	900–1,450	
575	950	100	300	950	925	1,250	3,900	1,975	1,050	5,625	0–15	5–125	60–1,470		0–600	400–1,000	900–1,450	
550	975	150	350	975	950	1,250	3,900	1,975	1,050	5,600	0–20	10–155	75–1,860		0–600	450–1,050	900–1,450	
525	1,000	200	375	1,000	950	1,250	3,900	2,000	1,075	5,575	0–25	10–205	100–2,460		0–600	450–1,050	950–1,500	
500	1,025	225	425	1,000	950	1,250	3,900	2,000	1,075	5,550	5–30	10–250	120–3,000		50–650	500–1,050	950–1,500	
475	1,075	275	450	1,025	950	1,250	3,900	2,000	1,100	5,525	5–45	15–375	180–4,500	0	150–650	550–1,050	950–1,500	0
450	1,100	325	475	1,050	950	1,250	3,900	2,000	1,100	5,500	5–55	20–475	230–5,700	0–5	250–700	550–1,100	1,000–1,500	0–50
425	1,100	350	500	1,075	975	1,250	3,900	2,025	1,100	5,475	5–70	25–625	300–7,500	0–5	300–700	600–1,100	1,000–1,500	0–150
400	1,125	400	525	1,100	975	1,250	3,900	2,025	1,125	5,450	5–90	35–825	400–9,900	0–5	300–700	600–1,100	1,000–1,500	0–200
375	1,150	450	550	1,100	1,000	1,250	3,900	2,025	1,125	5,425	5–120	45–1,080	520–12,900	0–5	350–750	600–1,100	1,000–1,550	0–250
350	1,175	500	575	1,125	1,000	1,250	3,925	2,025	1,125	5,400	10–150	55–1,330	640–15,900	0–5	400–750	650–1,100	1,000–1,550	0–300
325	1,200	575	600	1,150	1,000	1,250	3,925	2,025	1,150	5,350	10–190	70–1,650	800–19,800	0–5	400–750	650–1,150	1,000–1,550	0–350
300	1,225	650	600	1,175	1,025	1,250	3,925	2,050	1,150	5,325	10–215	80–1,950	940–23,400	0–5	400–750	650–1,150	1,050–1,550	0–350
275	1,225	675	625	1,175	1,025	1,250	3,925	2,050	1,150	5,300	15–260	100–2,350	1,130–28,200	0–10	450–800	650–1,150	1,050–1,550	0–400
250	1,250	700	650	1,200	1,025	1,250	3,850	2,025	1,150	5,275	15–310	110–2,750	1,320–33,000	0–10	450–800	700–1,150	1,050–1,550	0–400
225	1,250	725	650	1,200	1,050	1,250	3,700	1,950	1,125	5,225	15–360	130–3,250	1,560–39,000	0–10	450–800	700–1,150	1,050–1,550	0–400
200	1,250	725	675	1,225	1,050	1,250	3,550	1,850	1,075	5,200	20–500	180–4,500	2,160–54,000	0–15	500–800	700–1,150	1,050–1,550	0–450
175	1,250	750	675	1,225	1,075	1,250	3,400	1,775	1,025	5,175	25–610	220–5,500	2,640–66,000	0–15	500–800	700–1,150	1,050–1,550	0–450
150	1,225	750	700	1,225	1,075	1,225	3,275	1,700	975	5,125	35–770	280–7,000	3,360–84,000	0–20	500–800	700–1,150	1,050–1,550	0–450
125	1,225	750	700	1,200	1,050	1,225	3,125	1,600	950	5,100	45–1,020	370–9,250	4,440–111,000	5–25	500–800	700–1,150	1,050–1,550	0–450
100	1,200	725	675	1,175	1,025	1,200	2,975	1,525	900	5,050	FALLOUT GOVERNS							
75	1,150	725	650	1,150	975	1,150	2,825	1,450	850	5,025								
50	1,075	675	600	1,100	925	1,125	2,675	1,375	800	5,000								
25	975	650	525	1,025	875	1,075	2,525	1,275	750	4,950								
0	825	550	450	950	800	975	2,375	1,200	725	4,925								

Figure 3.6e continued.

[1]Long-Range Cannon.

LRC 1

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.

Yield KT	HOB	Estimated radii in meters of 2 rad/hr contour of induced radiation, 1 hour after burst (See note 2.)				Estimated induced radiation intensity, 1 hour after burst, at GZ in rad/hr (See note 2.)			
		Soil type I (Liberia, Africa)	Soil type II (Nevada desert)	Soil type III (lava clay, Hawaii)	Soil type IV (beach sand, Pensacola, Fla)	Soil type I	Soil type II	Soil type III	Soil type IV
CHARLIE/2	Low	100–500	350–700	600–1,050	0–50	5–80	30–700	340–8,400	0–5
	High	0–500	350–700	600–1,050	0	0–35	15–280	140–3,400	0
DELTA/5	Low	200–550	450–800	700–1,150	0–150	10–160	60–1,450	700–17,400	0–150
	High	50–250	450–800	700–1,150	0	5–50	20–450	220–5,400	0
ECHO/10	Low	300–600	500–900	800–1,350	0–250	15–320	120–2,900	1,400–34,800	0–10
	High	200–600	450–900	800–1,350	0–150	5–75	30–650	320–7,800	0–5
FOXTROT/20	Low	350–750	600–1,100	900–1,400	0–300	20–500	180–4,500	2,160–5,4000	0–15
	High	200–700	550–1,000	850–1,400	0–50	5–90	35–780	380–9,360	0–5
GOLF/50	Low	500–800	700–1,150	1,050–1,550	0–450	45–1,020	370–9,250	4,440–111,000	0–25
	High	300–700	600–1,100	1,000–1,500	0–200	5–90	35–825	400–9,900	0–5

NOTES: 1. For description of chemical composition and effects of variations in chemical composition in soil types, See FM 101-31-1, app III, annex F.

2. For range dependent delivery systems, intensities and 2 rad/hr contours are given for minimum ranges.

Figure 3.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	OBSTACLES TO MOVEMENT							CASUALTIES TO EXPOSED PERSONNEL		
	Foot and wheeled vehicle movement				Tracked vehicle movement					
	Type I	Type II	Type III	Type IV	Type I	Types II, IVa(d)	Types III, IVa(f)	Type I	Types II, IVa(d)	Types III, IVa(f)
CHARLIE/2	350	500	550	900	350	500	550	250	400	400
DELTA/5	600	800	900	1,400	600	800	900	400	600	600
ECHO/10	750	1,000	1,100	1,900	750	1,000	1,100	600	800	900
FOXTROT/20	1,050	1,300	1,500	2,400	1,050	1,300	1,500	750	1,000	1,150
GOLF/50	1,650	2,100	2,500	3,900	1,650	2,100	2,500	1,200	1,550	1,700

NOTE: Theae radii apply to all HOB. For general deacription of foreat stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 3.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	AIRCRAFT SAFETY RADII-meters (See note 2.)		
	Light fixed wing	Recon and obsn hel	Transport and util hel
CHARLIE/2	6,000	6,000	5,000
DELTA/5	9,000	9,000	7,000
ECHO/10	10,000	10,000	9,000
FOXTROT/20	13,000	13,000	11,000
GOLF/50	17,000	16,000	15,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of aafety.

Figure 3.7c.

CONTINGENT EFFECTS Tables (continued)
Long-Range Cannon

FIRE AREAS (See note.)

Yield KT	HOB	Expected radii for ignition of wildland fuels during fire season—meters							
		Dry climate (25 percent relative humidity)				Damp climate (75 percent relative humidity)			
		Class I	Class II	Class III	Class IV	Class I	Class II	Class III	Class IV
CHARLIE/2	Air	1,400	1,300	1,000	800	1,300	1,300	1,100	800
DELTA/5	Air	2,000	1,800	1,700	1,400	1,800	1,800	1,500	1,100
ECHO/10	Air	2,600	2,400	2,200	1,800	2,400	2,400	2,100	1,500
FOXTROT/20	Air	3,400	3,200	2,900	2,400	3,200	3,200	2,700	2,000
GOLF/50	Air	4,900	4,500	4,100	3,300	4,500	4,500	3,800	2,900

NOTE: Theae radii apply to all HOB. For deacription of fuel claaaes, aee FM 101-31-1, app III, annex F.

Figure 3.7d.

LRC 1

TACTICAL SYSTEM ACCURACY DATA
Long-Range Cannon

All distances in meters

Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)	Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)
		PE_R	PE_d	PE_h				PE_R	PE_d	PE_h	
3,000	21	15	8	8	45	19,000	132	95	48	48	260
4,000	28	20	10	10	55	20,000	138	100	50	50	270
5,000	35	25	13	13	70	21,000	145	105	53	53	285
6,000	42	30	15	15	85	22,000	152	110	55	55	300
7,000	49	35	18	18	95	23,000	159	115	58	58	315
8,000	56	40	20	20	110	24,000	166	120	60	60	325
9,000	63	45	23	23	125	25,000	173	125	63	63	340
10,000	69	50	25	25	135	26,000	180	130	65	65	355
11,000	76	55	28	28	150	27,000	187	135	68	68	365
12,000	83	60	30	30	165	28,000	194	140	70	70	380
13,000	90	65	33	33	180	29,000	201	145	73	73	395
14,000	97	70	35	35	190	30,000	207	150	75	75	405
15,000	104	75	38	38	205						
16,000	111	80	40	40	220						
17,000	118	85	43	43	230						
18,000	125	90	45	45	245						

[1]Equivalent CEP= $1.2345\ (PE_R^2 + PE_d^2)^{1/2}$.

Figure 3.8.

[1]Long-Range Cannon.

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CHAPTER 4
SMALL FREE ROCKET

4.1 GENERAL

a. Orientation. This chapter contains employment data for the small free rocket with its associated warhead sections fired from a mobile launcher.

b. Weapon characteristics.

(1) *Yields.* The warhead sections for the small free rocket have yields of Alfa/0.5 KT, Bravo/1 KT, Charlie/2 KT, Delta/5 KT, and Echo/10 KT.

(2) *Fuzing.* The fuzing for the small free rocket provides airburst and impact fuzing options. The airburst option is fuzed by time fuzes which are set for the desired time of flight by the delivery unit. Setting the fuze for airburst precludes the use of the impact fuzing system as a backup.

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the small free rocket are 3,000 meters and 25,000 meters.

(2) *Tactical system accuracy.* The horizontal and vertical dispersion errors for the small free rocket are dependent on range. Tactical system accuracy data are contained in figure 4.8.

(3) *Unit carrying capacity.* A small free rocket unit can draw, transport, and store at any one time a total of 25 complete rounds per battalion.

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are considered to be applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

SFR 1

Situation	*Time (minutes)*	*Remarks*
I[1]	30	For situation I, add 20 minutes if warhead section must be removed and a new warhead section with required yield mated to rocket.
II[2]	5	

[1] Situation (high readiness)—the complete round and launcher are in a firing position and survey is completed. Preliminary firing data for a specific target are *not* available. Pre-fire checkouts which can be performed prior to the receipt of a fire mission have been completed. (May be used to engage targets of opportunity within range.)

[2] Situation II (maximum readiness)—firing data for a specific target have been computed and applied to the weapon system. The unit is awaiting an order to fire. (Typical of readiness to engage on-call target.)

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. For an airburst, the fire mission to the unit includes the desired height of burst in meters. For a contact surface burst, an impact option is requested.

[1] Small Free Rocket.

EXPOSED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	300	400	500	600	700	800	900	1,000	400	600	800	1,000	1,200	1,400	1,600	1,800	Prompt	Delayed	(meters)	(meters)
3,000	1,600	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	85	77
4,000	1,600	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	110	94
5,000	1,600	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	135	112
6,000	1,600	.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	650	165	129
7,000	1,600	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	190	147
8,000	1,700	.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	220	164
9,000	1,700	.6/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	600	245	182
10,000	1,700	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	600	270	199
11,000	1,700	.5/.7	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.0/.2	.0/.1	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	275	575	300	217
12,000	1,700	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	250	575	325	234
13,000	1,700	.2/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1		200	550	355	252
14,000	1,800	.1/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		150	525	380	269
15,000	1,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		0	500	405	287
16,000	1,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.6/.8	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		0	475	435	304
17,000	1,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.5/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	450	460	322
18,000	1,800	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	425	490	339
19,000	1,800	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1				.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	400	515	357
20,000	1,900	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.3/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.1			0	350	540	374
21,000	1,900	.0/.4	.0/.3	.0/.2	.0/.1					.2/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1			0	300	570	392
22,000	1,900	.0/.4	.0/.3	.0/.2	.0/.1					.2/.6	.1/.5	.1/.4	.0/.2	.0/.2	.0/.1			0	250	595	409
23,000	1,900	.0/.3	.0/.2	.0/.2	.0/.1					.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	150	625	427
24,000	1,900	.0/.3	.0/.2	.0/.2	.0/.1					.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	650	444
25,000	1,900	.0/.3	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	675	462

Figure 4.1a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	200	300	400	500	600	700	800	900	400	600	800	1,000	1,200	1,400	1,600	1,800	Prompt	Delayed	(meters)	(meters)
3,000	1,600	.9/.9	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	85	137
4,000	1,600	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	110	154
5,000	1,600	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	135	172
6,000	1,600	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	165	189
7,000	1,600	.8/.9	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	600	190	207
8,000	1,600	.8/.9	.6/.8	.5/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	600	220	224
9,000	1,700	.7/.9	.5/.8	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.0/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	275	575	245	242
10,000	1,700	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		225	575	270	259
11,000	1,700	.4/.7	.3/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	.8/.9	.6/.8	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1		200	550	300	277
12,000	1,700	.2/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			.8/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1		125	525	325	294
13,000	1,700	.0/.7	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	500	355	312
14,000	1,700	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	475	380	329
15,000	1,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				.6/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	450	405	347
16,000	1,800	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1				.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	425	435	364
17,000	1,800	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1			0	375	460	382
18,000	1,800	.0/.4	.0/.3	.0/.2	.0/.1					.4/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.1			0	350	490	399
19,000	1,800	.0/.4	.0/.3	.0/.2	.0/.1					.3/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1			0	300	515	417
20,000	1,800	.0/.3	.0/.2	.0/.2	.0/.1					.2/.6	.2/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	225	540	434
21,000	1,900	.0/.3	.0/.2	.0/.1						.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	125	570	452
22,000	1,900	.0/.3	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	595	469
23,000	1,900	.0/.3	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	625	487
24,000	1,900	.0/.2	.0/.2							.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	0	650	504
25,000	1,900	.0/.2	.0/.1							.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	0	675	522

Figure 4.1a(2).

EXPOSED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 300	400	500	600	700	800	900	1,000	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,600	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	85	0
4,000	1,600	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	110	0
5,000	1,600	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	135	0
6,000	1,600	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	165	0
7,000	1,600	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	190	0
8,000	1,700	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	220	0
9,000	1,700	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	245	0
10,000	1,700	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	270	0
11,000	1,700	.7/.9	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	300	0
12,000	1,700	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	325	0
13,000	1,700	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	355	0
14,000	1,800	.5/.8	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	380	0
15,000	1,800	.5/.8	.4/.7	.4/.6	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	405	0
16,000	1,800	.4/.8	.4/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	435	0
17,000	1,800	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	460	0
18,000	1,800	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	490	0
19,000	1,800	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	515	0
20,000	1,900	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.2/.2	.1/.2	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	540	0
21,000	1,900	.2/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.1	.1/.1	425	675	570	0
22,000	1,900	.2/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	595	0
23,000	1,900	.2/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	625	0
24,000	1,900	.1/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	650	0
25,000	2,000	.1/.5	.1/.5	.2/.4	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	675	675	0

[1] Initial effects only. Fallout governs.

Figure 4.1a(3).

SFR 1

[1] Small Free Rocket.

EXPOSED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 500	600	700	800	900	1,000	1,100	1,200
3,000	1,800	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2
4,000	1,800	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2
5,000	1,800	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2
6,000	1,800	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
7,000	1,800	.8/.9	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
8,000	1,900	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
9,000	1,900	.7/.8	.6/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2
10,000	1,900	.6/.8	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2
11,000	1,900	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
12,000	1,900	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
13,000	1,900	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2
14,000	2,000	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2
15,000	2,000	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.2
16,000	2,000	.3/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2
17,000	2,000	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1
18,000	2,000	.2/.5	.1/.4	.1/.4	.1/.3	.0/.2	.0/.2	.0/.2	.0/.1
19,000	2,000	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	
20,000	2,100	.0/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		
21,000	2,100	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		
22,000	2,100	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		
23,000	2,100	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
24,000	2,100	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			
25,000	2,100	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			

Range (meters)	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	85	83
4,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	110	100
5,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	775	135	118
6,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	750	165	135
7,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	190	153
8,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	220	170
9,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	500	725	245	188
10,000	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	500	725	270	205
11,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	475	725	300	223
12,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	700	325	240
13,000	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	675	355	258
14,000	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	675	380	275
15,000	.7/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	650	405	293
16,000	.6/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	435	310
17,000	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	300	625	460	328
18,000	.6/.8	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	250	600	490	345
19,000	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		200	575	515	363
20,000	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		75	550	540	380
21,000	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		0	500	570	398
22,000	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	475	595	415
23,000	.3/.6	.2/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	450	625	433
24,000	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	400	650	450
25,000	.2/.6	.2/.4	.1/.3	.0/.3	.0/.2	.0/.1			0	350	675	468

Figure 4.1b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100
3,000	1,800	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
4,000	1,800	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
5,000	1,800	.9/.9	.8/.9	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2
6,000	1,800	.9/.9	.7/.9	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.2
7,000	1,800	.9/.9	.7/.8	.6/.7	.4/.6	.3/.4	.2/.4	.2/.3	.1/.2
8,000	1,900	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
9,000	1,900	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
10,000	1,900	.7/.9	.6/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2
11,000	1,900	.6/.8	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2
12,000	1,900	.6/.8	.4/.7	.3/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2
13,000	1,900	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2
14,000	1,900	.4/.7	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.2
15,000	2,000	.3/.6	.2/.5	.2/.4	.1/.4	.1/.3	.0/.2	.0/.2	.0/.2
16,000	2,000	.2/.6	.2/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1
17,000	2,000	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1
18,000	2,000	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	
19,000	2,000	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	
20,000	2,000	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		
21,000	2,100	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		
22,000	2,100	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		
23,000	2,100	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			
24,000	2,100	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			
25,000	2,100	.0/.2	.0/.2	.0/.2	.0/.1				

Range (meters)	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	550	775	85	158
4,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	525	750	110	175
5,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	525	750	135	193
6,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	500	750	165	210
7,000	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	500	725	190	228
8,000	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	475	725	220	245
9,000	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	700	245	263
10,000	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	425	700	270	280
11,000	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	400	675	300	298
12,000	.9/.9	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	375	650	325	315
13,000	.9/.9	.7/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	350	650	355	333
14,000	.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	300	625	380	350
15,000	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.1	275	600	405	368
16,000	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	200	575	435	385
17,000	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	100	550	460	403
18,000	.6/.9	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	0	525	490	420
19,000	.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	475	515	438
20,000	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	450	540	455
21,000	.4/.8	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.1		0	400	570	473
22,000	.3/.7	.3/.6	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	350	595	490
23,000	.2/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	300	625	508
24,000	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	225	650	525
25,000	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	100	675	543

Figure 4.1b(2).

EXPOSED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES										
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	400	600	800	1,000	1,200	1,400	1,600		600	800	1,000	1,200	1,400	1,600	1,800	2,000	Prompt	Delayed	(meters)	(meters)
3,000	1,800	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	85	0
4,000	1,800	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	110	0
5,000	1,800	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	135	0
6,000	1,800	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	165	0
7,000	1,800	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	190	0
8,000	1,900	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	220	0
9,000	1,900	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	245	0
10,000	1,900	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	270	0
11,000	1,900	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	300	0
12,000	1,900	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	325	0
13,000	1,900	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	355	0
14,000	2,000	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	380	0
15,000	2,000	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	405	0
16,000	2,000	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.7/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.2	.1/.2	.1/.2	575	775	435	0
17,000	2,000	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.7/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	460	0
18,000	2,000	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.7/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	490	0
19,000	2,100	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1		.7/.8	.6/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	515	0
20,000	2,100	.5/.8	.4/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1		.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	540	0
21,000	2,100	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	570	0
22,000	2,100	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	595	0
23,000	2,100	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	625	0
24,000	2,100	.4/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	650	0
25,000	2,200	.3/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.5/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	775	675	0

[1]Initial effects only. Fallout governs.

SFR 1

Figure 4.1b(3).

[1]Small Free Rocket.

EXPOSED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	700	800	900	1,000	1,100	1,200	1,300	DELAYED CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	2,300	.8/.8	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	85	91
4,000	2,300	.8/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	110	108
5,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	600	875	135	126
6,000	2,300	.7/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	875	165	143
7,000	2,300	.7/.8	.6/.7	.5/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	190	161
8,000	2,400	.7/.8	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	850	220	178
9,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	850	245	196
10,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	550	825	270	213
11,000	2,400	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	825	300	231
12,000	2,400	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	500	825	325	248
13,000	2,400	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	475	800	355	266
14,000	2,500	.4/.6	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	450	775	380	283
15,000	2,500	.4/.6	.3/.5	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	.6/.8	.5/.6	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	775	405	301
16,000	2,500	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	750	435	318
17,000	2,500	.3/.5	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.1/.2	.0/.1	.6/.8	.4/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	375	750	460	336
18,000	2,500	.2/.5	.2/.4	.1/.4	.1/.3	.1/.2	.1/.2	.0/.2	.0/.1	.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	325	725	490	353
19,000	2,500	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2	.0/.1	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	275	700	515	371
20,000	2,600	.1/.4	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.1		.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1	225	675	540	388
21,000	2,600	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1	125	650	570	406
22,000	2,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.4/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.2	.0/.1	0	625	595	423
23,000	2,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		0	600	625	441
24,000	2,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	575	650	458
25,000	2,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	525	675	476

Figure 4.1c(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 500	600	700	800	900	1,000	1,100	1,200	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	2,300	.9/.9	.7/.8	.6/.7	.5/.5	.3/.4	.3/.4	.2/.3	.2/.3	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	875	85	185
4,000	2,300	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	575	850	110	202
5,000	2,300	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	135	220
6,000	2,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	550	850	165	237
7,000	2,300	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	525	825	190	255
8,000	2,400	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	525	825	220	272
9,000	2,400	.7/.8	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	500	800	245	290
10,000	2,400	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	475	800	270	307
11,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	775	300	325
12,000	2,400	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	425	775	325	342
13,000	2,400	.4/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	400	750	355	360
14,000	2,500	.4/.6	.3/.5	.2/.4	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	350	725	380	370
15,000	2,500	.3/.6	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.1	.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	300	700	405	395
16,000	2,500	.2/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.2	.0/.1	.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	250	700	435	412
17,000	2,500	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	175	675	460	430
18,000	2,500	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.6/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	50	650	490	447
19,000	2,500	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	0	600	515	465
20,000	2,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.5/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	0	575	540	482
21,000	2,600	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	550	570	500
22,000	2,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.4/.7	.3/.6	.2/.4	.2/.3	.1/.3	.1/.2	.0/.2	.0/.1	0	525	595	517
23,000	2,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.2	.0/.1	0	475	625	535
24,000	2,600	.0/.3	.0/.2	.0/.2	.0/.1					.3/.7	.2/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	425	650	552
25,000	2,600	.0/.2	.0/.2	.0/.2	.0/.1					.3/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	375	675	570

Figure 4.1c(2).

EXPOSED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o (meters)	Height of burst (meters)
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)											
		400	600	800	1,000	1,200	1,400	1,600	1,800	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Prompt	Delayed		
3,000	1,900	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	85	0
4,000	1,900	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	110	0
5,000	1,900	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	135	0
6,000	1,900	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	165	0
7,000	1,900	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	190	0
8,000	1,900	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	220	0
9,000	2,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	245	0
10,000	2,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	270	0
11,000	2,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1	625	900	300	0
12,000	2,000	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	325	0
13,000	2,000	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	355	0
14,000	2,100	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	380	0
15,000	2,100	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	405	0
16,000	2,100	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	435	0
17,000	2,100	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	460	0
18,000	2,100	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	490	0
19,000	2,100	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	515	0
20,000	2,200	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	540	0
21,000	2,200	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	570	0
22,000	2,200	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	595	0
23,000	2,200	.5/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	625	0
24,000	2,200	.4/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	650	0
25,000	2,200	.4/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.5/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	625	900	675	0

[1]Initial effects only. Fallout governs.

Figure 4.1c(3).

SFR 1

[1]Small Free Rocket.

EXPOSED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800			Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	3,300	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			775	1,025	85	105
4,000	3,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			775	1,025	110	122
5,000	3,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			775	1,025	135	140
6,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			775	1,025	165	157
7,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			750	1,025	190	175
8,000	3,400	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			750	1,000	220	192
9,000	3,400	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			750	1,000	245	210
10,000	3,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			725	1,000	270	227
11,000	3,400	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			725	975	300	245
12,000	3,500	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			700	975	325	262
13,000	3,500	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			675	975	355	280
14,000	3,500	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			675	950	380	297
15,000	3,500	.7/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			650	950	405	315
16,000	3,500	.6/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.1		.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			625	925	435	332
17,000	3,500	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.1		.7/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1			600	900	460	350
18,000	3,600	.6/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.7/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1			575	900	490	367
19,000	3,600	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1			550	875	515	385
20,000	3,600	.5/.7	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1		.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1			525	850	540	402
21,000	3,600	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1			500	850	570	420
22,000	3,600	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1			475	825	595	437
23,000	3,600	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1			425	800	625	455
24,000	3,700	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.1			.5/.8	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			375	775	650	472
25,000	3,700	.2/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1			.5/.7	.3/.5	.2/.3	.1/.2	.0/.1				325	750	675	490

Figure 4.1d(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 500	700	900	1,100	1,300	1,500	1,700	1,900	DELAYED CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800		Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	3,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		750	1,000	85	233
4,000	3,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		750	1,000	110	250
5,000	3,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		725	1,000	135	268
6,000	3,300	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		725	975	165	285
7,000	3,400	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		700	975	190	303
8,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		700	975	220	320
9,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		675	950	245	338
10,000	3,400	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1		650	950	270	355
11,000	3,400	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1		625	925	300	373
12,000	3,400	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1		625	925	325	390
13,000	3,500	.7/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1		600	900	355	408
14,000	3,500	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.2/.4	.1/.2	.1/.2	.0/.1		575	875	380	425
15,000	3,500	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.1		.9/.9	.7/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		550	875	405	443
16,000	3,500	.6/.8	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1		500	850	435	460
17,000	3,500	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1		475	825	460	478
18,000	3,500	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			425	800	490	495
19,000	3,600	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1			400	775	515	513
20,000	3,600	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1			.8/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.1			325	750	540	530
21,000	3,600	.2/.6	.2/.5	.1/.3	.0/.3	.0/.2	.0/.1			.8/.9	.5/.8	.3/.5	.2/.3	.1/.2	.1/.1			275	725	570	548
22,000	3,600	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.1			.8/.9	.5/.7	.3/.5	.1/.3	.1/.2	.0/.1			175	700	595	565
23,000	3,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.1/.3	.1/.2	.0/.1			0	675	625	583
24,000	3,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.4/.7	.3/.4	.1/.3	.1/.2	.0/.1			0	650	650	600
25,000	3,700	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				.6/.9	.4/.7	.2/.4	.1/.3	.0/.2	.0/.1			0	600	675	618

Figure 4.1d(2).

EXPOSED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES										
		Target radius (meters)								Target radius (meters)							(meters)			
(meters)	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	400	800	1,200	1,600	2,000	2,400	2,800	Prompt	Delayed	(meters)	(meters)
3,000	2,100	.9/.9	.8/.8	.6/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	85	0
4,000	2,100	.9/.9	.8/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	110	0
5,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	135	0
6,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	165	0
7,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	190	0
8,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	220	0
9,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	245	0
10,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	270	0
11,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	300	0
12,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	325	0
13,000	2,300	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	355	0
14,000	2,300	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	380	0
15,000	2,300	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	405	0
16,000	2,400	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	435	0
17,000	2,400	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	460	0
18,000	2,400	.7/.9	.6/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	490	0
19,000	2,400	.7/.9	.6/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	515	0
20,000	2,400	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	540	0
21,000	2,400	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	570	0
22,000	2,500	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	595	0
23,000	2,500	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	625	0
24,000	2,500	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	650	0
25,000	2,500	.5/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	675	0

[1]Initial effects only. Fallout governs.

Figure 4.1d(3).

SFR 1

[1]Small Free Rocket.

EXPOSED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200		Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	4,100	.9/.9	.8/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	85	118
4,000	4,100	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	110	135
5,000	4,200	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	135	153
6,000	4,200	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	165	170
7,000	4,200	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	190	188
8,000	4,200	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,125	220	205
9,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,125	245	223
10,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,125	270	240
11,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		875	1,125	300	258
12,000	4,300	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		875	1,100	325	275
13,000	4,300	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		850	1,100	355	293
14,000	4,300	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		850	1,075	380	310
15,000	4,300	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		850	1,075	405	328
16,000	4,300	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		825	1,050	435	345
17,000	4,400	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		725	1,050	460	363
18,000	4,400	.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		700	1,025	490	380
19,000	4,400	.7/.9	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		675	1,025	515	398
20,000	4,400	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		650	1,000	540	415
21,000	4,400	.6/.8	.5/.7	.3/.6	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		625	975	570	433
22,000	4,500	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.1/.2	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		600	975	595	.450
23,000	4,500	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			575	950	625	468
24,000	4,500	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			550	925	650	485
25,000	4,500	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.1		.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			500	900	675	503

Figure 4.1e(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	4,100	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	85	280
4,000	4,100	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	110	297
5,000	4,200	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,125	135	315
6,000	4,200	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,100	165	332
7,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,100	190	350
8,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	220	367
9,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	245	385
10,000	4,200	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	825	1,050	270	402
11,000	4,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	725	1,050	300	420
12,000	4,300	.8/.9	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	700	1,025	325	437
13,000	4,300	.8/.9	.6/.8	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	675	1,025	355	455
14,000	4,300	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	650	1,000	380	472
15,000	4,300	.7/.9	.5/.7	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	975	405	490
16,000	4,300	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		600	975	435	507
17,000	4,400	.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		575	950	460	525
18,000	4,400	.5/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		550	925	490	542
19,000	4,400	.5/.8	.3/.6	.2/.5	.1/.3	.1/.3	.1/.2	.0/.2	.0/.1	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		590	900	515	560
20,000	4,400	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.9	.5/.6	.3/.4	.1/.3	.1/.2	.0/.1		450	875	540	577
21,000	4,400	.3/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		425	850	570	595
22,000	4,400	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		.9/.9	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		350	825	595	612
23,000	4,500	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		275	800	625	630
24,000	4,500	.1/.6	.1/.5	.0/.3	.0/.3	.0/.2	.0/.1			.8/.9	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		200	775	650	647
25,000	4,500	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.8/.9	.5/.8	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1		0	750	675	665

Figure 4.1e(2).

EXPOSED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	DELAYED CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	2,700	.8/.9	.7/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	85	0
4,000	2,700	.8/.9	.7/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	110	0
5,000	2,700	.8/.9	.7/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	135	0
6,000	2,700	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	165	0
7,000	2,700	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	190	0
8,000	2,700	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	220	0
9,000	2,800	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	245	0
10,000	2,800	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	270	0
11,000	2,800	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	300	0
12,000	2,800	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	325	0
13,000	2,800	.7/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	355	0
14,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	380	0
15,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	405	0
16,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	435	0
17,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	460	0
18,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	490	0
19,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	515	0
20,000	3,000	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	540	0
21,000	3,000	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	570	0
22,000	3,000	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	595	0
23,000	3,000	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	625	0
24,000	3,000	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	650	0
25,000	3,000	.5/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	675	0

[1]Initial effects only. Fallout governs.

Figure 4.1e(3).

SFR 1

[1]Small Free Rocket.

PROTECTED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 100	200	300	400	500	600	700	800	DELAYED CASUALTIES — Target radius (meters) 200	400	600	800	1,000	1,200	1,400	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,600	.9/.9	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	275	500	85	77
4,000	1,600	.9/.9	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.6	.3/.4	.2/.2	.1/.2	.1/.1	275	475	110	94
5,000	1,600	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	250	475	135	112
6,000	1,600	.9/.9	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	225	475	165	129
7,000	1,600	.8/.9	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	200	450	190	147
8,000	1,700	.6/.8	.4/.7	.3/.5	.2/.4	.1/.2	.0/.2	.0/.1		.9/.9	.7/.9	.5/.6	.2/.4	.1/.2	.1/.2	.0/.1	175	450	220	164
9,000	1,700	.3/.7	.2/.6	.2/.5	.1/.3	.0/.2	.0/.1			.9/.9	.7/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1	125	425	245	182
10,000	1,700	.0/.6	.0/.3	.0/.1						.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1		50	400	270	199
11,000	1,700	.0/.6	.0/.2	.0/.1						.8/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.1		0	375	300	217
12,000	1,700	.0/.5	.0/.2	.0/.1						.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.0/.1		0	350	325	234
13,000	1,700	.0/.4	.0/.2	.0/.1						.6/.9	.4/.7	.3/.4	.1/.3	.1/.2	.0/.1		0	325	355	252
14,000	1,800	.0/.4	.0/.2	.0/.1						.5/.8	.4/.6	.2/.4	.1/.3	.0/.2	.0/.1		0	300	380	269
15,000	1,800	.0/.3	.0/.1							.4/.8	.3/.6	.2/.4	.1/.2	.0/.2	.0/.1		0	250	405	287
16,000	1,800	.0/.3	.0/.1							.2/.7	.2/.5	.1/.4	.0/.2	.0/.1			0	200	435	304
17,000	1,800	.0/.3	.0/.1							.0/.6	.1/.5	.0/.3	.0/.2	.0/.1			0	125	460	322
18,000	1,800	.0/.2	.0/.1							.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	0	490	339
19,000	1,800	.0/.2	.0/.1							.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	515	357
20,000	1,900	.0/.2	.0/.1							.0/.4	.0/.4	.0/.2	.0/.2	.0/.1			0	0	540	374
21,000	1,900	.0/.2	.0/.1							.0/.4	.0/.3	.0/.2	.0/.1				0	0	570	392
22,000	1,900	.0/.2	.0/.1							.0/.3	.0/.3	.0/.2	.0/.1				0	0	595	409
23,000	1,900	.0/.1								.0/.3	.0/.3	.0/.2	.0/.1				0	0	625	427
24,000	1,900	.0/.1								.0/.3	.0/.2	.0/.2	.0/.1				0	0	650	444
25,000	1,900	.0/.1								.0/.2	.0/.2	.0/.1					0	0	675	462

Figure 4.2a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 100	200	300	400	500	600	700	DELAYED CASUALTIES — Target radius (meters) 200	400	600	800	1,000	1,200	1,400	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,600	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.1	.9/.9	.9/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	250	475	85	137
4,000	1,600	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	225	450	110	154
5,000	1,600	.9/.9	.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1	200	450	135	172
6,000	1,600	.7/.9	.5/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1	.9/.9	.8/.9	.5/.6	.2/.3	.1/.2	.1/.2	.0/.1	175	425	165	189
7,000	1,600	.4/.8	.3/.6	.1/.4	.0/.3	.0/.2	.0/.1		.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		125	425	190	207
8,000	1,600	.0/.8	.0/.6	.0/.4	.0/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		0	400	220	224
9,000	1,700	.0/.7	.0/.5	.0/.3	.0/.2	.0/.1			.9/.9	.6/.8	.3/.5	.2/.3	.1/.2	.0/.1		0	375	245	242
10,000	1,700	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			.8/.9	.5/.7	.3/.5	.1/.3	.1/.2	.0/.1		0	350	270	259
11,000	1,700	.0/.5	.0/.4	.0/.2	.0/.1				.7/.9	.5/.7	.3/.4	.1/.3	.1/.2	.0/.1		0	325	300	277
12,000	1,700	.0/.5	.0/.3	.0/.2	.0/.1				.6/.8	.4/.6	.2/.4	.1/.2	.0/.2	.0/.1		0	300	325	294
13,000	1,700	.0/.4	.0/.3	.0/.2	.0/.1				.4/.8	.3/.6	.1/.4	.0/.2	.0/.2	.0/.1		0	250	355	312
14,000	1,700	.0/.3	.0/.2	.0/.1					.2/.7	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		0	200	380	329
15,000	1,800	.0/.3	.0/.2	.0/.1					.1/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		0	100	405	347
16,000	1,800	.0/.3	.0/.2	.0/.1					.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	435	364
17,000	1,800	.0/.2	.0/.2	.0/.1					.0/.5	.0/.4	.0/.2	.0/.2	.0/.2	.0/.1		0	0	460	382
18,000	1,800	.0/.2	.0/.1						.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	490	399
19,000	1,800	.0/.2	.0/.1						.0/.4	.0/.3	.0/.2	.0/.1				0	0	515	417
20,000	1,800	.0/.2	.0/.1						.0/.3	.0/.3	.0/.2	.0/.1				0	0	540	434
21,000	1,900	.0/.1							.0/.3	.0/.2	.0/.2	.0/.1				0	0	570	452
22,000	1,900	.0/.1							.0/.3	.0/.2	.0/.1					0	0	595	469
23,000	1,900	.0/.1							.0/.2	.0/.2	.0/.1					0	0	625	487
24,000	1,900	.0/.1							.0/.2	.0/.2	.0/.1					0	0	650	504
25,000	1,900	.0/.1							.0/.2	.0/.1						0	0	675	522

Figure 4.2a(2).

PROTECTED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 100	200	300	400	500	600	700	800	DELAYED CASUALTIES — Target radius (meters) 200	400	600	800	1,000	1,200	1,400	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,600	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	300	500	85	0
4,000	1,600	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	300	500	110	0
5,000	1,600	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	300	500	135	0
6,000	1,600	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	300	500	165	0
7,000	1,600	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	300	500	190	0
8,000	1,700	.8/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	220	0
9,000	1,700	.8/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	245	0
10,000	1,700	.7/.9	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	270	0
11,000	1,700	.6/.8	.5/.8	.4/.6	.3/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	300	0
12,000	1,700	.5/.8	.4/.7	.4/.6	.3/.5	.3/.3	.2/.3	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	325	0
13,000	1,700	.4/.8	.3/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	355	0
14,000	1,800	.3/.7	.3/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	380	0
15,000	1,800	.2/.7	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	405	0
16,000	1,800	.1/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	300	500	435	0
17,000	1,800	.0/.6	.1/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	300	500	460	0
18,000	1,800	.0/.6	.1/.5	.1/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	300	500	490	0
19,000	1,800	.0/.5	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.3/.5	.3/.4	.2/.3	.1/.2	.1/.1	300	500	515	0
20,000	1,900	.0/.5	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.3/.5	.3/.4	.2/.3	.1/.2	.1/.1	300	500	540	0
21,000	1,900	.0/.5	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	.4/.8	.4/.7	.3/.5	.3/.4	.2/.2	.1/.2	.1/.1	300	500	570	0
22,000	1,900	.0/.5	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	.4/.8	.3/.7	.3/.5	.2/.4	.2/.2	.1/.2	.1/.1	300	500	595	0
23,000	1,900	.0/.4	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.1	.3/.7	.3/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	300	500	625	0
24,000	1,900	.0/.4	.0/.4	.0/.3	.0/.3	.1/.3	.1/.2	.1/.2	.1/.1	.2/.7	.2/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	300	500	650	0
25,000	2,000	.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	.2/.7	.2/.6	.2/.5	.2/.3	.2/.2	.1/.2	.1/.1	300	500	675	0

[1]Initial effects only. Fallout governs.

SFR 1

Figure 4.2a(3).

[1]Small Free Rocket.

PROTECTED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 200	300	400	500	600	700	800	900	DELAYED CASUALTIES — Target radius (meters) 200	400	600	800	1,000	1,200	1,400	1,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,900	.9/.9	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	575	85	83
4,000	1,900	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	375	575	110	100
5,000	2,000	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	575	135	118
6,000	2,000	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	350	550	165	135
7,000	2,000	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	350	550	190	153
8,000	2,000	.8/.9	.7/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	325	525	220	170
9,000	2,000	.7/.9	.6/.8	.5/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	300	525	245	188
10,000	2,100	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.0/.2	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	275	500	270	205
11,000	2,100	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	.9/.9	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	500	300	223
12,000	2,100	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		200	475	325	240
13,000	2,100	.2/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		150	450	355	258
14,000	2,100	.0/.7	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		50	425	380	275
15,000	2,100	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			.7/.9	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		0	400	405	293
16,000	2,200	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			.6/.8	.4/.7	.3/.5	.2/.4	.1/.2	.0/.2	.0/.1		0	375	435	310
17,000	2,200	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.5/.8	.4/.7	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	325	460	328
18,000	2,200	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				.3/.7	.3/.6	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		0	275	490	345
19,000	2,200	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1				.2/.7	.2/.6	.2/.4	.0/.3	.0/.2	.0/.1			0	225	515	363
20,000	2,200	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.0/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	150	540	380
21,000	2,200	.0/.4	.0/.3	.0/.2	.0/.1					.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	570	398
22,000	2,300	.0/.4	.0/.3	.0/.2	.0/.1					.0/.5	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	0	595	415
23,000	2,300	.0/.3	.0/.2	.0/.2	.0/.1					.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	625	433
24,000	2,300	.0/.3	.0/.2	.0/.2	.0/.1					.0/.4	.0/.4	.0/.3	.0/.2	.0/.1				0	0	650	450
25,000	2,300	.0/.3	.0/.2	.0/.1						.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				0	0	675	468

Figure 4.2b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 100	200	300	400	500	600	700	800	DELAYED CASUALTIES — Target radius (meters) 200	400	600	800	1,000	1,200	1,400	1,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,900	.9/.9	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	375	550	85	158
4,000	1,900	.9/.9	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	350	550	110	175
5,000	2,000	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	325	550	135	193
6,000	2,000	.9/.9	.9/.9	.7/.8	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	300	525	165	210
7,000	2,000	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	275	500	190	228
8,000	2,000	.8/.9	.7/.9	.5/.7	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	500	220	245
9,000	2,000	.7/.9	.5/.8	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		225	475	245	263
10,000	2,000	.4/.8	.3/.7	.3/.6	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		175	450	270	280
11,000	2,100	.1/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			.9/.9	.7/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		75	425	300	298
12,000	2,100	.0/.7	.0/.6	.0/.4	.0/.2	.0/.2	.0/.1			.8/.9	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		0	400	325	315
13,000	2,100	.0/.7	.0/.5	.0/.3	.0/.2	.0/.1				.7/.9	.5/.8	.3/.5	.2/.4	.1/.2	.0/.2	.0/.1		0	375	355	333
14,000	2,100	.0/.6	.0/.5	.0/.3	.0/.2	.0/.1				.6/.9	.4/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	350	380	350
15,000	2,100	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				.5/.8	.3/.7	.2/.5	.1/.3	.0/.2	.0/.1			0	300	405	368
16,000	2,100	.0/.5	.0/.4	.0/.3	.0/.1					.3/.8	.3/.6	.2/.4	.0/.3	.0/.2	.0/.1			0	250	435	385
17,000	2,200	.0/.5	.0/.3	.0/.2	.0/.1					.1/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	175	460	403
18,000	2,200	.0/.4	.0/.3	.0/.2	.0/.1					.0/.6	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	0	490	420
19,000	2,200	.0/.4	.0/.3	.0/.2	.0/.1					.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	0	515	438
20,000	2,200	.0/.3	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	540	455
21,000	2,200	.0/.3	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	570	473
22,000	2,200	.0/.3	.0/.2	.0/.1						.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	0	595	490
23,000	2,300	.0/.2	.0/.2	.0/.1						.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	0	625	508
24,000	2,300	.0/.2	.0/.2	.0/.1						.0/.3	.0/.3	.0/.2	.0/.1					0	0	650	525
25,000	2,300	.0/.2	.0/.1							.0/.3	.0/.2	.0/.2	.0/.1					0	0	675	543

Figure 4.2b(2).

IMPACT Burst
Produces fallout

Range	*Minimum safe distance*[1] *(negligible risk, UnW Ex)*	*FRACTION OF TARGET COVERED* *In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.*															*Probable minimum* R_D		*Offset distance* d_o	*Height of burst*
		PROMPT CASUALTIES								**DELAYED CASUALTIES**							*(meters)*			
		Target radius (meters)								*Target radius (meters)*										
(meters)	*(meters)*	300	400	500	600	700	800	900	1,000	400	600	800	1,000	1,200	1,400	1,600	**Prompt**	**Delayed**	*(meters)*	*(meters)*
3,000	1,900	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	85	0
4,000	1,900	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	110	0
5,000	2,000	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	135	0
6,000	2,000	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	165	0
7,000	2,000	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	190	0
8,000	2,000	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	220	0
9,000	2,000	.7/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	245	0
10,000	2,100	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	270	0
11,000	2,100	.6/.8	.5/.7	.4/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	300	0
12,000	2,100	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	325	0
13,000	2,100	.5/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	355	0
14,000	2,100	.5/.8	.4/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.7/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	380	0
15,000	2,100	.5/.8	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.7/.9	.5/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	400	600	405	0
16,000	2,200	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	600	435	0
17,000	2,200	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	600	460	0
18,000	2,200	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	600	490	0
19,000	2,200	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	600	515	0
20,000	2,200	.2/.6	.2/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	600	540	0
21,000	2,200	.2/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	600	570	0
22,000	2,300	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	400	600	595	0
23,000	2,300	.1/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.4/.7	.4/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	400	600	625	0
24,000	2,300	.1/.5	.1/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	600	650	0
25,000	2,300	.1/.5	.1/.5	.1/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.4/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	600	675	0

[1]Initial effects only. Fallout governs.

Figure 4.2b(3).

SFR 1

[1]Small Free Rocket.

PROTECTED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100
3,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2
4,000	2,300	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
5,000	2,300	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
6,000	2,300	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
7,000	2,300	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
8,000	2,400	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
9,000	2,400	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1
10,000	2,400	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1
11,000	2,400	.5/.7	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1
12,000	2,400	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	
13,000	2,400	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	
14,000	2,500	.2/.5	.2/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	
15,000	2,500	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		
16,000	2,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		
17,000	2,500	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
18,000	2,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			
19,000	2,500	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			
20,000	2,600	.0/.3	.0/.2	.0/.2	.0/.1				
21,000	2,600	.0/.2	.0/.2	.0/.2	.0/.1				
22,000	2,600	.0/.2	.0/.2	.0/.1					
23,000	2,600	.0/.2	.0/.2	.0/.1					
24,000	2,600	.0/.2	.0/.1						
25,000	2,600	.0/.1							

Range (meters)	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	450	675	85	91
4,000	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	450	675	110	108
5,000	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	675	135	126
6,000	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	165	143
7,000	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	400	650	190	161
8,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	625	220	178
9,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	625	245	196
10,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	600	270	213
11,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	600	300	231
12,000	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	575	325	248
13,000	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	575	355	266
14,000	.7/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	200	550	380	283
15,000	.7/.9	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		150	525	405	301
16,000	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1		0	500	435	318
17,000	.6/.8	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	475	460	336
18,000	.5/.8	.4/.6	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1		0	450	490	353
19,000	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	400	515	371
20,000	.4/.7	.3/.6	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	375	540	388
21,000	.3/.7	.2/.5	.2/.4	.1/.3	.0/.2	.0/.1			0	325	570	406
22,000	.2/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1			0	275	595	423
23,000	.1/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	175	625	441
24,000	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	650	458
25,000	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	675	476

Figure 4.2c(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 300	400	500	600	700	800	900	1,000
3,000	2,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2
4,000	2,300	.9/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2
5,000	2,300	.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2
6,000	2,300	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.1
7,000	2,300	.6/.8	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
8,000	2,400	.5/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1
9,000	2,400	.4/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1
10,000	2,400	.3/.6	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	
11,000	2,400	.1/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	
12,000	2,400	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.1		
13,000	2,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		
14,000	2,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1			
15,000	2,500	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
16,000	2,500	.0/.3	.0/.3	.0/.2	.0/.1				
17,000	2,500	.0/.3	.0/.2	.0/.2	.0/.1				
18,000	2,500	.0/.2	.0/.2	.0/.1					
19,000	2,500	.0/.2	.0/.1						
20,000	2,500	.0/.2	.0/.1						
21,000	2,600	.0/.1							
22,000	2,600	.0/.1							
23,000	2,600	.0/.1							
24,000	2,600	.0/.1							
25,000	2,600	.0/.1							

Range (meters)	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	425	650	85	185
4,000	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	400	650	110	202
5,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	650	135	220
6,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	650	165	237
7,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	625	190	255
8,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	625	220	272
9,000	.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	275	625	245	290
10,000	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		225	600	270	307
11,000	.8/.9	.6/.8	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		175	600	300	325
12,000	.8/.9	.5/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		100	575	325	342
13,000	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	575	355	360
14,000	.6/.8	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		0	550	380	377
15,000	.6/.8	.4/.6	.3/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	550	405	395
16,000	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	525	435	412
17,000	.4/.7	.3/.6	.2/.4	.1/.3	.0/.2	.0/.1			0	500	460	430
18,000	.3/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1			0	475	490	447
19,000	.2/.6	.2/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	450	515	465
20,000	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	425	540	482
21,000	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	400	570	500
22,000	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	400	595	517
23,000	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	375	625	535
24,000	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	350	650	552
25,000	.0/.4	.0/.3	.0/.2	.0/.1					0	325	675	570

Figure 4.2c(2).

PROTECTED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 300	400	500	600	700	800	900	1,000	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,900	.9/.9	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	85	0
4,000	1,900	.9/.9	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	110	0
5,000	1,900	.9/.9	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	135	0
6,000	1,900	.9/.9	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	165	0
7,000	1,900	.9/.9	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	190	0
8,000	1,900	.8/.9	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	220	0
9,000	2,000	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	245	0
10,000	2,000	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	270	0
11,000	2,000	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	300	0
12,000	2,000	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	325	0
13,000	2,000	.6/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	355	0
14,000	2,100	.6/.8	.5/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	380	0
15,000	2,100	.6/.8	.5/.8	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	405	0
16,000	2,100	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.8/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	475	675	435	0
17,000	2,100	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.3	.2/.2	.8/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.2	.1/.1	.1/.2	475	675	460	0
18,000	2,100	.4/.8	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	475	675	490	0
19,000	2,100	.4/.8	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	475	675	515	0
20,000	2,200	.4/.7	.3/.6	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.7/.9	.5/.8	.4/.6	.3/.4	.3/.3	.2/.2	.1/.2	.1/.2	475	675	540	0
21,000	2,200	.3/.7	.3/.6	.3/.5	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.6/.9	.5/.7	.4/.6	.3/.4	.3/.3	.2/.2	.1/.2	.1/.2	475	675	570	0
22,000	2,200	.3/.7	.3/.6	.3/.5	.3/.4	.2/.4	.2/.3	.2/.3	.2/.2	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.2	.1/.2	.1/.2	475	675	595	0
23,000	2,200	.2/.6	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.3	.2/.2	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	475	675	625	0
24,000	2,200	.2/.6	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.3	.1/.2	.5/.8	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	475	675	650	0
25,000	2,200	.2/.6	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.3	.1/.2	.5/.8	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	475	675	675	0

[1]Initial effecta only. Fallout governe.

Figure 4.2c(3).

SFR 1

[1]Small Free Rocket.

PROTECTED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 500	600	700	800	900	1,000	1,100	1,200
3,000	3,300	.9/.9	.8/.8	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
4,000	3,300	.9/.9	.8/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
5,000	3,300	.8/.9	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
6,000	3,400	.8/.9	.7/.8	.6/.7	.5/.6	.3/.4	.3/.4	.2/.3	.2/.3
7,000	3,400	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3
8,000	3,400	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2
9,000	3,400	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
10,000	3,400	.7/.8	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
11,000	3,400	.7/.8	.6/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
12,000	3,500	.6/.8	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.1/.3	.1/.2
13,000	3,500	.6/.8	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2
14,000	3,500	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
15,000	3,500	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2
16,000	3,500	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.1/.2
17,000	3,500	.3/.6	.3/.5	.2/.4	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2
18,000	3,600	.3/.6	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2
19,000	3,600	.2/.5	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1
20,000	3,600	.1/.5	.1/.4	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1
21,000	3,600	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1
22,000	3,600	.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	
23,000	3,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	
24,000	3,700	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		
25,000	3,700	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		

Range (meters)	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	85	105
4,000	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	110	122
5,000	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	600	800	135	140
6,000	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	575	800	165	157
7,000	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	575	775	190	175
8,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	775	220	192
9,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	550	775	245	210
10,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	525	750	270	227
11,000	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	500	750	300	245
12,000	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	500	725	325	262
13,000	.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	475	725	355	280
14,000	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	450	700	380	297
15,000	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	425	675	405	315
16,000	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	650	435	332
17,000	.6/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	650	460	350
18,000	.6/.8	.5/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	300	625	490	367
19,000	.5/.8	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	250	600	515	385
20,000	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.0/.2	.0/.1	175	575	540	402
21,000	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.2	.0/.1	25	550	570	420
22,000	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	500	595	437
23,000	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	475	625	455
24,000	.3/.6	.2/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	425	650	472
25,000	.2/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	375	675	490

Figure 4.2d(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100
3,000	3,300	.9/.9	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3
4,000	3,300	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
5,000	3,300	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
6,000	3,300	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3
7,000	3,400	.8/.9	.7/.8	.6/.7	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2
8,000	3,400	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2
9,000	3,400	.8/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2
10,000	3,400	.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2
11,000	3,400	.6/.8	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2
12,000	3,400	.5/.8	.4/.7	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2
13,000	3,500	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2
14,000	3,500	.3/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2
15,000	3,500	.2/.6	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.1
16,000	3,500	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1
17,000	3,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	
18,000	3,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	
19,000	3,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		
20,000	3,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		
21,000	3,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		
22,000	3,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			
23,000	3,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			
24,000	3,600	.0/.2	.0/.2	.0/.2	.0/.1				
25,000	3,700	.0/.2	.0/.2	.0/.1					

Range (meters)	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	550	775	85	233
4,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	550	775	110	250
5,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	525	750	135	268
6,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	525	750	165	285
7,000	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	500	725	190	303
8,000	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	475	725	220	320
9,000	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	700	245	338
10,000	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	425	675	270	355
11,000	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	400	675	300	373
12,000	.9/.9	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	350	650	325	390
13,000	.8/.9	.7/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	325	625	355	408
14,000	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	275	600	380	425
15,000	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	200	575	405	443
16,000	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	100	550	435	460
17,000	.7/.9	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	0	525	460	478
18,000	.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	475	490	495
19,000	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1	0	450	515	513
20,000	.4/.8	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1		0	400	540	530
21,000	.3/.7	.3/.6	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		0	350	570	548
22,000	.2/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	275	595	565
23,000	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	175	625	583
24,000	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	650	600
25,000	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1			0	0	675	618

Figure 4.2d(2).

PROTECTED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) [c] 400	600	800	1,000	1,200	1,400	1,600	1,800	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	2,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	85	0
4,000	2,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	110	0
5,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	135	0
6,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	165	0
7,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	190	0
8,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	220	0
9,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	245	0
10,000	2,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	270	0
11,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	300	0
12,000	2,300	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	325	0
13,000	2,300	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	355	0
14,000	2,300	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	625	825	380	0
15,000	2,300	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	405	0
16,000	2,400	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	625	825	435	0
17,000	2,400	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	625	825	460	0
18,000	2,400	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.7	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	625	825	490	0
19,000	2,400	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	625	825	515	0
20,000	2,400	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	625	825	540	0
21,000	2,400	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	625	825	570	0
22,000	2,500	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	625	825	595	0
23,000	2,500	.5/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	625	825	625	0
24,000	2,500	.4/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	625	825	650	0
25,000	2,500	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.5/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	625	825	675	0

[1]Initial effects only. Fallout governs.

Figure 4.2d(3).

SFR 1

[1]Small Free Rocket.

PROTECTED Personnel Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	2,000	2,400	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	4,100	.9/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.1/.2	.1/.1	700	900	85	118
4,000	4,100	.8/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.1/.2	.1/.1	675	900	110	135
5,000	4,200	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.3/.3	.1/.2	.1/.1	675	900	135	153
6,000	4,200	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	675	900	165	170
7,000	4,200	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	650	875	190	188
8,000	4,200	.8/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	650	875	220	205
9,000	4,200	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	625	875	245	223
10,000	4,200	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	625	850	270	240
11,000	4,300	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	600	850	300	258
12,000	4,300	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	600	825	325	275
13,000	4,300	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	575	825	355	293
14,000	4,300	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	550	800	380	310
15,000	4,300	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	525	800	405	328
16,000	4,300	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.1		.8/.9	.6/.8	.5/.6	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1	500	775	435	345
17,000	4,400	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.0/.1	475	750	460	363
18,000	4,400	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.0/.1	450	725	490	380
19,000	4,400	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.0/.1	400	725	515	398
20,000	4,400	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2			.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.0/.1	350	700	540	415
21,000	4,400	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1			.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	.0/.1	300	675	570	433
22,000	4,500	.1/.5	.1/.4	.0/.3	.0/.2	.0/.1			.6/.8	.4/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	250	650	595	450
23,000	4,500	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1			.5/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	175	625	625	468
24,000	4,500	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1		0	575	650	485
25,000	4,500	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1		0	550	675	503

Figure 4.2e(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
3,000	4,100	.8/.9	.6/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	625	875	85	280
4,000	4,100	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	850	110	297
5,000	4,200	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	850	135	315
6,000	4,200	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	600	825	165	332
7,000	4,200	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	575	825	190	350
8,000	4,200	.7/.8	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1		.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	550	800	220	367
9,000	4,200	.6/.8	.4/.5	.2/.4	.1/.2	.1/.2	.1/.1		.9/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	525	800	245	385
10,000	4,200	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	500	775	270	402
11,000	4,300	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	475	750	300	420
12,000	4,300	.5/.7	.3/.4	.1/.3	.1/.2	.1/.1			.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	450	725	325	437
13,000	4,300	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1			.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	400	725	355	455
14,000	4,300	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1			.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	350	700	380	472
15,000	4,300	.3/.5	.1/.4	.1/.2	.0/.2	.0/.1			.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	300	675	405	490
16,000	4,300	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1			.7/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	250	650	435	507
17,000	4,400	.1/.5	.0/.3	.0/.2	.0/.1				.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	175	625	460	525
18,000	4,400	.0/.4	.0/.3	.0/.2	.0/.1				.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	0	575	490	542
19,000	4,400	.0/.4	.0/.3	.0/.2	.0/.1				.5/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	550	515	560
20,000	4,400	.0/.3	.0/.2	.0/.2	.0/.1				.5/.7	.3/.6	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.1	0	500	540	577
21,000	4,400	.0/.3	.0/.2	.0/.1					.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		0	475	570	595
22,000	4,400	.0/.3	.0/.2	.0/.1					.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	425	595	612
23,000	4,500	.0/.3	.0/.2	.0/.1					.3/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	350	625	630
24,000	4,500	.0/.2	.0/.2	.0/.1					.2/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	275	650	647
25,000	4,500	.0/.2	.0/.1						.0/.6	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		0	175	675	665

Figure 4.2e(2).

PROTECTED Personnel Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000
3,000	2,700	.9/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
4,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
5,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
6,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
7,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
8,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
9,000	2,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
10,000	2,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
11,000	2,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
12,000	2,800	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
13,000	2,800	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
14,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
15,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
16,000	2,900	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
17,000	2,900	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
18,000	2,900	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
19,000	2,900	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
20,000	3,000	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
21,000	3,000	.5/.8	.4/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
22,000	3,000	.5/.8	.4/.6	.3/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
23,000	3,000	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
24,000	3,000	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1
25,000	3,000	.4/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1

DELAYED CASUALTIES — Target radius (meters) 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	85	0
.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	110	0
.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	135	0
.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	165	0
.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	190	0
.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	220	0
.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	245	0
.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	270	0
.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	300	0
.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	325	0
.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	355	0
.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	380	0
.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	405	0
.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	435	0
.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	460	0
.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	490	0
.7/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	515	0
.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	540	0
.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	570	0
.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	595	0
.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	625	0
.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	650	0
.5/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	700	925	675	0

[1]Initial effects only. Fallout governs.

SFR 1

Figure 4.2e(3).

[1]Small Free Rocket.

MATERIEL Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	50	100	150	200	250	300	350	400	(meters)	100	150	200	250					(meters)	(meters)	(meters)
3,000	1,600	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	175	.1/.5	.0/.3	.0/.2	.0/.1					50	85	77
4,000	1,600	.9/.9	.7/.9	.6/.8	.4/.6	.3/.4	.3/.4	.2/.3	.1/.2	150	.0/.3	.0/.2	.0/.1						0	110	94
5,000	1,600	.2/.8	.2/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	50	.0/.2	.0/.1							0	135	112
6,000	1,600	.0/.7	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.1								0	165	129
7,000	1,600	.0/.6	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	.0/.1								0	190	147
8,000	1,700	.0/.4	.0/.4	.0/.3	.0/.2	.0/.1				0	.0/.1								0	220	164
9,000	1,700	.0/.3	.0/.3	.0/.2	.0/.1					0	.0/.1								0	245	182
10,000	1,700	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1								0	270	199
11,000	1,700	.0/.2	.0/.2	.0/.1						0									0	300	217
12,000	1,700	.0/.1								0									0	325	234
13,000	1,700	.0/.1								0									0	355	252
14,000	1,800	.0/.1								0									0	380	269
15,000	1,800	.0/.1								0									0	405	287
16,000	1,800	.0/.1								0									0	435	304
17,000	1,800	.0/.1								0									0	460	322
18,000	1,800	.0/.1								0									0	490	339
19,000	1,800	.0/.1								0									0	515	357
20,000	1,900	.0/.1								0									0	540	374
21,000	1,900									0									0	570	392
22,000	1,900									0									0	595	409
23,000	1,900									0									0	625	427
24,000	1,900									0									0	650	444
25,000	1,900									0									0	675	462

Figure 4.3a(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	50	100	150	200	250	300			(meters)	100								(meters)	(meters)	(meters)
3,000	1,600	.2/.8	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			25	.0/.1								0	185	137
4,000	1,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0									0	110	154
5,000	1,600	.0/.3	.0/.3	.0/.2	.0/.1					0									0	135	172
6,000	1,600	.0/.2	.0/.2	.0/.1						0									0	165	189
7,000	1,600	.0/.2	.0/.1							0									0	190	207
8,000	1,600	.0/.1								0									0	220	224
9,000	1,700	.0/.1								0									0	245	242
10,000	1,700	.0/.1								0									0	270	259
11,000	1,700	.0/.1								0									0	300	277
12,000	1,700	.0/.1								0									0	325	294
13,000	1,700									0									0	355	312
14,000	1,700									0									0	380	329
15,000	1,800									0									0	405	347
16,000	1,800									0									0	435	364
17,000	1,800									0									0	460	382
18,000	1,800									0									0	490	399
19,000	1,800									0									0	515	417
20,000	1,800									0									0	540	434
21,000	1,900									0									0	570	452
22,000	1,900									0									0	595	469
23,000	1,900									0									0	625	487
24,000	1,900									0									0	650	504
25,000	1,900									0									0	675	522

Figure 4.3a(2).

Range (meters)	*Minimum safe distance*[1] *(negligible risk, UnW Ex)* (meters)	*FRACTION OF TARGET COVERED* *In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.*																	*Offset distance* d_o (meters)	*Height of burst* (meters)
		WHEELED VEHICLES									**TANKS AND ARTILLERY**									
		Target radius (meters)								Prob min R_D	*Target radius (meters)*								Prob min R_D	
		50	100	150	200	250	300	350	400	(meters)	50	100	150	200	250				(meters)	
3,000	1,600	.9/.9	.7/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	125	.6/.8	.4/.6	.3/.3	.1/.2	.1/.1				100	85	0
4,000	1,600	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	125	.3/.7	.3/.5	.2/.3	.1/.2	.1/.1				100	110	0
5,000	1,600	.5/.8	.4/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	125	.1/.6	.2/.5	.2/.3	.1/.2	.1/.1				100	135	0
6,000	1,600	.3/.7	.3/.7	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	125	.0/.5	.1/.4	.1/.3	.1/.2	.1/.1				100	165	0
7,000	1,600	.1/.6	.2/.6	.2/.5	.2/.4	.2/.3	.1/.2	.1/.1		125	.0/.4	.0/.3	.1/.3	.1/.2	.1/.1				100	190	0
8,000	1,700	.0/.6	.1/.5	.1/.4	.2/.3	.2/.3	.1/.2	.1/.1		125	.0/.3	.0/.3	.0/.2	.1/.2	.1/.1				100	220	0
9,000	1,700	.0/.5	.0/.5	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1		125	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				100	245	0
10,000	1,700	.0/.4	.0/.4	.0/.4	.1/.3	.1/.2	.1/.2	.1/.1		125	.0/.2	.0/.2	.0/.2	.0/.1					100	270	0
11,000	1,700	.0/.4	.0/.4	.0/.3	.0/.3	.1/.2	.1/.2	.1/.1		125	.0/.2	.0/.2	.0/.2	.0/.1					100	300	0
12,000	1,700	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.1/.2	.1/.1		125	.0/.2	.0/.2	.0/.1						100	325	0
13,000	1,800	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		125	.0/.2	.0/.1							100	355	0
14,000	1,800	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		125	.0/.1								100	380	0
15,000	1,800	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			125	.0/.1								100	405	0
16,000	1,800	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			125	.0/.1								100	435	0
17,000	1,800	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				125	.0/.1								100	460	0
18,000	1,800	.0/.2	.0/.2	.0/.2	.0/.1					125	.0/.1								100	490	0
19,000	1,800	.0/.2	.0/.2	.0/.1						125	.0/.1								100	515	0
20,000	1,900	.0/.2	.0/.1							125	.0/.1								100	540	0
21,000	1,900	.0/.1								125	.0/.1								100	570	0
22,000	1,900	.0/.1								125	.0/.1								100	595	0
23,000	1,900	.0/.1								125									100	625	0
24,000	1,900	.0/.1								125									100	650	0
25,000	2,000	.0/.1								125									100	675	0

[1]Initial effects only. Fallout governs.

Figure 4.3a(3).

SFR 1

[1]Small Free Rocket.

MATERIEL Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 100	150	200	250	300	350	400	450	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 100	150	200	250	300	350			Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,900	.9/.9	.9/.9	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	225	.5/.8	.2/.6	.1/.4	.1/.3	.0/.2	.0/.1			75	85	83
4,000	1,900	.9/.9	.8/.9	.7/.9	.6/.7	.4/.6	.3/.5	.2/.4	.2/.3	225	.1/.6	.0/.3	.0/.2	.0/.1					50	110	100
5,000	2,000	.8/.9	.7/.9	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.3	175	.0/.4	.0/.2	.0/.1						0	135	118
6,000	2,000	.4/.8	.2/.7	.1/.6	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	75	.0/.3	.0/.2	.0/.1						0	165	135
7,000	2,000	.0/.8	.0/.7	.0/.6	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	25	.0/.2	.0/.1							0	190	153
8,000	2,000	.0/.7	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	0	.0/.2	.0/.1							0	220	170
9,000	2,000	.0/.5	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.1								0	245	188
10,000	2,100	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1								0	270	205
11,000	2,100	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	300	223
12,000	2,100	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	325	240
13,000	2,100	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1								0	355	258
14,000	2,100	.0/.2	.0/.2	.0/.1						0	.0/.1								0	380	275
15,000	2,100	.0/.2	.0/.2	.0/.1						0	.0/.1								0	405	293
16,000	2,200	.0/.2	.0/.1							0									0	435	310
17,000	2,200	.0/.1								0									0	460	328
18,000	2,200	.0/.1								0									0	490	345
19,000	2,200	.0/.1								0									0	515	363
20,000	2,200	.0/.1								0									0	540	380
21,000	2,200	.0/.1								0									0	570	398
22,000	2,300	.0/.1								0									0	595	415
23,000	2,300	.0/.1								0									0	625	433
24,000	2,300	.0/.1								0									0	650	450
25,000	2,300	.0/.1								0									0	675	468

Figure 4.3b(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 100	150	200	250	300	350	400	450	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 100								Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,900	.7/.9	.3/.8	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	100	.0/.1								0	85	158
4,000	1,900	.1/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			25									0	110	175
5,000	2,000	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				0									0	135	193
6,000	2,000	.0/.3	.0/.2	.0/.2	.0/.1					0									0	165	210
7,000	2,000	.0/.2	.0/.2	.0/.1						0									0	190	228
8,000	2,000	.0/.2	.0/.1							0									0	220	245
9,000	2,000	.0/.1								0									0	245	263
10,000	2,000	.0/.1								0									0	270	280
11,000	2,100	.0/.1								0									0	300	298
12,000	2,100	.0/.1								0									0	325	315
13,000	2,100	.0/.1								0									0	355	333
14,000	2,100	.0/.1								0									0	380	350
15,000	2,100	.0/.1								0									0	405	368
16,000	2,100	.0/.1								0									0	435	385
17,000	2,200									0									0	460	403
18,000	2,200									0									0	490	420
19,000	2,200									0									0	515	438
20,000	2,200									0									0	540	455
21,000	2,200									0									0	570	473
22,000	2,200									0									0	595	490
23,000	2,300									0									0	625	508
24,000	2,300									0									0	650	525
25,000	2,300									0									0	675	543

Figure 4.3b(2).

MATERIEL Targets
Small Free Rocket
IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 50	100	150	200	250	300	350	400	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 50	100	150	200	250	300	350	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	1,900	.9/.9	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	175	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	125	85	0
4,000	1,900	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	175	.6/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	125	110	0
5,000	2,000	.8/.9	.7/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	175	.4/.8	.3/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	125	135	0
6,000	2,000	.7/.9	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	175	.2/.7	.2/.6	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	125	165	0
7,000	2,000	.5/.8	.4/.8	.4/.7	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	175	.0/.6	.1/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	125	190	0
8,000	2,000	.3/.8	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	175	.0/.5	.0/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	125	220	0
9,000	2,000	.1/.7	.2/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	175	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.1		125	245	0
10,000	2,100	.0/.6	.1/.6	.1/.5	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	175	.0/.4	.0/.3	.0/.3	.0/.2	.1/.2	.1/.1		125	270	0
11,000	2,100	.0/.6	.0/.5	.1/.5	.1/.4	.1/.4	.2/.3	.1/.2	.1/.2	175	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.1/.1		125	300	0
12,000	2,100	.0/.5	.0/.5	.0/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	175	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		125	325	0
13,000	2,100	.0/.5	.0/.4	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	175	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		125	355	0
14,000	2,100	.0/.4	.0/.4	.0/.4	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	175	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			125	380	0
15,000	2,100	.0/.4	.0/.4	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	175	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			125	405	0
16,000	2,200	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.1/.2	175	.0/.2	.0/.2	.0/.2	.0/.1				125	435	0
17,000	2,200	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	175	.0/.2	.0/.2	.0/.1					125	460	0
18,000	2,200	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	175	.0/.2	.0/.1						125	490	0
19,000	2,200	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	175	.0/.1							125	515	0
20,000	2,200	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	175	.0/.1							125	540	0
21,000	2,200	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2		175	.0/.1							125	570	0
22,000	2,300	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		175	.0/.1							125	595	0
23,000	2,300	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			175	.0/.1							125	625	0
24,000	2,300	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				175	.0/.1							125	650	0
25,000	2,300	.0/.2	.0/.2	.0/.2	.0/.1					175	.0/.1							125	675	0

[1]Initial effects only. Fallout governs.

Figure 4.3b(3).

SFR 1

[1]Small Free Rocket.

MATERIEL Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES Target radius (meters) 350	400	450	500	550	600	650	700	Prob min R_D (meters)	TANKS AND ARTILLERY Target radius (meters) 100	150	200	250	300	350	400	450	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	2,300	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	325	.9/.9	.7/.9	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	150	85	91
4,000	2,300	.6/.8	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	300	.5/.8	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	100	110	108
5,000	2,300	.5/.7	.4/.6	.3/.5	.2/.3	.2/.3	.2/.3	.1/.2	.1/.2	275	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2		50	135	126
6,000	2,300	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.3	.1/.2	.1/.2	250	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			25	165	143
7,000	2,300	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2	150	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				0	190	161
8,000	2,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	75	.0/.4	.0/.2	.0/.2	.0/.1					0	220	178
9,000	2,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		25	.0/.3	.0/.2	.0/.1						0	245	196
10,000	2,400	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.2	.0/.1						0	270	213
11,000	2,400	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.2	.0/.1							0	300	231
12,000	2,400	.0/.2	.0/.2	.0/.1						0	.0/.2	.0/.1							0	325	248
13,000	2,400	.0/.2	.0/.1							0	.0/.1								0	355	266
14,000	2,500	.0/.1								0	.0/.1								0	380	283
15,000	2,500	.0/.1								0	.0/.1								0	405	301
16,000	2,500	.0/.1								0	.0/.1								0	435	318
17,000	2,500	.0/.1								0	.0/.1								0	460	336
18,000	2,500	.0/.1								0	.0/.1								0	490	353
19,000	2,500	.0/.1								0	.0/.1								0	515	371
20,000	2,600	.0/.1								0	.0/.1								0	540	388
21,000	2,600									0	.0/.1								0	570	406
22,000	2,600									0	.0/.1								0	595	423
23,000	2,600									0									0	625	441
24,000	2,600									0									0	650	458
25,000	2,600									0									0	675	476

Figure 4.3c(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES Target radius (meters) 200	250	300	350	400	450	500	550	Prob min R_D (meters)	TANKS AND ARTILLERY Target radius (meters) 100	150	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	2,300	.8/.9	.7/.8	.6/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	225	.0/.2	.0/.1	0	85	185
4,000	2,300	.3/.8	.2/.7	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	100	.0/.1		0	110	202
5,000	2,300	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	50	.0/.1		0	135	220
6,000	2,300	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1		0	165	237
7,000	2,300	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0			0	190	255
8,000	2,400	.0/.2	.0/.2	.0/.1						0			0	220	272
9,000	2,400	.0/.2	.0/.1							0			0	245	290
10,000	2,400	.0/.1								0			0	270	307
11,000	2,400	.0/.1								0			0	300	325
12,000	2,400	.0/.1								0			0	325	342
13,000	2,400	.0/.1								0			0	355	360
14,000	2,500	.0/.1								0			0	380	377
15,000	2,500									0			0	405	395
16,000	2,500									0			0	435	412
17,000	2,500									0			0	460	430
18,000	2,500									0			0	490	447
19,000	2,500									0			0	515	465
20,000	2,500									0			0	540	482
21,000	2,600									0			0	570	500
22,000	2,600									0			0	595	517
23,000	2,600									0			0	625	535
24,000	2,600									0			0	650	552
25,000	2,600									0			0	675	570

Figure 4.3c(2).

Range (meters)	*Minimum safe distance*[1] *(negligible risk, UnW Ex)* (meters)	*FRACTION OF TARGET COVERED* *In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.*																	*Offset distance* d_o (meters)	*Height of burst* (meters)
		WHEELED VEHICLES									**TANKS AND ARTILLERY**									
		Target radius (meters)								*Prob min* R_D	*Target radius (meters)*								*Prob min* R_D	
		150	200	250	300	350	400	450	500	*(meters)*	50	100	150	200	250	300	350	400	*(meters)*	
3,000	1,900	.9/.9	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	225	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	150	85	0
4,000	1,900	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	225	.8/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	150	110	0
5,000	1,900	.8/.9	.7/.8	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	225	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	150	135	0
6,000	1,900	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	225	.5/.8	.4/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	150	165	0
7,000	1,900	.6/.8	.5/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	225	.3/.7	.3/.7	.3/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	150	190	0
8,000	1,900	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	225	.1/.7	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	150	220	0
9,000	2,000	.4/.8	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	225	.0/.6	.1/.5	.1/.5	.1/.4	.2/.3	.2/.2	.1/.2	.1/.2	150	245	0
10,000	2,000	.4/.7	.3/.6	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	225	.0/.5	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	150	270	0
11,000	2,000	.2/.7	.2/.6	.3/.5	.3/.4	.2/.4	.2/.3	.2/.3	.2/.2	225	.0/.5	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	150	300	0
12,000	2,000	.2/.6	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.3	.1/.2	225	.0/.4	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.1	150	325	0
13,000	2,000	.1/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	225	.0/.4	.0/.4	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.1	150	355	0
14,000	2,100	.1/.5	.1/.5	.1/.4	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	225	.0/.4	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	150	380	0
15,000	2,100	.0/.5	.1/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	225	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.1/.1	150	405	0
16,000	2,100	.0/.5	.0/.4	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	225	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	150	435	0
17,000	2,100	.0/.4	.0/.4	.1/.3	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		150	460	0
18,000	2,100	.0/.4	.0/.4	.0/.3	.0/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		150	490	0
19,000	2,100	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	225	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			150	515	0
20,000	2,200	.0/.3	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	225	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			150	540	0
21,000	2,200	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	225	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				150	570	0
22,000	2,200	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	225	.0/.2	.0/.2	.0/.2	.0/.1					150	595	0
23,000	2,200	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	.0/.2	.0/.2	.0/.1						150	625	0
24,000	2,200	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	.0/.2	.0/.1							150	650	0
25,000	2,200	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	.0/.1								150	675	0

[1] Initial effects only. Fallout governs.

Figure 4.3c(3).

SFR 1

[1] Small Free Rocket.

MATERIEL Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	300	400	500	600	700	800	900	1,000	(meters)	100	200	300	400	500	600	700	800	(meters)	(meters)	(meters)
3,000	3,300	.9/.9	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	500	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	275	85	105
4,000	3,300	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	475	.9/.9	.8/.9	.4/.7	.2/.4	.1/.3	.1/.2	.0/.1		200	110	122
5,000	3,300	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	450	.8/.9	.5/.8	.2/.6	.1/.4	.1/.3	.0/.2	.0/.1		150	135	140
6,000	3,400	.9/.9	.8/.9	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	425	.5/.8	.3/.7	.1/.5	.0/.3	.0/.2	.0/.1			125	165	157
7,000	3,400	.8/.9	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	400	.2/.7	.1/.5	.0/.3	.0/.2	.0/.1				75	190	175
8,000	3,400	.8/.9	.6/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	375	.0/.6	.0/.2	.0/.1						25	220	192
9,000	3,400	.6/.8	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	275	.0/.5	.0/.2	.0/.1						0	245	210
10,000	3,400	.4/.8	.2/.7	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	175	.0/.4	.0/.1							0	270	227
11,000	3,400	.1/.7	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	100	.0/.4	.0/.1							0	300	245
12,000	3,500	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	50	.0/.2	.0/.1							0	325	262
13,000	3,500	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.2	.0/.1							0	355	280
14,000	3,500	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.1							0	380	297
15,000	3,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1								0	405	315
16,000	3,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	435	332
17,000	3,500	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.1								0	460	350
18,000	3,600	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1								0	490	367
19,000	3,600	.0/.2	.0/.2	.0/.1						0	.0/.1								0	515	385
20,000	3,600	.0/.2	.0/.2	.0/.1						0	.0/.1								0	540	402
21,000	3,600	.0/.2	.0/.1							0	.0/.1								0	570	420
22,000	3,600	.0/.1								0	.0/.1								0	595	437
23,000	3,600	.0/.1								0	.0/.1								0	625	455
24,000	3,700	.0/.1								0									0	650	472
25,000	3,700	.0/.1								0									0	675	490

Figure 4.3d(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	200	300	400	500	600	700	800	900	(meters)	100	150	200	250					(meters)	(meters)	(meters)
3,000	3,300	.9/.9	.9/.9	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	375	.2/.6	.0/.3	.0/.2	.0/.1					50	85	233
4,000	3,300	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	325	.0/.4	.0/.2	.0/.1						0	110	250
5,000	3,300	.7/.9	.4/.8	.2/.7	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	200	.0/.3	.0/.1							0	135	268
6,000	3,300	.3/.8	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	125	.0/.2	.0/.1							0	165	285
7,000	3,400	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		50	.0/.1								0	190	303
8,000	3,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1								0	220	320
9,000	3,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				0	.0/.1								0	245	338
10,000	3,400	.0/.3	.0/.3	.0/.2	.0/.1					0	.0/.1								0	270	355
11,000	3,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1								0	300	373
12,000	3,400	.0/.2	.0/.2	.0/.1						0	.0/.1								0	325	390
13,000	3,500	.0/.2	.0/.1							0									0	355	408
14,000	3,500	.0/.1								0									0	380	425
15,000	3,500	.0/.1								0									0	405	443
16,000	3,500	.0/.1								0									0	435	460
17,000	3,500	.0/.1								0									0	460	478
18,000	3,500	.0/.1								0									0	490	495
19,000	3,600	.0/.1								0									0	515	513
20,000	3,600									0									0	540	530
21,000	3,600									0									0	570	548
22,000	3,600									0									0	595	565
23,000	3,600									0									0	625	583
24,000	3,600									0									0	650	600
25,000	3,700									0									0	675	618

Figure 4.3d(2).

MATERIEL Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	200	300	400	500	600	700	800	900	(meters)	150	200	250	300	350	400	450	500	(meters)	(meters)	(meters)
3,000	2,100	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.9/.9	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	225	85	0
4,000	2,100	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	225	110	0
5,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.8/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	225	135	0
6,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	225	165	0
7,000	2,200	.8/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	225	190	0
8,000	2,200	.8/.9	.6/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	225	220	0
9,000	2,200	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.4/.7	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	225	245	0
10,000	2,300	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.3/.7	.3/.6	.3/.5	.3/.4	.2/.4	.2/.3	.2/.2	.1/.2	225	270	0
11,000	2,300	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.2/.6	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	225	300	0
12,000	2,300	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.2/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	225	325	0
13,000	2,300	.4/.8	.4/.7	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.1/.5	.1/.5	.2/.4	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	225	355	0
14,000	2,300	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.5	.1/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	225	380	0
15,000	2,300	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.5	.0/.4	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	225	405	0
16,000	2,400	.2/.7	.2/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.4	.0/.4	.1/.4	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	435	0
17,000	2,400	.2/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.4	.0/.4	.0/.3	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	460	0
18,000	2,400	.1/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.4	.0/.3	.0/.3	.0/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	490	0
19,000	2,400	.1/.6	.1/.5	.2/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	225	515	0
20,000	2,400	.1/.5	.1/.5	.1/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	225	540	0
21,000	2,400	.0/.5	.1/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	225	570	0
22,000	2,500	.0/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	595	0
23,000	2,500	.0/.5	.0/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	625	0
24,000	2,500	.0/.4	.0/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	650	0
25,000	2,500	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	225	675	0

[1] Initial effects only. Fallout governs.

Figure 4.3d(3).

SFR[1]

[1] Small Free Rocket.

MATERIEL Targets
Small Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 600	700	800	900	1,000	1,100	1,200	1,300	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 200	300	400	500	600	700	800	900	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	4,100	.8/.9	.7/.8	.6/.6	.5/.5	.3/.4	.3/.4	.2/.3	.2/.3	650	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	375	85	118
4,000	4,100	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	650	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	350	110	135
5,000	4,200	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	625	.9/.9	.7/.9	.4/.7	.3/.5	.2/.3	.1/.3	.1/.2	.0/.1	275	135	153
6,000	4,200	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	600	.7/.9	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	225	165	170
7,000	4,200	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	575	.5/.8	.3/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1		175	190	188
8,000	4,200	.7/.8	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	550	.3/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		150	220	205
9,000	4,200	.6/.8	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2	525	.2/.6	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1			100	245	223
10,000	4,200	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	500	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				50	270	240
11,000	4,300	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	450	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1				0	300	258
12,000	4,300	.3/.6	.2/.5	.2/.4	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	275	.0/.5	.0/.3	.0/.2	.0/.1					0	325	275
13,000	4,300	.1/.6	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	200	.0/.4	.0/.3	.0/.2	.0/.1					0	355	293
14,000	4,300	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	125	.0/.3	.0/.2	.0/.1						0	380	310
15,000	4,300	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	75	.0/.3	.0/.2	.0/.1						0	405	328
16,000	4,300	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		0	.0/.3	.0/.2	.0/.1						0	435	345
17,000	4,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.2	.0/.1						0	460	363
18,000	4,400	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.1							0	490	380
19,000	4,400	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.2	.0/.1							0	515	398
20,000	4,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.2	.0/.1							0	540	415
21,000	4,400	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.2	.0/.1							0	570	433
22,000	4,500	.0/.2	.0/.2	.0/.1						0	.0/.1								0	595	450
23,000	4,500	.0/.2	.0/.2	.0/.1						0	.0/.1								0	625	468
24,000	4,500	.0/.2	.0/.1							0	.0/.1								0	650	485
25,000	4,500	.0/.1								0	.0/.1								0	675	503

Figure 4.3e(1).

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 400	500	600	700	800	900	1,000	1,100	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 200	300	400	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
3,000	4,100	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	525	.2/.5	.1/.2	.0/.1	100	85	280
4,000	4,100	.9/.9	.8/.9	.6/.8	.5/.6	.3/.5	.3/.4	.2/.3	.2/.2	500	.0/.4	.0/.2	.0/.1	50	110	297
5,000	4,200	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	450	.0/.3	.0/.1		0	135	315
6,000	4,200	.5/.8	.3/.7	.2/.6	.1/.5	.1/.4	.1/.3	.0/.2	.0/.2	275	.0/.2	.0/.1		0	165	332
7,000	4,200	.2/.7	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	200	.0/.1			0	190	350
8,000	4,200	.1/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	125	.0/.1			0	220	367
9,000	4,200	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		75	.0/.1			0	245	385
10,000	4,200	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1			0	270	402
11,000	4,300	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1			0	300	420
12,000	4,300	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1			0	325	437
13,000	4,300	.0/.2	.0/.2	.0/.2	.0/.1					0				0	355	455
14,000	4,300	.0/.2	.0/.2	.0/.1						0				0	380	472
15,000	4,300	.0/.2	.0/.1							0				0	405	490
16,000	4,300	.0/.1								0				0	435	507
17,000	4,400	.0/.1								0				0	460	525
18,000	4,400	.0/.1								0				0	490	542
19,000	4,400	.0/.1								0				0	515	560
20,000	4,400	.0/.1								0				0	540	577
21,000	4,400	.0/.1								0				0	570	595
22,000	4,500	.0/.1								0				0	595	612
23,000	4,500	.0/.1								0				0	625	630
24,000	4,500	.0/.1								0				0	650	647
25,000	4,500									0				0	675	665

Figure 4.3e(2).

MATERIEL Targets
Small Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o (meters)	Height of burst (meters)
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
		400	500	600	700	800	900	1,000	1,100		100	200	300	400	500	600	700	800		
3,000	2,700	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	300	85	0
4,000	2,700	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	300	110	0
5,000	2,700	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	300	135	0
6,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	300	165	0
7,000	2,700	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	300	190	0
8,000	2,700	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.8/.9	.6/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	300	220	0
9,000	2,800	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.7/.9	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	300	245	0
10,000	2,800	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.7/.9	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	300	270	0
11,000	2,800	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.6/.8	.4/.8	.4/.6	.3/.4	.3/.3	.2/.2	.1/.2	.1/.1	300	300	0
12,000	2,800	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.5/.8	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	325	0
13,000	2,800	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.4/.8	.3/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	355	0
14,000	2,900	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.2/.7	.2/.7	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	380	0
15,000	2,900	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.2/.7	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	405	0
16,000	2,900	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.1/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	435	0
17,000	2,900	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.6	.1/.5	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	460	0
18,000	2,900	.4/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.6	.1/.5	.1/.5	.1/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	490	0
19,000	2,900	.3/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	300	515	0
20,000	3,000	.3/.6	.3/.5	.3/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	540	0
21,000	3,000	.2/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	570	0
22,000	3,000	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	595	0
23,000	3,000	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.4	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	625	0
24,000	3,000	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.4	.0/.4	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.1	300	650	0
25,000	3,000	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.4	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	300	675	0

[1]Initial effects only. Fallout governs.

Figure 4.3e(3).

SFR[1]

[1]Small Free Rocket.

Troop Safety Distances—Meters
Small Free-Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	800
4,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
5,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
6,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,100	900
7,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,100	900
8,000	1,700	1,400	1,100	1,700	1,400	1,100	1,400	1,200	900
9,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
10,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
11,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
12,000	1,700	1,500	1,200	1,700	1,500	1,200	1,500	1,200	1,000
13,000	1,700	1,500	1,200	1,700	1,500	1,200	1,500	1,200	1,000
14,000	1,800	1,500	1,200	1,800	1,500	1,200	1,500	1,300	1,000
15,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,000
16,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
17,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
18,000	1,800	1,600	1,300	1,800	1,600	1,300	1,600	1,300	1,100
19,000	1,800	1,600	1,300	1,800	1,600	1,300	1,600	1,300	1,100
20,000	1,900	1,600	1,300	1,900	1,600	1,300	1,600	1,400	1,100
21,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,100
22,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
23,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
24,000	1,900	1,700	1,400	1,900	1,700	1,400	1,600	1,400	1,200
25,000	1,900	1,700	1,400	1,900	1,700	1,400	1,700	1,400	1,200

Figure 4.4a(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	800
4,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
5,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
6,000	1,600	1,400	1,100	1,600	1,400	1,100	1,300	1,100	900
7,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,100	900
8,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,200	900
9,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	900
10,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
11,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
12,000	1,700	1,500	1,200	1,700	1,500	1,200	1,400	1,200	1,000
13,000	1,700	1,500	1,200	1,700	1,500	1,200	1,500	1,200	1,000
14,000	1,700	1,500	1,200	1,700	1,500	1,200	1,500	1,300	1,000
15,000	1,800	1,500	1,200	1,800	1,500	1,200	1,500	1,300	1,000
16,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,000
17,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
18,000	1,800	1,600	1,300	1,800	1,600	1,300	1,500	1,300	1,100
19,000	1,800	1,600	1,300	1,800	1,600	1,300	1,600	1,300	1,100
20,000	1,800	1,600	1,300	1,800	1,600	1,300	1,600	1,300	1,100
21,000	1,900	1,600	1,300	1,900	1,600	1,300	1,600	1,400	1,100
22,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,100
23,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
24,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
25,000	1,900	1,700	1,400	1,900	1,700	1,400	1,700	1,400	1,200

Figure 4.4a(2).

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
4,000	1,300	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
5,000	1,600	1,300	1,100	1,600	1,300	1,100	1,300	1,100	900
6,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,100	900
7,000	1,600	1,400	1,100	1,600	1,400	1,100	1,400	1,200	900
8,000	1,700	1,400	1,100	1,700	1,400	1,100	1,400	1,200	900
9,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
10,000	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
11,000	1,700	1,500	1,200	1,700	1,500	1,200	1,400	1,200	1,000
12,000	1,700	1,500	1,200	1,700	1,500	1,200	1,500	1,200	1,000
13,000	1,700	1,500	1,200	1,700	1,500	1,200	1,500	1,300	1,000
14,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,000
15,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
16,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
17,000	1,800	1,600	1,300	1,800	1,600	1,300	1,500	1,300	1,100
18,000	1,800	1,600	1,300	1,800	1,600	1,300	1,600	1,300	1,100
19,000	1,800	1,600	1,300	1,800	1,600	1,300	1,600	1,400	1,100
20,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,100
21,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
22,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
23,000	1,900	1,700	1,400	1,900	1,700	1,400	1,700	1,400	1,200
24,000	1,900	1,700	1,400	1,900	1,700	1,400	1,700	1,400	1,200
25,000	2,000	1,700	1,400	2,000	1,700	1,400	1,700	1,500	1,200
NOTE: Initial effects only. Fallout governs.									

Figure 4.4a(3).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 4.5 for special friendly troop orientations.

Troop Safety Distances—Meters
Small Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,100
4,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
5,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
6,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
7,000	1,800	1,600	1,400	1,800	1,600	1,400	1,500	1,400	1,100
8,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
9,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,200
10,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
11,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
12,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
13,000	1,900	1,700	1,500	1,900	1,700	1,500	1,600	1,500	1,200
14,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,500	1,200
15,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,500	1,200
16,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
17,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
18,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
19,000	2,000	1,800	1,600	2,000	1,800	1,600	1,700	1,600	1,300
20,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300
21,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300
22,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
23,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
24,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
25,000	2,100	1,900	1,700	2,100	1,900	1,700	1,800	1,700	1,400

Figure 4.4b(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,000
4,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
5,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
6,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
7,000	1,800	1,600	1,400	1,800	1,600	1,400	1,500	1,400	1,100
8,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
9,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
10,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
11,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
12,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
13,000	1,900	1,700	1,400	1,900	1,700	1,400	1,600	1,400	1,200
14,000	1,900	1,700	1,500	1,900	1,700	1,500	1,600	1,500	1,200
15,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,500	1,200
16,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
17,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
18,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
19,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
20,000	2,000	1,800	1,600	2,000	1,800	1,600	1,700	1,600	1,300
21,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300
22,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300
23,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
24,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
25,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400

Figure 4.4b(2).

SFR 1

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	1,800	1,500	1,300	1,800	1,500	1,300	1,400	1,300	1,100
4,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
5,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
6,000	1,800	1,500	1,300	1,800	1,500	1,300	1,500	1,300	1,100
7,000	1,800	1,600	1,400	1,800	1,600	1,400	1,500	1,400	1,100
8,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,400	1,100
9,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
10,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
11,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
12,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
13,000	1,900	1,700	1,500	1,900	1,700	1,500	1,600	1,500	1,200
14,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,500	1,200
15,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
16,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
17,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,300
18,000	2,000	1,800	1,600	2,000	1,800	1,600	1,700	1,600	1,300
19,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300
20,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,600	1,300
21,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
22,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
23,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,400
24,000	2,100	1,900	1,700	2,100	1,900	1,700	1,800	1,700	1,400
25,000	2,200	1,900	1,700	2,200	1,900	1,700	1,800	1,700	1,400

NOTE: Initial effects only. Fallout governs.

Figure 4.4b(3).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 4.5 for special friendly troop orientations.

[1]Small Free Rocket.

Troop Safety Distances—Meters
Small Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
3,000	2,300	1,700	1,400	1,900	1,600	1,400	1,500	1,300	1,100
4,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
5,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
6,000	2,300	1,700	1,500	1,900	1,600	1,500	1,600	1,400	1,100
7,000	2,300	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
8,000	2,400	1,800	1,500	1,900	1,700	1,500	1,600	1,400	1,100
9,000	2,400	1,800	1,500	2,000	1,700	1,500	1,600	1,400	1,200
10,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
11,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
12,000	2,400	1,800	1,600	2,000	1,700	1,600	1,700	1,500	1,200
13,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
14,000	2,500	1,900	1,600	2,000	1,800	1,600	1,700	1,500	1,200
15,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,300
16,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
17,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
18,000	2,500	1,900	1,700	2,100	1,800	1,700	1,800	1,600	1,300
19,000	2,500	1,900	1,700	2,100	1,900	1,700	1,800	1,600	1,300
20,000	2,600	2,000	1,700	2,100	1,900	1,700	1,800	1,600	1,300
21,000	2,600	2,000	1,700	2,200	1,900	1,700	1,800	1,600	1,400
22,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
23,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
24,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,700	1,400
25,000	2,600	2,000	1,800	2,200	2,000	1,800	1,900	1,700	1,400

Figure 4.4c(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
3,000	2,300	1,700	1,400	1,900	1,600	1,400	1,500	1,300	1,000
4,000	2,300	1,700	1,400	1,900	1,600	1,400	1,500	1,300	1,100
5,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,300	1,100
6,000	2,300	1,700	1,400	1,900	1,600	1,400	1,600	1,400	1,100
7,000	2,300	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
8,000	2,400	1,800	1,500	1,900	1,700	1,500	1,600	1,400	1,100
9,000	2,400	1,800	1,500	2,000	1,700	1,500	1,600	1,400	1,100
10,000	2,400	1,800	1,500	2,000	1,700	1,500	1,600	1,400	1,200
11,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
12,000	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
13,000	2,400	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
14,000	2,500	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
15,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,200
16,000	2,500	1,900	1,600	2,100	1,800	1,600	1,700	1,500	1,300
17,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
18,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,500	1,300
19,000	2,500	1,900	1,600	2,100	1,800	1,600	1,800	1,600	1,300
20,000	2,500	2,000	1,700	2,100	1,900	1,700	1,800	1,600	1,300
21,000	2,600	2,000	1,700	2,200	1,900	1,700	1,800	1,600	1,300
22,000	2,600	2,000	1,700	2,200	1,900	1,700	1,800	1,600	1,300
23,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
24,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400
25,000	2,600	2,000	1,700	2,200	1,900	1,700	1,900	1,600	1,400

Figure 4.4c(2).

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
3,000	1,900	1,600	1,400	1,900	1,600	1,400	1,500	1,300	1,100
4,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,300	1,100
5,000	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,300	1,100
6,000	1,900	1,600	1,500	1,900	1,600	1,500	1,600	1,400	1,100
7,000	1,900	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
8,000	1,900	1,700	1,500	1,900	1,700	1,500	1,600	1,400	1,100
9,000	2,000	1,700	1,500	2,000	1,700	1,500	1,600	1,400	1,200
10,000	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,400	1,200
11,000	2,000	1,700	1,600	2,000	1,700	1,600	1,700	1,500	1,200
12,000	2,000	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
13,000	2,000	1,800	1,600	2,000	1,800	1,600	1,700	1,500	1,200
14,000	2,100	1,800	1,600	2,100	1,800	1,600	1,700	1,500	1,300
15,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,500	1,300
16,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,500	1,300
17,000	2,100	1,800	1,600	2,100	1,800	1,600	1,800	1,600	1,300
18,000	2,100	1,900	1,700	2,100	1,900	1,700	1,800	1,600	1,300
19,000	2,100	1,900	1,700	2,100	1,900	1,700	1,800	1,600	1,300
20,000	2,200	1,900	1,700	2,200	1,900	1,700	1,800	1,600	1,400
21,000	2,200	1,900	1,700	2,200	1,900	1,700	1,900	1,600	1,400
22,000	2,200	1,900	1,700	2,200	1,900	1,700	1,900	1,600	1,400
23,000	2,200	1,900	1,800	2,200	1,900	1,800	1,900	1,700	1,400
24,000	2,200	2,000	1,800	2,200	2,000	1,800	1,900	1,700	1,400
25,000	2,200	2,000	1,800	2,200	2,000	1,800	1,900	1,700	1,400
NOTE: Initial effects only. Fallout governs.									

Figure 4.4c(3).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 4.5 for special friendly troop orientations.

Troop Safety Distances—Meters
Small Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	3,300	2,500	2,100	2,100	1,800	1,500	1,700	1,500	1,200
4,000	3,300	2,500	2,100	2,100	1,800	1,500	1,700	1,500	1,200
5,000	3,300	2,500	2,100	2,200	1,800	1,500	1,800	1,500	1,200
6,000	3,400	2,500	2,100	2,200	1,900	1,500	1,800	1,500	1,300
7,000	3,400	2,500	2,200	2,200	1,900	1,500	1,800	1,500	1,300
8,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,500	1,300
9,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
10,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
11,000	3,400	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
12,000	3,500	2,600	2,200	2,300	2,000	1,600	1,900	1,600	1,400
13,000	3,500	2,700	2,300	2,300	2,000	1,600	1,900	1,600	1,400
14,000	3,500	2,700	2,300	2,300	2,000	1,700	1,900	1,600	1,400
15,000	3,500	2,700	2,300	2,300	2,000	1,700	2,000	1,700	1,400
16,000	3,500	2,700	2,300	2,400	2,000	1,700	2,000	1,700	1,400
17,000	3,500	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
18,000	3,600	2,700	2,300	2,400	2,100	1,700	2,100	1,700	1,500
19,000	3,600	2,800	2,400	2,400	2,100	1,700	2,100	1,700	1,500
20,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,700	1,500
21,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,800	1,500
22,000	3,600	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
23,000	3,600	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
24,000	3,700	2,800	2,400	2,500	2,200	1,800	2,200	1,800	1,500
25,000	3,700	2,900	2,500	2,500	2,200	1,800	2,200	1,800	1,600

Figure 4.4d(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	3,300	2,500	2,100	2,100	1,800	1,500	1,700	1,500	1,200
4,000	3,300	2,500	2,100	2,100	1,800	1,500	1,700	1,500	1,200
5,000	3,300	2,500	2,100	2,200	1,800	1,500	1,700	1,500	1,200
6,000	3,300	2,500	2,100	2,200	1,800	1,500	1,800	1,500	1,200
7,000	3,400	2,500	2,100	2,200	1,900	1,500	1,800	1,500	1,300
8,000	3,400	2,600	2,200	2,200	1,900	1,500	1,800	1,500	1,300
9,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,500	1,300
10,000	3,400	2,600	2,200	2,200	1,900	1,600	1,900	1,600	1,300
11,000	3,400	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
12,000	3,400	2,600	2,200	2,300	1,900	1,600	2,000	1,600	1,300
13,000	3,500	2,600	2,200	2,300	2,000	1,600	2,000	1,600	1,300
14,000	3,500	2,700	2,300	2,300	2,000	1,600	2,000	1,600	1,400
15,000	3,500	2,700	2,300	2,300	2,000	1,600	2,100	1,600	1,400
16,000	3,500	2,700	2,300	2,300	2,000	1,700	2,100	1,700	1,400
17,000	3,500	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
18,000	3,500	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
19,000	3,600	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
20,000	3,600	2,800	2,400	2,400	2,100	1,700	2,200	1,700	1,500
21,000	3,600	2,800	2,400	2,400	2,100	1,700	2,200	1,700	1,500
22,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,800	1,500
23,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,800	1,500
24,000	3,600	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
25,000	3,700	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500

Figure 4.4d(2).

SFR 1

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	2,100	1,800	1,500	2,100	1,800	1,500	1,700	1,500	1,200
4,000	2,100	1,800	1,500	2,100	1,800	1,500	1,700	1,500	1,200
5,000	2,200	1,800	1,500	2,200	1,800	1,500	1,800	1,500	1,200
6,000	2,200	1,900	1,500	2,200	1,900	1,500	1,800	1,500	1,300
7,000	2,200	1,900	1,500	2,200	1,900	1,500	1,800	1,500	1,300
8,000	2,200	1,900	1,600	2,200	1,900	1,600	1,800	1,600	1,300
9,000	2,200	1,900	1,600	2,200	1,900	1,600	1,800	1,600	1,300
10,000	2,300	1,900	1,600	2,300	1,900	1,600	1,800	1,600	1,300
11,000	2,300	1,900	1,600	2,300	1,900	1,600	1,900	1,600	1,300
12,000	2,300	2,000	1,600	2,300	2,000	1,600	1,900	1,600	1,400
13,000	2,300	2,000	1,600	2,300	2,000	1,600	1,900	1,600	1,400
14,000	2,300	2,000	1,700	2,300	2,000	1,700	1,900	1,700	1,400
15,000	2,300	2,000	1,700	2,300	2,000	1,700	1,900	1,700	1,400
16,000	2,400	2,000	1,700	2,400	2,000	1,700	1,900	1,700	1,400
17,000	2,400	2,000	1,700	2,400	2,000	1,700	2,000	1,700	1,500
18,000	2,400	2,100	1,700	2,400	2,100	1,700	2,000	1,700	1,500
19,000	2,400	2,100	1,800	2,400	2,100	1,800	2,000	1,700	1,500
20,000	2,400	2,100	1,800	2,400	2,100	1,800	2,000	1,800	1,500
21,000	2,400	2,100	1,800	2,400	2,100	1,800	2,000	1,800	1,500
22,000	2,500	2,100	1,800	2,500	2,100	1,800	2,100	1,800	1,500
23,000	2,500	2,200	1,800	2,500	2,200	1,800	2,100	1,800	1,600
24,000	2,500	2,200	1,800	2,500	2,200	1,800	2,100	1,800	1,600
25,000	2,500	2,200	1,900	2,500	2,200	1,900	2,100	1,900	1,600
NOTE: Initial effects only. Fallout governs.									

Figure 4.4d(3).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 4.5 for special friendly troop orientations.

[1]Small Free Rocket.

Troop Safety Distances—Meters
Small Free Rocket

LOW Airburst

Range (meters)	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	4,100	3,300	3,000	2,700	1,900	1,600	1,900	1,600	1,300
4,000	4,100	3,300	3,100	2,800	1,900	1,600	1,900	1,600	1,300
5,000	4,200	3,300	3,100	2,800	2,000	1,700	1,900	1,600	1,300
6,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
7,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
8,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
9,000	4,200	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
10,000	4,200	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
11,000	4,300	3,400	3,200	2,900	2,100	1,800	2,000	1,700	1,400
12,000	4,300	3,500	3,200	2,900	2,100	1,800	2,100	1,800	1,500
13,000	4,300	3,500	3,200	2,900	2,100	1,800	2,100	1,800	1,500
14,000	4,300	3,500	3,200	2,900	2,100	1,800	2,200	1,800	1,500
15,000	4,300	3,500	3,300	3,000	2,100	1,800	2,200	1,800	1,500
16,000	4,300	3,500	3,300	3,000	2,100	1,800	2,300	1,800	1,500
17,000	4,400	3,500	3,300	3,000	2,200	1,900	2,300	1,800	1,500
18,000	4,400	3,600	3,300	3,000	2,200	1,900	2,400	1,800	1,600
19,000	4,400	3,600	3,300	3,000	2,200	1,900	2,500	1,800	1,600
20,000	4,400	3,600	3,300	3,000	2,200	1,900	2,500	1,800	1,600
21,000	4,400	3,600	3,400	3,100	2,200	1,900	2,600	1,900	1,600
22,000	4,500	3,600	3,400	3,100	2,200	1,900	2,600	1,900	1,600
23,000	4,500	3,600	3,400	3,100	2,300	2,000	2,600	1,900	1,600
24,000	4,500	3,700	3,400	3,100	2,300	2,000	2,700	1,900	1,600
25,000	4,500	3,700	3,400	3,100	2,300	2,000	2,700	2,000	1,700

Figure 4.4e(1).

HIGH Airburst

Range (meters)	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	4,100	3,300	3,000	2,700	1,900	1,600	1,800	1,600	1,300
4,000	4,100	3,300	3,100	2,800	1,900	1,600	1,900	1,600	1,300
5,000	4,200	3,300	3,100	2,800	1,900	1,600	1,900	1,600	1,300
6,000	4,200	3,300	3,100	2,800	2,000	1,600	2,000	1,600	1,300
7,000	4,200	3,400	3,100	2,800	2,000	1,700	2,000	1,600	1,300
8,000	4,200	3,400	3,100	2,800	2,000	1,700	2,100	1,600	1,400
9,000	4,200	3,400	3,100	2,800	2,000	1,700	2,100	1,600	1,400
10,000	4,200	3,400	3,200	2,900	2,000	1,700	2,200	1,600	1,400
11,000	4,300	3,400	3,200	2,900	2,000	1,700	2,200	1,600	1,400
12,000	4,300	3,400	3,200	2,900	2,100	1,700	2,300	1,600	1,400
13,000	4,300	3,500	3,200	2,900	2,100	1,800	2,400	1,700	1,400
14,000	4,300	3,500	3,200	2,900	2,100	1,800	2,400	1,700	1,500
15,000	4,300	3,500	3,200	2,900	2,100	1,800	2,500	1,800	1,500
16,000	4,300	3,500	3,300	3,000	2,100	1,800	2,500	1,800	1,500
17,000	4,400	3,500	3,300	3,000	2,100	1,800	2,500	1,800	1,500
18,000	4,400	3,500	3,300	3,000	2,100	1,800	2,600	1,800	1,500
19,000	4,400	3,600	3,300	3,000	2,200	1,900	2,600	1,900	1,500
20,000	4,400	3,600	3,300	3,000	2,200	1,900	2,600	1,900	1,500
21,000	4,400	3,600	3,300	3,000	2,200	1,900	2,600	1,900	1,600
22,000	4,400	3,600	3,400	3,100	2,200	1,900	2,700	1,900	1,600
23,000	4,500	3,600	3,400	3,100	2,200	1,900	2,700	1,900	1,600
24,000	4,500	3,600	3,400	3,100	2,200	1,900	2,700	1,900	1,600
25,000	4,500	3,700	3,400	3,100	2,300	1,900	2,700	2,000	1,600

Figure 4.4e(2).

IMPACT Burst

Range (meters)	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
3,000	2,700	2,000	1,700	2,300	1,900	1,600	1,900	1,600	1,300
4,000	2,700	2,000	1,700	2,300	1,900	1,600	1,900	1,600	1,300
5,000	2,700	2,000	1,700	2,300	1,900	1,700	1,900	1,600	1,300
6,000	2,700	2,000	1,800	2,300	2,000	1,700	1,900	1,700	1,400
7,000	2,700	2,000	1,800	2,400	2,000	1,700	1,900	1,700	1,400
8,000	2,700	2,100	1,800	2,400	2,000	1,700	1,900	1,700	1,400
9,000	2,800	2,100	1,800	2,400	2,000	1,700	2,000	1,700	1,400
10,000	2,800	2,100	1,800	2,400	2,000	1,700	2,000	1,700	1,400
11,000	2,800	2,100	1,800	2,400	2,100	1,800	2,000	1,700	1,400
12,000	2,800	2,100	1,900	2,400	2,100	1,800	2,000	1,800	1,500
13,000	2,800	2,200	1,900	2,500	2,100	1,800	2,000	1,800	1,500
14,000	2,900	2,200	1,900	2,500	2,100	1,800	2,000	1,800	1,500
15,000	2,900	2,200	1,900	2,500	2,100	1,800	2,100	1,800	1,500
16,000	2,900	2,200	1,900	2,500	2,100	1,800	2,100	1,800	1,500
17,000	2,900	2,200	1,900	2,500	2,200	1,900	2,100	1,800	1,600
18,000	2,900	2,200	2,000	2,500	2,200	1,900	2,100	1,900	1,600
19,000	2,900	2,300	2,000	2,600	2,200	1,900	2,100	1,900	1,600
20,000	3,000	2,300	2,000	2,600	2,200	1,900	2,200	1,900	1,600
21,000	3,000	2,300	2,000	2,600	2,200	1,900	2,200	1,900	1,600
22,000	3,000	2,300	2,000	2,600	2,300	2,000	2,200	1,900	1,600
23,000	3,000	2,300	2,100	2,600	2,300	2,000	2,200	2,000	1,700
24,000	3,000	2,300	2,100	2,700	2,300	2,000	2,200	2,000	1,700
25,000	3,000	2,400	2,100	2,700	2,300	2,000	2,200	2,000	1,700

NOTE: Initial effects only. Fallout governs.

Figure 4.4e(3).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See fig 4.5 for special friendly troop orientations.

SUPPLEMENTARY TROOP SAFETY Tables
Small Free Rocket—All Yields

The troop safety distances in figures 4.4*a*(1) through 4.4*e*(3) are based on the friendly troop orientation shown in figure 1, below. The elliptical delivery pattern of the small free rocket may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5 below.

Special Troop Safety Orientations

LEGEND
DGZ- Desired ground zero.
R_S – Safety radius.
d_b – Buffer distance.
~~~-Friendly troops
⟶-Direction of fire

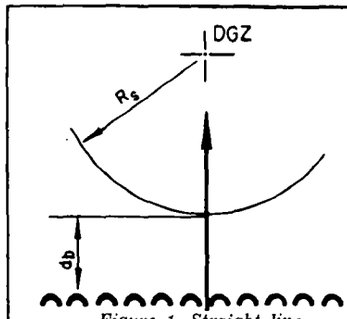

Figure 1. Straight line, perpendicular delivery.

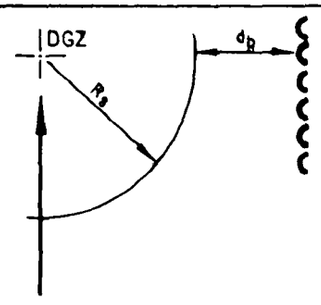

Figure 2. Straight line, parallel delivery.

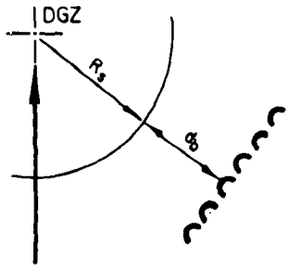

Figure 3. Straight-line, 45° delivery.

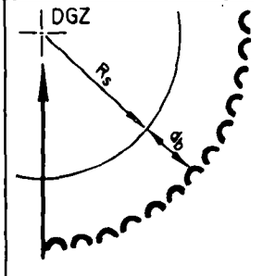

Figure 4. Quarter circle.

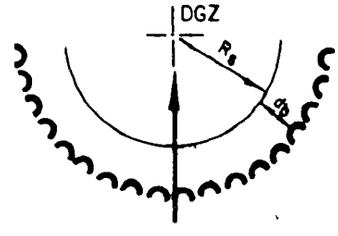

Figure 5. Half circle.

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When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figures 4.4*a*(1) through 4.4*e*(3) must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

All Height of Burst Options—All Yields

Range (meters)	*Straight-line parallel delivery* (Fig 2)	*Straight-line 45° delivery* (Fig 3)	*Quarter circle* (Fig 4)	*Half circle* (Fig 5)	*Range* (meters)	*Straight-line parallel delivery* (Fig 2)	*Straight-line 45° delivery* (Fig 3)	*Quarter circle* (Fig 4)	*Half circle* (Fig 5)
3,000	+100	+100	+100	+100	20,000	+300	+200	+400	+400
4,000	+100	+100	+100	+100	21,000	+400	+200	+400	+400
5,000	+100	+100	+100	+100	22,000	+400	+300	+400	+500
6,000	+200	+100	+200	+200	23,000	+400	+300	+500	+500
7,000	+200	+100	+200	+200	24,000	+400	+300	+500	+500
8,000	+200	+100	+200	+200	25,000	+400	+300	+500	+500
9,000	+200	+100	+200	+200					
10,000	+200	+100	+200	+200					
11,000	+200	+200	+200	+300					
12,000	+200	+200	+300	+300					
13,000	+200	+200	+300	+300					
14,000	+300	+200	+300	+300					
15,000	+300	+200	+300	+300					
16,000	+300	+200	+300	+300					
17,000	+300	+200	+400	+400					
18,000	+300	+200	+400	+400					
19,000	+300	+200	+400	+400					

Figure 4.5.

[1]Small Free Rocket.

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CASUALTY and DAMAGE Tables
Small Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shetler		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
675		0										0	1,300	1,000	675	1,300	1,000	675	1,000	725	325
650		125				0						150	1,325	1,025	700	1,325	1,025	700	1,025	750	375
625		225				150				0		225	1,325	1,050	725	1,325	1,050	725	1,050	775	425
600		275				225				100		275	1,350	1,050	750	1,350	1,050	750	1,050	775	450
575		325				275				200		325	1,350	1,075	775	1,350	1,075	775	1,075	800	500
550		375				325				250		375	1,350	1,075	800	1,350	1,075	800	1,075	825	525
525		400				375				300		400	1,375	1,100	800	1,375	1,100	800	1,100	850	550
500		425		0		400				350		450	1,375	1,100	825	1,375	1,100	825	1,100	850	575
475		450		150		425				375	0	475	1,375	1,125	825	1,375	1,125	825	1,125	875	600
450		475		225	0	450				400	300	500	1,400	1,125	850	1,400	1,125	850	1,125	875	600
425	0	500		275	150	475			0	425	375	500	1,400	1,125	850	1,400	1,125	850	1,125	900	625
400	150	525		300	200	500		0	150	450	450	525	1,400	1,150	875	1,400	1,150	875	1,150	900	650
375	200	550		325	250	525		50	200	475	575	575	1,425	1,150	875	1,425	1,150	875	1,150	925	650
350	250	550		350	275	525		150	250	500	750	750	1,425	1,150	900	1,425	1,150	900	1,150	925	675
325	275	575		375	300	550		200	275	525	800	800	1,425	1,175	900	1,425	1,175	900	1,175	950	700
300	300	600	0	400	325	575		225	300	525	800	800	1,425	1,175	900	1,425	1,175	900	1,175	950	700
275	325	600	125	425	350	575		275	325	550	800	800	1,450	1,175	925	1,450	1,175	925	1,175	950	700
250	350	600	175	425	375	600	0	275	350	550	775	775	1,450	1,175	925	1,450	1,175	925	1,175	950	725
225	350	625	200	450	400	600	75	300	400	575	725	725	1,450	1,200	925	1,450	1,200	925	1,200	975	725
200	375	625	225	450	400	600	125	325	425	575	700	700	1,450	1,200	950	1,450	1,200	950	1,200	975	725
175	400	650	250	475	425	625	175	350	425	575	650	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
150	400	650	250	475	425	625	200	350	400	600	625	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
125	400	650	275	475	425	625	200	350	400	600	600	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
100	425	650	275	500	450	625	225	375	400	600	575	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
75	425	650	300	500	450	625	225	375	425	600	550	650	1,475	1,200	950	1,475	1,200	950	1,200	975	750
50	425	675	300	500	450	650	225	375	425	600	550	650	1,475	1,200	950	1,475	1,200	950	1,200	975	750
25	425	675	300	500	450	650	250	375	425	600	525	675	1,475	1,200	950	1,475	1,200	950	1,200	975	750
0	425	675	300	500	450	650	250	375	425	600	525	675	1,475	1,200	950	1,475	1,200	950	1,200	975	750

HOB_{fs} = 24 m

Low HOB_{min} = 42 m

High HOB_{min} = 96 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 4.6a.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam ltwg and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI Over-pressure	Induced contamination							
											Intensity at G2 (Rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
675										1,225			0–10				0–550	
650										1,250			0–10				0–550	
625										1,275			0–10				0–600	
600										1,275			0–15				0–600	
575										1,300		0	0–15			0	0–650	
550							0			1,325		0–5	0–20			0–50	0–650	
525							125			1,325		0–5	0–25			0–100	0–650	
500							200			1,325		0–5	0–30			0–250	0–700	
475							250			1,325		0–5	0–45			0–300	0–750	
450							300			1,350		0–5	5–60			0–350	50–750	
425							325			1,350		0–10	5–75			0–350	150–750	
400							375			1,350		0–10	5–100			0–400	200–750	
375							400			1,350	0	0–15	10–130		0	0–450	250–800	
350							400			1,350	0–5	0–15	10–160		0–50	0–450	300–800	
325							425	0		1,350	0–5	0–20	10–200		0–150	0–450	350–800	
300							450	75		1,325	0–5	0–20	10–240		0–200	0–500	350–800	
275							475	150		1,325	0–5	0–25	15–290		0–250	0–500	400–850	
250							475	175		1,300	0–5	0–30	15–330		0–250	0–500	400–850	
225				0			500	225		1,300	0–5	0–35	20–390		0–300	0–550	400–850	
200	0			50			500	225		1,275	0–5	0–45	25–540		0–300	0–550	450–850	
175	25			100			500	250		1,250	0–10	0–55	30–660		0–350	0–550	450–850	
150	75	0	0	125		0	525	275	0	1,250	0–10	5–70	35–840		0–350	50–550	450–850	
125	150	25	50	150		175	525	275	50	1,225	0–10	5–100	45–1,150		0–350	100–550	450–850	
100	175	50	75	175		200	525	300	100	1,200	0–15	5–120	55–1,350		0–350	150–550	450–850	
75	200	75	100	175	0	200	525	300	100	1,150	0–20	10–145	70–1,750		0–350	150–550	450–850	
50	200	100	100	200	175	200	550	300	125	1,125	0–20	10–175	85–2,100		0–350	150–550	450–850	
25	200	125	100	200	150	175	450	250	125	1,100	0–25	10–250	120–2,900	0	0–350	150–550	450–850	0
0	125	100	75	150	100	125	325	150	75	1,050	FALLOUT GOVERNS							

Figure 4.6a continued.

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[1]Small Free Rocket.

CASUALTY and DAMAGE Tables
Small Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
825													1,450	1,125	850	1,450	1,125	850	1,075	850	475
800		0											1,475	1,150	875	1,475	1,150	875	1,100	875	525
775		125										0	1,475	1,150	900	1,475	1,150	900	1,100	900	550
750		225				0						150	1,500	1,175	925	1,500	1,175	925	1,125	925	600
725		300				125				0		250	1,500	1,200	950	1,500	1,200	950	1,150	950	625
700		350				225				100		300	1,525	1,200	950	1,525	1,200	950	1,150	950	650
675		400				300				200		350	1,525	1,225	975	1,525	1,225	975	1,175	975	675
650		450				350				275		400	1,550	1,225	1,000	1,550	1,225	1,000	1,200	1,000	700
625		475				400				325		450	1,550	1,250	1,000	1,550	1,250	1,000	1,200	1,000	725
600		500		0		425				375		475	1,550	1,250	1,025	1,550	1,250	1,025	1,225	1,025	750
575	0	550		125		450				400	0	500	1,575	1,275	1,050	1,575	1,275	1,050	1,225	1,050	775
550	125	550		225	0	500				450	325	525	1,575	1,275	1,050	1,575	1,275	1,050	1,250	1,050	800
525	200	575		275	75	525			0	475	400	550	1,575	1,300	1,075	1,575	1,300	1,075	1,250	1,075	800
500	275	600		300	175	550			75	500	475	575	1,600	1,300	1,075	1,600	1,300	1,075	1,250	1,075	825
475	300	625		350	225	550		0	175	525	550	600	1,600	1,300	1,100	1,600	1,300	1,100	1,275	1,100	825
450	350	650		375	275	575		50	225	550	600	625	1,600	1,325	1,100	1,600	1,325	1,100	1,275	1,100	850
425	375	650	0	400	325	600		150	275	550	700	700	1,625	1,325	1,100	1,625	1,325	1,100	1,300	1,100	850
400	400	675	100	425	350	625		225	300	575	950	950	1,625	1,325	1,125	1,625	1,325	1,125	1,300	1,125	875
375	425	700	175	450	375	625		250	350	600	975	975	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	875
350	450	700	225	475	400	650		300	375	600	1,000	1,000	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	900
325	475	725	250	500	425	650		325	400	625	1,000	1,000	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
300	475	725	275	500	425	675	0	350	550	625	975	975	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
275	500	725	300	525	450	675	125	375	575	650	950	950	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
250	500	750	325	525	475	700	175	375	575	650	925	925	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
225	525	750	350	550	475	700	200	400	575	675	875	875	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	925
200	525	750	350	550	500	700	225	400	575	675	850	850	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
175	550	775	375	575	500	725	250	425	525	675	800	800	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
150	550	775	375	575	500	725	250	425	500	700	775	775	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
125	550	775	400	575	525	725	275	450	500	700	750	750	1,675	1,375	1,175	1,675	1,375	1,175	1,350	1,175	950
100	550	775	400	575	525	725	275	450	500	700	725	750	1,675	1,400	1,175	1,675	1,400	1,175	1,350	1,175	950
75	550	775	400	575	525	725	300	450	500	700	700	750	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,175	950
50	550	775	400	600	525	725	300	450	500	700	675	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
25	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
0	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950

HOB_{fs} = 30 m

Low HOB_{min} = 53 m

High HOB_{min} = 120 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 4.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	*Mod dam wheeled vehs*	*Mod dam tks and arty*	*Severe dam sup deps*	*Severe dam radios and elec equip*	*Severe dam hwy and RR brgs*	*Severe dam float bridge*	*2d-degree burns*			*1 PSI over-pressure*	*Induced contamination*							
											Intensity at GZ (rad/hr)				*2 rad/hr radius*			
							Exposed skin	*2-layer summer uniform*	*4-layer winter uniform*		*Type I*	*Type II*	*Type III.*	*Type IV*	*Type I*	*Type II*	*Type III*	*Type IV*
825										1,550			0–5				0–500	
800										1,575			0–5				0–550	
775										1,600			0–10				0–550	
750							0			1,625			0–10				0–600	
725							200			1,650			0–10				0–650	
700							275			1,650			0–10				0–650	
675							325			1,675			0–15				0–700	
650							375			1,675			0–20				0–700	
625							425			1,675		0	0–20			0	0–750	
600							450			1,675		0–5	0–25			0–50	0–750	
575							475			1,700		0–5	0–30			0–200	0–800	
550							500			1,700		0–5	0–40			0–250	0–800	
525							525			1,700		0–5	0–50			0–300	0–800	
500							550			1,700		0–5	0–60			0–350	0–800	
475							575			1,700		0–10	0–90			0–400	0–850	
450							600			1,700		0–10	5–120			0–400	50–850	
425							625			1,700	0	0–15	10–150		0	0–450	150–900	
400							625			1,700	0–5	0–20	10–200		0–50	0–450	200–900	
375							650			1,675	0–5	0–25	15–260		0–150	0–500	250–900	
350							675	0		1,675	0–5	0–30	15–320		0–200	0–500	300–900	
325							675	125		1,650	0–5	0–35	20–400		0–250	0–500	350–900	
300				0			675	175		1,650	0–5	5–40	20–480		0–300	50–550	350–950	
275				25			700	200		1,625	0–10	5–50	25–580		0–300	150–550	400–950	
250				75			700	250		1,600	0–10	5–55	30–660		0–350	200–550	400–950	
225	0			125			725	250		1,600	0–10	5–65	35–780		0–350	200–600	400–950	
200	50		0	150		0	725	275	0	1,575	0–10	5–90	50–1,080		0–350	250–600	450–950	
175	150	0	25	175		250	725	300	50	1,550	0–15	5–110	60–1,320		0–400	250–600	450–950	
150	200	25	75	200		250	725	300	100	1,525	0–15	10–140	70–1,680		0–400	300–600	450–950	
125	225	50	100	225		250	750	325	125	1,500	0–20	10–185	90–2,220		0–400	300–600	450–950	
100	250	100	125	225	0	275	750	325	150	1,475	0–25	10–225	110–2,700		0–400	300–600	450–950	
75	250	150	125	250	225	275	750	325	175	1,450	0–35	15–290	140–3,500		0–400	300–600	450–950	
50	250	150	150	250	250	275	725	325	175	1,400	5–40	15–350	170–4,200	0	50–400	300–600	450–950	0
25	250	150	150	250	225	250	575	350	150	1,375	FALLOUT GOVERNS							
0	175	125	100	200	150	200	450	250	125	1,325								

Figure 4.6b continued.

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[1]Small Free Rocket.

CASUALTY and DAMAGE Tables
Small Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
900		0											1,975	1,300	950	1,525	1,200	950	1,125	800	325
875		175										0	1,975	1,300	950	1,525	1,200	950	1,150	825	400
850		275				0						175	2,000	1,325	975	1,550	1,225	975	1,150	850	450
825		350				175				0		275	2,000	1,350	1,000	1,550	1,250	1,000	1,175	875	500
800		400				250				100		350	2,025	1,350	1,025	1,575	1,275	1,025	1,200	900	525
775		450				325				225		400	2,025	1,375	1,050	1,575	1,275	1,050	1,225	925	575
750		475				375				300		450	2,025	1,400	1,075	1,600	1,300	1,075	1,225	950	600
725		525				425				350		475	2,050	1,400	1,075	1,600	1,300	1,075	1,250	975	625
700		550		0		475				400		525	2,050	1,400	1,100	1,625	1,325	1,100	1,250	1,000	650
675		575		125		500				450	0	550	2,050	1,425	1,100	1,625	1,325	1,100	1,275	1,000	675
650		600		225		525				475	300	575	2,075	1,425	1,125	1,650	1,350	1,125	1,275	1,025	700
625	0	625		275	0	550				500	375	600	2,075	1,450	1,150	1,650	1,350	1,150	1,300	1,050	725
600	150	650		325	150	600			0	525	450	625	2,075	1,450	1,150	1,650	1,375	1,150	1,300	1,050	750
575	250	675		375	225	625			150	550	525	650	2,100	1,475	1,175	1,675	1,375	1,175	1,325	1,075	775
550	300	700		400	275	625		0	225	575	600	675	2,100	1,475	1,175	1,675	1,400	1,175	1,325	1,075	800
525	325	725		450	325	650		100	275	600	750	750	2,100	1,500	1,200	1,675	1,400	1,200	1,350	1,100	800
500	375	725		475	375	675		200	325	625	900	900	2,100	1,500	1,200	1,700	1,400	1,200	1,350	1,100	825
475	400	750	0	500	400	700		250	350	650	1,075	1,075	2,125	1,500	1,200	1,700	1,425	1,200	1,350	1,125	825
450	425	775	125	525	425	700		275	400	675	1,175	1,175	2,125	1,500	1,225	1,700	1,425	1,225	1,375	1,125	850
425	450	775	200	550	450	725		325	425	675	1,175	1,175	2,125	1,525	1,225	1,700	1,425	1,225	1,375	1,125	850
400	475	800	250	550	475	750		350	450	700	1,200	1,200	2,125	1,525	1,250	1,725	1,450	1,250	1,375	1,150	875
375	500	800	275	575	500	750	0	375	625	700	1,200	1,200	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	875
350	525	825	300	600	500	775	100	400	675	725	1,175	1,175	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	900
325	525	825	325	600	525	775	175	425	675	725	1,175	1,175	2,150	1,550	1,250	1,725	1,450	1,250	1,400	1,175	900
300	550	825	350	625	550	775	200	450	675	750	1,125	1,125	2,150	1,550	1,275	1,725	1,475	1,275	1,400	1,175	900
275	550	850	375	625	550	800	250	450	675	750	1,100	1,100	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
250	575	850	400	625	575	800	275	475	650	750	1,050	1,050	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
225	575	850	400	650	575	800	300	475	650	775	1,025	1,025	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	925
200	575	875	425	650	600	825	300	500	625	775	975	975	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	950
175	600	875	425	675	600	825	325	500	600	775	950	950	2,175	1,575	1,300	1,750	1,475	1,300	1,425	1,200	950
150	600	875	450	675	600	825	325	525	575	800	925	925	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
125	600	875	450	675	600	825	350	525	575	800	900	900	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
100	600	875	450	675	625	825	350	525	575	800	850	850	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
75	625	875	450	675	625	850	350	525	600	800	825	875	2,175	1,575	1,300	1,750	1,500	1,300	1,450	1,200	950
50	625	900	450	675	625	850	350	525	600	800	800	875	2,025	1,550	1,300	1,750	1,500	1,300	1,450	1,200	950
25	625	900	475	675	625	850	375	525	600	800	775	875	1,900	1,525	1,300	1,750	1,500	1,300	1,450	1,200	950
0	625	900	475	675	625	850	375	525	600	800	775	875	1,750	1,500	1,300	1,750	1,500	1,300	1,450	1,200	950

HOB_{fs} = 38 m

Low HOB_{min} = 67 m

High HOB_{min} = 152 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 4.6c.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehicles	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rod/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
900							550			2,075			0–5				0–500	
875							575			2,100			0–10				0–600	
850							625			2,100			0–10				0–650	
825							650			2,100			0–10				0–700	
800							675			2,100			0–10				0–700	
775							700			2,125			0–15				0–750	
750							725			2,125			0–15				0–750	
725							750			2,125		0	0–20			0	0–800	
700							775			2,125		0–5	0–20			0–50	0–800	
675							800			2,150		0–5	0–25			0–200	0–850	
650							825			2,150		0–5	0–35			0–300	0–850	
625							850			2,150		0–5	0–40			0–350	0–850	
600							850			2,150		0–5	5–50			0–400	50–900	
575							875			2,150		0–5	5–60			0–400	200–900	
550							900			2,150		0–10	5–75			0–450	250–900	
525							900			2,125	0	0–10	5–100		0	0–450	300–950	
500							925			2,125	0–5	0–10	5–120		0–50	0–500	350–950	
475							925	0		2,125	0–5	0–15	10–180		0–150	0–550	400–950	
450							950	150		2,100	0–5	0–20	10–230		0–250	0–550	400–1,000	
425							950	200		2,100	0–5	0–25	15–300		0–300	0–600	450–1,000	
400							975	250		2,075	0–5	0–35	20–400		0–300	0–600	450–1,000	
375				0			975	300		2,075	0–5	0–50	20–520		0–350	0–600	500–1,000	
350				25			1,000	325		2,050	0–10	5–60	25–640		0–400	50–650	500–1,000	
325				75			1,000	350		2,025	0–10	5–70	35–800		0–400	150–650	500–1,000	
300	0			125			1,000	375		2,025	0–10	5–80	40–940		0–400	200–650	550–1,050	
275	25			175		0	1,025	375	0	2,000	0–15	5–100	50–1,140		0–450	250–650	550–1,050	
250	100		0	200		250	1,025	400	50	1,975	0–15	5–110	60–1,320		0–450	250–700	550–1,050	
225	150	0	25	250		300	1,025	425	125	1,950	0–15	10–130	70–1,560		0–450	300–700	600–1,050	
200	250	25	75	250		325	1,025	425	150	1,925	0–20	10–180	90–2,160		0–500	300–700	600–1,050	
175	275	50	100	275		325	1,025	450	175	1,900	0–25	10–220	110–2,700		0–500	350–700	600–1,050	
150	300	100	125	300		350	1,050	450	200	1,875	0–35	15–280	140–3,400		0–500	350–700	600–1,050	
125	325	125	150	300	0	350	1,050	450	225	1,850	0–40	15–370	180–4,500		0–500	350–700	600–1,050	
100	350	175	175	325	275	350	1,050	475	225	1,825	5–50	20–450	220–5,400		50–500	350–700	600–1,050	
75	350	200	175	325	300	375	1,050	475	250	1,775	5–70	25–580	280–7,000	0	100–500	350–700	600–1,050	0
50	350	200	200	325	300	375	925	425	225	1,750	5–80	30–700	340–8,400	0–5	100–500	350–700	600–1,050	0–50
25	300	200	175	325	275	350	775	350	200	1,725	FALLOUT GOVERNS							
0	225	150	125	275	250	300	625	300	150	1,675								

Figure 4.6c continued.

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[1]Small Free Rocket.

CASUALTY and DAMAGE Tables
Small Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Rodius of sofety								
													Unwarned, exposed			Warned, exposed			Worned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Deloyed	Prompt	Deloyed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,050		0											3,025	2,150	1,700	1,750	1,350	875	1,225	875	350
1,025		225										0	3,025	2,150	1,700	1,750	1,350	900	1,250	900	425
1,000		325				0						175	3,025	2,150	1,725	1,775	1,375	925	1,275	925	475
975		400				150						275	3,025	2,175	1,750	1,775	1,400	950	1,300	950	525
950		450				250				0		350	3,050	2,175	1,750	1,800	1,400	1,000	1,300	975	575
925		500				350				200		425	3,050	2,200	1,775	1,800	1,425	1,000	1,325	1,000	600
900		550				400				300	0	475	3,050	2,200	1,775	1,825	1,450	1,025	1,350	1,025	650
875		575				450				350	650	650	3,075	2,225	1,800	1,825	1,450	1,050	1,350	1,050	675
850		625				500				400	750	750	3,075	2,225	1,800	1,850	1,475	1,075	1,375	1,075	700
825		650		0		550				450	850	850	3,075	2,225	1,800	1,850	1,500	1,100	1,400	1,075	725
800	0	675		200		575				500	925	925	3,100	2,250	1,825	1,875	1,500	1,100	1,400	1,100	750
775	175	700		275		600				550	975	975	3,100	2,250	1,825	1,875	1,525	1,125	1,425	1,125	800
750	275	725		350	0	650				775	1,050	1,050	3,100	2,275	1,850	1,900	1,525	1,150	1,425	1,150	800
725	325	750		400	175	675			0	600	1,150	1,150	3,100	2,275	1,850	1,900	1,550	1,150	1,550	1,150	825
700	375	775		425	250	700			150	625	1,300	1,300	3,125	2,275	1,875	1,900	1,550	1,175	1,700	1,175	850
675	425	800		475	300	725			225	650	1,500	1,500	3,125	2,275	1,875	1,925	1,550	1,200	1,725	1,175	875
650	450	825		500	350	750		0	300	675	1,600	1,600	3,125	2,300	1,875	1,925	1,575	1,200	1,725	1,200	900
625	500	850	0	525	400	750		175	350	700	1,625	1,625	3,125	2,300	1,900	1,925	1,575	1,225	1,725	1,200	925
600	525	850	150	550	450	775		250	375	725	1,650	1,650	3,125	2,300	1,900	1,950	1,600	1,225	1,725	1,225	925
575	550	875	225	575	475	800		300	425	750	1,650	1,650	3,150	2,300	1,900	1,950	1,600	1,250	1,725	1,225	950
550	575	900	300	600	500	825		350	450	775	1,625	1,625	3,150	2,325	1,900	1,950	1,600	1,250	1,750	1,250	950
525	600	900	325	625	525	825		375	525	775	1,625	1,625	3,150	2,325	1,925	1,950	1,625	1,275	1,725	1,250	975
500	625	925	375	650	550	850		425	825	825	1,600	1,600	3,150	2,325	1,925	1,975	1,625	1,275	1,700	1,275	975
475	650	925	400	675	575	875	0	450	875	875	1,550	1,550	3,150	2,325	1,925	1,975	1,625	1,275	1,675	1,275	1,000
450	650	950	425	700	600	875	100	475	925	925	1,525	1,525	3,150	2,350	1,950	1,975	1,650	1,300	1,650	1,300	1,000
425	675	950	450	700	600	875	175	500	925	925	1,475	1,475	3,175	2,350	1,950	2,000	1,650	1,300	1,625	1,300	1,025
400	700	975	475	725	625	900	225	525	925	925	1,450	1,450	3,175	2,350	1,950	2,000	1,650	1,300	1,600	1,300	1,025
375	700	975	500	725	650	900	275	525	925	925	1,425	1,425	3,175	2,350	1,950	2,000	1,650	1,325	1,575	1,300	1,050
350	725	975	500	750	650	925	300	550	900	900	1,400	1,400	3,175	2,350	1,950	2,000	1,675	1,325	1,575	1,325	1,050
325	725	1,000	525	750	675	925	325	575	875	875	1,375	1,375	3,175	2,350	1,975	2,000	1,675	1,325	1,575	1,325	1,050
300	750	1,000	550	775	675	950	350	575	850	900	1,350	1,350	3,175	2,350	1,975	2,000	1,675	1,350	1,600	1,325	1,075
275	750	1,000	550	775	700	950	375	600	850	900	1,300	1,300	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,325	1,075
250	750	1,025	575	775	700	950	400	600	825	900	1,275	1,275	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,350	1,075
225	775	1,025	575	800	700	950	400	600	800	925	1,250	1,250	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,075
200	775	1,025	600	800	725	975	425	625	800	925	1,225	1,225	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
175	775	1,025	600	800	725	975	425	625	775	925	1,200	1,200	3,200	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
150	775	1,025	600	800	725	975	425	625	750	925	1,175	1,175	3,200	2,375	2,000	2,025	1,700	1,350	1,600	1,350	1,100
125	775	1,050	600	800	725	975	450	650	750	925	1,150	1,150	3,200	2,375	2,000	2,025	1,700	1,375	1,625	1,350	1,100
100	800	1,050	625	825	750	975	450	650	725	950	1,125	1,125	3,150	2,375	1,950	2,025	1,700	1,375	1,625	1,350	1,100
75	800	1,050	625	825	750	975	450	650	700	950	1,125	1,125	2,800	2,200	1,800	2,025	1,700	1,375	1,625	1,350	1,100
50	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,550	2,025	1,650	2,025	1,700	1,375	1,625	1,375	1,100
25	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,275	1,850	1,525	2,025	1,700	1,375	1,625	1,375	1,100
0	800	1,050	625	825	750	975	450	650	725	950	1,050	1,050	2,125	1,700	1,375	2,025	1,700	1,375	1,625	1,375	1,100

HOB_{fs} = 52 m

Low HOB_{min} = 91 m

High HOB_{min} = 206 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 4.6d.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mad dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d Degree Burns			1 PSI aver-pressure	Induced contaminatian							
							Exposed skin	2-layer summer unifarm	4-layer winter unifarm		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,050							1,175			2,875			0–5				0–500	
1,025							1,200			2,875			0–5				0–550	
1,000							1,225			2,875			0–10				0–600	
975							1,225			2,900			0–10				0–600	
950							1,250			2,900			0–10				0–650	
925							1,275			2,900			0–10				0–700	
900							1,300			2,900			0–15				0–750	
875							1,300			2,925			0–15				0–750	
850							1,325			2,925			0–20				0–800	
825							1,350			2,925		0	0–20			0	0–800	
800							1,350			2,925		0–5	0–25			0–50	0–850	
775							1,375			2,900		0–5	0–30			0–200	0–850	
750							1,375	0		2,900		0–5	0–35			0–300	0–900	
725							1,400	75		2,900		0–5	0–45			0–350	0–900	
700							1,400	200		2,900		0–5	5–50			0–400	50–950	
675							1,425	275		2,875		0–10	5–65			0–450	200–950	
650							1,425	325		2,875		0–10	5–80			0–500	300–950	
625							1,450	375		2,850		0–10	5–100			0–500	350–1,000	
600							1,450	425		2,850		0–10	5–120			0–550	400–1,000	
575							1,475	450		2,850	0	0–15	10–150		0	0–600	400–1,000	
550							1,475	475		2,825	0–5	0–20	10–190		0–50	0–600	450–1,050	
525							1,475	500		2,825	0–5	0–25	10–250		0–200	0–650	450–1,050	
500				0			1,500	525		2,800	0–5	0–25	15–300		0–250	0–650	500–1,050	
475				50			1,500	550		2,800	0–5	0–40	20–450		0–300	0–650	550–1,050	
450				100			1,500	575		2,775	0–5	5–50	25–570		0–300	50–700	550–1,100	
425				150			1,525	600		2,750	0–10	5–70	30–750		0–350	150–700	600–1,100	
400	0			200		0	1,525	600	0	2,725	0–10	5–90	40–1,000		0–400	200–700	600–1,100	
375	50			250		400	1,525	625	125	2,725	0–15	5–110	50–1,300		0–400	250–750	600–1,100	
350	100			300		425	1,525	650	175	2,700	0–15	10–140	70–1,600		0–400	300–750	650–1,100	
325	150		0	325		425	1,550	650	225	2,675	0–20	10–165	80–1,980		0–400	350–750	650–1,100	
300	250	0	50	350		425	1,550	675	250	2,650	0–25	10–200	100–2,340		0–450	350–750	650–1,150	
275	375	25	100	375		450	1,550	675	275	2,625	0–25	10–240	120–2,820		0–500	400–800	650–1,150	
250	400	75	150	400		450	1,550	675	300	2,600	0–35	15–275	140–3,300		0–500	400–800	700–1,150	
225	425	100	175	400		450	1,550	700	325	2,575	0–35	15–325	160–3,900		0–550	400–800	700–1,150	
200	450	125	200	425		475	1,550	700	350	2,550	5–50	20–450	220–5,400		50–550	450–800	700–1,150	
175	450	175	225	450	0	475	1,575	700	350	2,525	5–60	25–550	280–6,600	0	100–550	450–800	700–1,150	0
150	475	225	225	450	400	500	1,575	725	375	2,475	5–80	30–700	340–8,400	0–5	150–550	450–800	700–1,150	0–50
125	500	275	250	475	425	500	1,575	725	375	2,450	5–100	40–940	450–11,000	0–5	200–550	450–800	700–1,150	0–100
100	500	300	250	475	425	525	1,550	725	400	2,425	5–125	50–1,140	540–13,500	0–5	200–550	450–800	700–1,150	0–150
75	500	300	275	475	425	525	1,400	650	350	2,400	10–160	60–1,450	700–17,400	0–5	200–550	450–800	700–1,150	0–150
50	475	300	275	475	400	500	1,250	575	325	2,350	FALLOUT GOVERNS							
25	450	275	250	425	350	475	1,100	500	275	2,325								
0	325	225	175	375	300	400	925	450	250	2,275								

Figure 4.6d continued.

[1]Small Free Rocket.

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CASUALTY and DAMAGE Tables
Small Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		0									600	600	3,850	2,975	2,700	2,375	1,375	925	1,275	900	100
1,150		250									850	850	3,850	3,000	2,725	2,400	1,400	1,000	1,325	950	350
1,100		400				0				0	1,000	1,000	3,875	3,000	2,750	2,425	1,450	1,050	1,375	1,025	500
1,050		525				325				150	1,150	1,150	3,875	3,025	2,750	2,425	1,500	1,100	1,400	1,075	600
1,000		625				450				350	1,300	1,300	3,900	3,050	2,775	2,450	1,525	1,150	1,500	1,125	675
950		700		0		550				475	1,500	1,500	3,900	3,050	2,800	2,475	1,550	1,200	1,650	1,150	750
900	0	750		200		625				550	1,750	1,750	3,925	3,075	2,800	2,500	1,575	1,225	2,100	1,200	800
850	275	800		350	0	700			0	625	2,125	2,125	3,925	3,075	2,825	2,500	1,600	1,250	2,175	1,250	850
800	400	850		450	300	750			175	700	2,175	2,175	3,950	3,100	2,850	2,525	1,625	1,300	2,175	1,275	900
775	450	875		500	350	775			475	725	2,200	2,200	3,950	3,100	2,850	2,525	1,650	1,300	2,175	1,275	925
750	500	900		550	400	800		0	350	750	2,200	2,200	3,950	3,100	2,850	2,550	1,650	1,325	2,175	1,325	950
725	525	925	0	575	450	825		175	625	775	2,200	2,200	3,950	3,125	2,850	2,550	1,675	1,350	2,175	1,400	950
700	550	950	100	600	475	850		250	675	800	2,175	2,175	3,975	3,125	2,875	2,550	1,675	1,350	2,225	1,475	975
675	600	950	200	625	525	875		325	725	825	2,175	2,175	3,975	3,125	2,875	2,550	1,700	1,350	2,200	1,500	1,000
650	625	975	275	650	550	875		375	1,200	1,200	2,150	2,150	3,975	3,150	2,875	2,575	1,700	1,375	2,175	1,475	1,000
625	650	1,000	325	675	575	900		400	1,225	1,225	2,125	2,125	3,975	3,150	2,875	2,575	1,700	1,400	2,150	1,475	1,025
600	650	1,000	375	700	600	925		450	1,250	1,250	2,100	2,100	3,975	3,150	2,900	2,575	1,725	1,400	2,125	1,450	1,050
575	675	1,025	400	725	625	950		475	1,275	1,275	2,075	2,075	3,975	3,150	2,900	2,600	1,725	1,400	2,100	1,425	1,050
550	700	1,025	450	750	650	950	0	500	1,275	1,275	2,050	2,050	3,975	3,150	2,900	2,600	1,725	1,425	2,075	1,425	1,075
525	725	1,050	475	750	675	975	150	525	1,250	1,250	2,000	2,000	4,000	3,150	2,900	2,600	1,750	1,425	2,025	1,425	1,075
500	825	1,050	500	775	675	975	225	550	1,250	1,250	1,975	1,975	4,000	3,175	2,900	2,600	1,750	1,450	2,000	1,425	1,100
475	850	1,075	525	800	700	1,000	275	575	1,225	1,225	1,950	1,950	4,000	3,175	2,925	2,600	1,750	1,450	1,950	1,425	1,100
450	850	1,075	550	800	725	1,000	300	600	1,200	1,200	1,900	1,900	4,000	3,175	2,925	2,600	1,750	1,450	1,925	1,425	1,125
425	850	1,100	575	825	725	1,025	350	625	1,175	1,175	1,850	1,850	4,000	3,175	2,925	2,625	1,775	1,450	1,875	1,450	1,125
400	850	1,100	575	825	750	1,025	375	625	1,175	1,175	1,825	1,825	4,000	3,175	2,925	2,625	1,775	1,475	1,850	1,450	1,125
375	875	1,100	600	850	750	1,025	400	650	1,150	1,150	1,775	1,775	4,000	3,175	2,925	2,625	1,775	1,475	1,800	1,450	1,150
350	875	1,125	625	850	775	1,050	425	650	1,125	1,125	1,750	1,750	4,000	3,175	2,925	2,625	1,800	1,475	1,750	1,450	1,150
325	875	1,125	650	850	775	1,050	450	675	1,100	1,100	1,700	1,700	4,025	3,175	2,950	2,625	1,800	1,475	1,725	1,475	1,150
300	875	1,125	650	875	800	1,050	450	675	1,075	1,075	1,650	1,650	4,025	3,175	2,950	2,625	1,800	1,500	1,725	1,475	1,175
275	875	1,150	650	875	800	1,075	475	700	1,075	1,075	1,625	1,625	4,025	3,200	2,950	2,650	1,800	1,500	1,725	1,475	1,175
250	875	1,150	650	900	800	1,075	475	700	1,050	1,050	1,600	1,600	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
225	875	1,150	675	900	825	1,075	500	700	1,025	1,025	1,575	1,575	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
200	875	1,150	675	900	825	1,075	500	725	1,025	1,050	1,550	1,550	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
175	875	1,150	700	900	825	1,075	525	725	1,000	1,050	1,500	1,500	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
150	875	1,150	700	900	825	1,100	525	725	975	1,050	1,475	1,475	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
125	875	1,175	700	900	850	1,100	525	725	975	1,050	1,450	1,450	3,800	3,050	2,850	2,600	1,825	1,525	1,750	1,500	1,200
100	900	1,175	700	925	850	1,100	525	750	950	1,050	1,425	1,425	3,575	2,825	2,600	2,525	1,825	1,525	1,750	1,500	1,200
75	900	1,175	700	925	850	1,100	550	750	925	1,050	1,400	1,400	3,325	2,600	2,350	2,450	1,825	1,525	1,750	1,500	1,200
50	900	1,175	700	925	850	1,100	550	750	900	1,050	1,375	1,375	3,075	2,350	2,100	2,350	1,825	1,525	1,750	1,500	1,200
25	900	1,175	700	925	850	1,100	550	750	900	1,050	1,350	1,350	2,850	2,125	1,850	2,275	1,825	1,525	1,750	1,500	1,200
0	900	1,175	700	925	850	1,100	550	750	875	1,050	1,325	1,325	2,575	1,875	1,600	2,175	1,825	1,525	1,750	1,500	1,200

HOB_{fs} = 65 m
Low HOB_{min} = 115 m
High HOB_{min} = 259 m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 4.6e.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							1,775			3,650			0–5				0–650	
1,150							1,825			3,675			0–5				0–750	
1,100							1,850			3,675			0–10				0–800	
1,050							1,875	0		3,675			0–10				0–850	
1,000							1,900	150		3,675			0–15				0–950	
950							1,925	350		3,675		0	0–20			0	0–1,000	
900							1,950	450		3,650		0–5	0–25			0–50	0–1,050	
850							1,975	550		3,625		0–5	0–35			0–350	0–1,050	
800							2,000	625		3,600		0–5	5–45			0–450	50–1,100	
775							2,000	650		3,600		0–5	5–55			0–500	200–1,150	
750							2,025	675		3,600		0–10	5–70			0–550	300–1,150	
725							2,025	700		3,575		0–10	5–85			0–550	350–1,150	
700							2,025	725		3,575		0–10	5–100			0–600	400–1,200	
675							2,050	750		3,550		0–15	5–125			0–600	450–1,200	
650							2,050	775		3,550		0–15	10–160			0–650	500–1,200	
625				0			2,050	800		3,525	0	0–20	10–200		0	0–700	500–1,200	
600				50			2,075	800		3,525	0–5	0–20	10–240		0–50	0–700	550–1,250	
575				125			2,075	825		3,500	0–5	0–25	15–300		0–200	0–700	600–1,250	
550				175			2,075	850	0	3,475	0–5	0–35	15–380		0–250	0–750	600–1,250	
525				225			2,075	875	125	3,450	0–5	0–45	20–500		0–300	0–750	650–1,250	
500	0			275			2,100	875	200	3,450	0–10	5–50	25–600		0–350	50–800	650–1,300	
475	50			325		0	2,100	900	250	3,425	0–10	5–75	40–900		0–400	150–800	650–1,300	
450	125			375		575	2,100	900	300	3,400	0–15	5–100	50–1,140		0–400	250–800	700–1,300	
425	175		0	400		600	2,100	925	325	3,375	0–15	5–125	60–1,500		0–450	300–800	700–1,300	
400	225		25	425		600	2,125	925	375	3,350	0–20	10–170	80–1,980		0–450	300–850	700–1,300	
375	350	0	75	475		600	2,125	950	400	3,325	0–25	10–220	120–2,600		0–500	350–850	750–1,300	
350	475	25	125	475		625	2,125	950	400	3,300	0–30	15–270	140–3,200		0–500	400–850	750–1,350	
325	500	75	175	500		625	2,125	950	425	3,275	0–40	15–330	160–3,960		0–500	400–850	750–1,350	
300	550	100	200	525		625	2,125	975	450	3,250	5–45	20–390	200–4,680		50–550	400–850	750–1,350	
275	575	150	250	550		625	2,125	975	475	3,225	5–55	20–470	230–5,650	0	150–550	450–900	800–1,350	0
250	575	175	275	550		625	2,125	975	475	3,200	5–65	25–550	270–6,600	0–5	200–550	450–900	800–1,350	0–50
225	600	225	275	575	0	650	2,150	975	500	3,175	5–75	30–650	320–7,800	0–5	200–600	450–900	800–1,350	0–150
200	625	275	300	600	450	650	2,150	1,000	500	3,150	5–100	40–900	440–10,800	0–5	250–600	500–900	800–1,350	0–150
175	650	350	325	600	525	650	2,150	1,000	500	3,125	5–125	50–1,100	540–13,200	0–5	250–600	500–900	800–1,350	0–200
150	650	375	325	625	550	650	2,150	1,000	525	3,075	10–160	60–1,400	680–16,800	0–5	300–600	500–900	800–1,350	0–200
125	650	375	350	625	575	650	2,075	975	525	3,050	10–200	75–1,850	900–22,200	0–5	300–600	500–900	800–1,350	0–250
100	650	375	350	650	575	650	1,900	900	475	3,025	10–250	90–2,250	1,080–27,000	0–10	300–600	500–900	800–1,350	0–250
75	650	400	375	625	575	650	1,750	825	450	2,975	15–320	120–2,900	1,400–34,800	0–10	300–600	500–900	800–1,350	0–250
50	625	375	350	600	525	625	1,575	750	400	2,950	FALLOUT GOVERNS							
25	550	350	300	575	500	575	1,425	675	375	2,900								
0	450	300	250	500	425	500	1,250	600	325	2,875								

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Figure 4.6e continued.

[1]Small Free Rocket.

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.

Yield KT	*HOB*	*Estimated radii in meters of 2 rad/hr contour of induced radiation, 1 hour after burst. (See note 2.)*				*Estimated induced radiation intensity, 1 hour after burst, at GZ. In rad/hr (See note 2.)*			
		Soil type I (Liberia, Africa)	*Soil type II (Nevada desert)*	*Soil type III (lava clay, Hawaii)*	*Soil type IV (beach sand, Pensacola, Fla)*	*Soil type I*	*Soil type II*	*Soil type III*	*Soil type IV*
ALFA/.5	Low	0–350	150–550	450–850	0	0–20	10–175	85–2,100	0
	High	0–350	150–550	450–850	0	0–15	5–120	55–1,350	0
BRAVO/1	Low	50–400	300–600	450–950	0	5–40	15–350	170–4,200	0
	High	0–400	300–600	450–950	0	0–20	10–185	90–2,220	0
CHARLIE/2	Low	100–500	350–700	600–1,050	0–50	5–80	30–700	340–8,400	0–5
	High	0–500	350–700	600–1,050	0	0–35	15–280	140–3,400	0
DELTA/5	Low	200–550	450–800	700–1,150	0–150	10–160	60–1,450	700–17,400	0–5
	High	50–550	450–800	700–1,150	0	5–50	20–450	220–5,400	0
ECHO/10	Low	300–600	500–900	800–1,350	0–250	15–250	120–2,900	1,400–34,800	0–10
	High	200–550	450–900	800–1,350	0–50	5–65	25–550	270–6,600	0–5

NOTES: 1. For description of chemical composition and effects of variations in chemical composition in soil types, see FM 101-31-1, app III, annex F.

2. For range dependent delivery systems intensities and 2 rad/hr contours are given for minimum ranges.

Figure 4.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	*OBSTACLES TO MOVEMENT*							*CASUALTIES TO EXPOSED PERSONNEL*		
	Foot and wheeled vehicle movement				*Tracked vehicle movement*					
	Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*
ALFA/.5	250	300	300	450	250	300	300	150	200	200
BRAVO/1	300	400	400	700	300	400	400	200	300	300
CHARLIE/2	350	500	550	900	350	500	550	250	400	400
DELTA/5	600	800	900	1,400	600	800	900	400	600	600
ECHO/10	750	1,000	1,100	1,900	750	1,000	1,100	600	800	900

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 4.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	*AIRCRAFT SAFETY RADII-meters (See note 2.)*		
	Light fixed wing	*Recon and obsn hel*	*Transport and util hel*
ALFA/.5	4,000	4,000	4,000
BRAVO/1	5,000	5,000	5,000
CHARLIE/2	6,000	6,000	5,000
DELTA/5	9,000	9,000	7,000
ECHO/10	10,000	10,000	9,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of safety.

Figure 4.7c.

CONTINGENT EFFECTS Tables (continued)
Small Free Rocket

FIRE AREAS (See note.)

Yield KT	HOB	Expected radii for ignition of wildland fuels during fire season—meters							
		Dry climate (25 percent relative humidity)				Damp climate (75 percent relative humidity)			
		Class I	Class II	Class III	Class IV	Class I	Class II	Class III	Class IV
ALFA/.5	Air	800	700	700	600	700	700	600	400
	Impact	500	500	400	400	500	500	400	400
BRAVO/1	Air	1,100	1,000	900	700	1,000	1,000	800	600
	Impact	700	600	500	500	600	600	500	400
CHARLIE/2	Air	1,400	1,300	1,000	800	1,300	1,300	1,100	800
	Impact	900	800	700	600	800	800	700	500
DELTA/5	Air	2,000	1,800	1,700	1,400	1,800	1,800	1,500	1,100
	Impact	1,200	1,100	1,000	800	1,100	1,100	900	700
ECHO/10	Air	2,600	2,400	2,200	1,800	2,400	2,400	2,100	1,500
	Impact	1,500	1,400	1,300	1,100	1,400	1,400	1,200	900

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 4.7.d

CRATER DIMENSIONS (See note.)

Yield KT	Approx crater dimensions for various soil types—meters							
	Hard rock (Granite and sandstone)		Soft rock (dry soil or soft rock)		Saturated soil (water slowly fills crater)		Saturated soil (water rapidly fills crater)	
	Radius	Depth	Radius	Depth	Radius	Depth	Radius	Depth
ALFA/.5	13	5	16	6	24	8	31	4
BRAVO/1	16	6	20	7	30	10	39	5
CHARLIE/2	20	6	25	8	37	12	50	6
DELTA/5	27	8	34	10	50	15	67	7
ECHO/10	34	10	42	12	63	18	84	8

NOTE: Based on contact surface burst, for more detailed analysis, see engineer element.

Figure 4.7e.

TACTICAL SYSTEM ACCURACY DATA
Small Free Rocket

All distances in meters

Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)	Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)
		PE_R	PE_d	PE_h				PE_R	PE_d	PE_h	
3,000	42	15	30	15	85	19,000	263	95	190	95	515
4,000	56	20	40	20	110	20,000	276	100	200	100	540
5,000	69	25	50	25	135	21,000	290	105	210	105	570
6,000	83	30	60	30	165	22,000	304	110	220	110	595
7,000	97	35	70	35	190	23,000	318	115	230	115	625
8,000	111	40	80	40	220	24,000	332	120	240	120	650
9,000	125	45	90	45	245	25,000	345	125	250	125	675
10,000	138	50	100	50	270						
11,000	152	55	110	55	300						
12,000	166	60	120	60	325						
13,000	180	65	130	65	355						
14,000	194	70	140	70	380						
15,000	207	75	150	75	405						
16,000	221	80	160	80	435						
17,000	235	85	170	85	460						
18,000	249	90	180	90	490						

[1]Equivalent CEP= $1.2345\ (PE_R^2 + PE_d^2)^{1/2}$.

Figure 4.8.

[1]Small Free Rocket.

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CHAPTER 5
LARGE FREE ROCKET

5.1 GENERAL

a. Orientation. This chapter contains employment data for the large free rocket with its associated warhead sections fired from a mobile launcher.

b. Weapon characteristics.

(1) *Yields.* The warhead sections for the large free rocket have yields of Delta/5 KT, Echo/10 KT, Foxtrot/20 KT, Golf/50 KT, and Hotel/100 KT.

(2) *Fuzing.* The fuzing for the large free rocket provides airburst and impact fuzing options. The airburst option is fuzed by time fuzes which are set for the desired time of flight by the delivery unit. Setting the fuze for airburst precludes the use of the impact fuzing system as a backup.

(3) *Preinitiation.* See figure **13.7** for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the large free rocket are 7,000 meters and 40,000 meters.

(2) *Tactical system accuracy.* The horizontal and vertical dispersion errors for the large free rocket are dependent on range. Tactical system accuracy data are contained in figure 5.8.

(3) *Unit carrying capacity.* A large free rocket unit can draw, transport, and store at any one time a total of 20 complete rounds per battalion.

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are considered to be applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

Situation	*Time (minutes)*	*Remarks*
I[1]	40	For situation I, add 20 minutes if warhead section must be removed and a new warhead section with required yield mated to rocket.
II[2]	5	

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[1]Situation (high readiness)—the complete round and launcher are in a firing position and survey is completed. Preliminary firing data for a specific target are *not* available. Prefire checkouts which can be performed prior to the receipt of a fire mission have been completed. (May be used to engage targets of opportunity within range.)

[2]Situation II (maximum readiness)—firing data for a specific target have been computed and applied to the weapon system. The unit is awaiting an order to fire. (Typical of readiness to engage on-call target.)

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes, for an airburst, the desired height of burst in meters. For a contact surface burst, an impact option is requested.

[1]Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000
7,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
8,000	3,400	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
9,000	3,400	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1
10,000	3,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
11,000	3,400	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
12,000	3,500	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
13,000	3,500	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
14,000	3,500	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
15,000	3,500	.7/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1
16,000	3,500	.6/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.1	
17,000	3,500	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.1	
18,000	3,600	.6/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1	
19,000	3,600	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	
20,000	3,600	.5/.7	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	
21,000	3,600	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	
22,000	3,600	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	
23,000	3,600	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2		
24,000	3,700	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.1		
25,000	3,700	.2/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		
26,000	3,700	.1/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		
27,000	3,700	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		
28,000	3,700	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		
29,000	3,700	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1			
30,000	3,800	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
31,000	3,800	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
32,000	3,800	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
33,000	3,800	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			
34,000	3,800	.0/.3	.0/.2	.0/.2	.0/.1				
35,000	3,800	.0/.3	.0/.2	.0/.2	.0/.1				
36,000	3,900	.0/.3	.0/.2	.0/.2	.0/.1				
37,000	3,900	.0/.2	.0/.2	.0/.2	.0/.1				
38,000	3,900	.0/.2	.0/.2	.0/.1					
39,000	3,900	.0/.2	.0/.2	.0/.1					
40,000	3,900	.0/.2	.0/.2	.0/.1					

DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800			Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			750	1,025	190	175
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			750	1,000	220	192
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			750	1,000	245	210
.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			725	1,000	270	227
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			725	975	300	245
.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			700	975	325	262
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			675	975	355	280
.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			675	950	380	297
.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			650	950	405	315
.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			625	925	435	332
.7/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1			600	900	460	350
.7/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1			575	900	490	367
.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1			550	875	515	385
.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1			525	850	540	402
.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1			500	850	570	420
.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1			475	825	595	437
.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1			425	800	625	455
.5/.8	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			375	775	650	472
.5/.7	.3/.5	.2/.3	.1/.2	.0/.1				325	750	675	490
.5/.7	.3/.5	.2/.3	.1/.2	.0/.1				250	725	705	507
.4/.7	.3/.5	.1/.3	.1/.2	.0/.1				150	700	730	525
.4/.7	.3/.5	.1/.3	.1/.2	.0/.1				0	675	760	542
.4/.7	.2/.4	.1/.3	.0/.2	.0/.1				0	625	785	560
.3/.6	.2/.4	.1/.3	.0/.2	.0/.1				0	600	810	577
.3/.6	.2/.4	.1/.3	.0/.2	.0/.1				0	550	840	595
.2/.6	.1/.4	.0/.3	.0/.2	.0/.1				0	500	865	612
.2/.6	.1/.4	.0/.2	.0/.2	.0/.1				0	450	895	630
.2/.5	.1/.4	.0/.2	.0/.2	.0/.1				0	375	920	647
.1/.5	.0/.4	.0/.2	.0/.2	.0/.1				0	325	945	665
.0/.5	.0/.3	.0/.2	.0/.1					0	200	975	682
.0/.5	.0/.3	.0/.2	.0/.1					0	0	1,000	700
.0/.4	.0/.3	.0/.2	.0/.1					0	0	1,030	717
.0/.4	.0/.3	.0/.2	.0/.1					0	0	1,055	735
.0/.4	.0/.3	.0/.2	.0/.1					0	0	1,080	752

Figure 5.1a(1).

EXPOSED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES										
		Target radius (meters)								Target radius (meters)							(meters)			
(meters)	(meters)	500	700	900	1,100	1,300	1,500	1,700	1,900	400	800	1,200	1,600	2,000	2,400	2,800	Prompt	Delayed	(meters)	(meters)
7,000	3,400	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	700	975	190	303
8,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	700	975	220	320
9,000	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	675	950	245	338
10,000	3,400	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	650	950	270	355
11,000	3,400	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	625	925	300	373
12,000	3,400	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	625	925	325	390
13,000	3,500	.7/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	600	900	355	408
14,000	3,500	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.2/.4	.1/.2	.1/.2	.0/.1	575	875	380	425
15,000	3,500	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.1		.9/.9	.7/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1	550	875	405	443
16,000	3,500	.6/.8	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1	500	850	435	460
17,000	3,500	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1	475	825	460	478
18,000	3,500	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		425	800	490	495
19,000	3,600	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1		400	775	515	513
20,000	3,600	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1			.8/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.1		325	750	540	530
21,000	3,600	.2/.6	.2/.5	.1/.3	.0/.3	.0/.2	.0/.1			.8/.9	.5/.8	.3/.5	.2/.3	.1/.2	.1/.1		275	725	570	548
22,000	3,600	.1/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.1			.8/.9	.5/.7	.3/.5	.1/.3	.1/.2	.0/.1		175	700	595	565
23,000	3,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.1/.3	.1/.2	.0/.1		0	675	625	583
24,000	3,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.4/.7	.3/.4	.1/.3	.1/.2	.0/.1		0	650	650	600
25,000	3,700	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				.6/.9	.4/.7	.2/.4	.1/.3	.0/.2	.0/.1		0	600	675	618
26,000	3,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.5/.8	.4/.6	.2/.4	.1/.3	.0/.2	.0/.1		0	550	705	635
27,000	3,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.4/.8	.3/.6	.2/.4	.1/.2	.0/.2	.0/.1		0	525	730	653
28,000	3,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.4/.8	.3/.6	.1/.4	.0/.2	.0/.2	.0/.1		0	475	760	670
29,000	3,700	.0/.3	.0/.3	.0/.2	.0/.1					.3/.7	.2/.6	.1/.4	.0/.2	.0/.1			0	400	785	688
30,000	3,700	.0/.3	.0/.2	.0/.2	.0/.1					.2/.7	.2/.5	.0/.3	.0/.2	.0/.1			0	325	810	705
31,000	3,800	.0/.3	.0/.2	.0/.2	.0/.1					.1/.7	.0/.5	.0/.3	.0/.2	.0/.1			0	250	840	723
32,000	3,800	.0/.3	.0/.2	.0/.2	.0/.1					.0/.6	.0/.5	.0/.3	.0/.2	.0/.1			0	50	865	740
33,000	3,800	.0/.2	.0/.2	.0/.1						.0/.6	.0/.5	.0/.3	.0/.2	.0/.1			0	0	895	758
34,000	3,800	.0/.2	.0/.2	.0/.1						.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	0	920	775
35,000	3,800	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	945	793
36,000	3,800	.0/.2	.0/.1							.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	975	810
37,000	3,900	.0/.2	.0/.1							.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	0	1,000	828
38,000	3,900	.0/.2								.0/.4	.0/.3	.0/.2	.0/.1				0	0	1,030	845
39,000	3,900	.0/.1								.0/.4	.0/.3	.0/.2	.0/.1				0	0	1,055	863
40,000	3,900	.0/.1								.0/.4	.0/.3	.0/.2	.0/.1				0	0	1,080	880

Figure 5.1a(2).

LFR 1

[1]Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	190	0
8,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	220	0
9,000	2,200	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	245	0
10,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	270	0
11,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	300	0
12,000	2,300	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	325	0
13,000	2,300	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	355	0
14,000	2,300	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	380	0
15,000	2,300	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	405	0
16,000	2,400	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	435	0
17,000	2,400	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1	800	1,050	460	0
18,000	2,400	.7/.9	.6/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	490	0
19,000	2,400	.7/.9	.6/.8	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	515	0
20,000	2,400	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	540	0
21,000	2,400	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	570	0
22,000	2,500	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	595	0
23,000	2,500	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	625	0
24,000	2,500	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	650	0
25,000	2,500	.5/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	675	0
26,000	2,500	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	705	0
27,000	2,600	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	730	0
28,000	2,600	.5/.8	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	760	0
29,000	2,600	.4/.8	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	785	0
30,000	2,600	.4/.8	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	810	0
31,000	2,600	.4/.8	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	840	0
32,000	2,600	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	865	0
33,000	2,700	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	895	0
34,000	2,700	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	920	0
35,000	2,700	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	945	0
36,000	2,700	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	975	0
37,000	2,700	.3/.6	.3/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	1,000	0
38,000	2,700	.2/.6	.3/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.8	.4/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	1,030	0
39,000	2,800	.2/.6	.3/.5	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.8	.4/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	1,055	0
40,000	2,800	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.5/.8	.4/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,050	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.1a(3).

EXPOSED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	4,200	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	190	188
8,000	4,200	.9/.9	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	220	205
9,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	245	223
10,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	270	240
11,000	4,300	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,125	300	258
12,000	4,300	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	875	1,100	325	275
13,000	4,300	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,100	355	293
14,000	4,300	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	380	310
15,000	4,300	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	405	328
16,000	4,300	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	825	1,050	435	345
17,000	4,400	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	725	1,050	460	363
18,000	4,400	.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	700	1,025	490	380
19,000	4,400	.7/.9	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	675	1,025	515	398
20,000	4,400	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	650	1,000	540	415
21,000	4,400	.6/.8	.5/.7	.3/.6	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	625	975	570	433
22,000	4,500	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	600	975	595	450
23,000	4,500	.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		575	950	625	468
24,000	4,500	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		550	925	650	485
25,000	4,500	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.1	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		500	900	675	503
26,000	4,500	.3/.7	.3/.6	.2/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	.6/.8	.4/.6	.3/.4	.1/.3	.1/.2	.0/.1		450	875	705	520
27,000	4,500	.3/.6	.2/.5	.2/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		425	850	730	538
28,000	4,600	.2/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		350	825	760	555
29,000	4,600	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		275	800	785	573
30,000	4,600	.1/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		.5/.8	.3/.5	.2/.4	.1/.2	.1/.2	.0/.1		200	775	810	590
31,000	4,600	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.4/.7	.3/.5	.2/.4	.1/.2	.0/.2	.0/.1		0	750	840	608
32,000	4,600	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.4/.7	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1		0	700	865	625
33,000	4,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.4/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	675	895	643
34,000	4,700	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.3/.7	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	625	920	660
35,000	4,700	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.3/.6	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		0	600	945	678
36,000	4,700	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.2/.6	.2/.4	.1/.3	.0/.2	.0/.1			0	550	975	695
37,000	4,700	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.2/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	475	1,000	713
38,000	4,700	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.2/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	425	1,030	730
39,000	4,700	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	350	1,055	748
40,000	4,800	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	250	1,080	765

Figure 5.1b(1).

LFR 1

[1]Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	400	800	1,200	1,600	2,000	2,400	2,800	3,200	Prompt	Delayed	(meters)	(meters)
7,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,100	190	350
8,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	220	367
9,000	4,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	850	1,075	245	385
10,000	4,200	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	825	1,050	270	402
11,000	4,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	725	1,050	300	420
12,000	4,300	.8/.9	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	700	1,025	325	437
13,000	4,300	.8/.9	.6/.8	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	675	1,025	355	455
14,000	4,300	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	650	1,000	380	472
15,000	4,300	.7/.9	.5/.7	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	975	405	490
16,000	4,300	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		600	975	435	507
17,000	4,400	.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		575	950	460	525
18,000	4,400	.5/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		550	925	490	542
19,000	4,400	.5/.8	.3/.6	.2/.5	.1/.3	.1/.3	.1/.2	.0/.2	.0/.1	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		500	900	515	560
20,000	4,400	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.9	.5/.6	.3/.4	.1/.3	.1/.2	.0/.1		450	875	540	577
21,000	4,400	.3/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.9/.9	.7/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		425	850	570	595
22,000	4,400	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		.9/.9	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		350	825	595	612
23,000	4,500	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		275	800	625	630
24,000	4,500	.1/.6	.1/.5	.0/.3	.0/.3	.0/.2	.0/.1			.8/.9	.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		200	775	650	647
25,000	4,500	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.8/.9	.5/.8	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1		0	750	675	665
26,000	4,500	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1		0	700	705	682
27,000	4,500	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.6/.9	.4/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	675	730	700
28,000	4,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				.6/.8	.4/.7	.3/.5	.1/.3	.1/.2	.0/.1			0	625	760	717
29,000	4,600	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.5/.8	.4/.7	.3/.5	.1/.3	.0/.2	.0/.1			0	600	785	735
30,000	4,600	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.4/.8	.3/.6	.2/.4	.0/.3	.0/.2	.0/.1			0	550	810	752
31,000	4,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.3/.7	.3/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	475	840	770
32,000	4,600	.0/.3	.0/.3	.0/.2	.0/.1					.2/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	425	865	787
33,000	4,600	.0/.3	.0/.2	.0/.2	.0/.1					.2/.7	.2/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	350	895	805
34,000	4,700	.0/.3	.0/.2	.0/.2	.0/.1					.1/.7	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	250	920	822
35,000	4,700	.0/.2	.0/.2	.0/.2	.0/.1					.0/.6	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	0	945	840
36,000	4,700	.0/.2	.0/.2	.0/.1						.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	0	975	857
37,000	4,700	.0/.2	.0/.2	.0/.1						.0/.6	.0/.5	.0/.3	.0/.2	.0/.1				0	0	1,000	875
38,000	4,700	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	1,030	892
39,000	4,700	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	1,055	910
40,000	4,800	.0/.2	.0/.1							.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	0	1,080	927

Figure 5.1b(2).

EXPOSED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES										
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	400	800	1,200	1,600	2,000	2,400	2,800	3,200	Prompt	Delayed	(meters)	(meters)
7,000	2,700	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	190	0
8,000	2,700	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	220	0
9,000	2,800	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	245	0
10,000	2,800	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	270	0
11,000	2,800	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	300	0
12,000	2,800	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	325	0
13,000	2,800	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	355	0
14,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	380	0
15,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	405	0
16,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	435	0
17,000	2,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	460	0
18,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	490	0
19,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	515	0
20,000	3,000	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	540	0
21,000	3,000	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	570	0
22,000	3,000	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	595	0
23,000	3,000	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	900	1,175	625	0
24,000	3,000	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	650	0
25,000	3,000	.5/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	675	0
26,000	3,100	.5/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	705	0
27,000	3,100	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	730	0
28,000	3,100	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	760	0
29,000	3,100	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	785	0
30,000	3,100	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	810	0
31,000	3,200	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	840	0
32,000	3,200	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	865	0
33,000	3,200	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	895	0
34,000	3,200	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	920	0
35,000	3,200	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	945	0
36,000	3,200	.4/.7	.3/.5	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	975	0
37,000	3,300	.4/.6	.3/.5	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	1,000	0
38,000	3,300	.3/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.6/.8	.4/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	1,030	0
39,000	3,300	.3/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	1,055	0
40,000	3,300	.3/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.9	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	900	1,175	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.1b(3).

LFR 1

[1]Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Prompt	Delayed	(meters)	(meters)
7,000	6,000	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	190	205
8,000	6,000	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	220	222
9,000	6,100	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,225	245	240
10,000	6,100	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	270	257
11,000	6,100	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	300	275
12,000	6,100	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	325	292
13,000	6,100	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,175	355	310
14,000	6,100	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	380	327
15,000	6,200	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	405	345
16,000	6,200	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,150	435	362
17,000	6,200	.8/.9	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1		1,125	1,150	460	380
18,000	6,200	.8/.9	.7/.8	.6/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.9/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1		1,125	1,150	490	397
19,000	6,200	.8/.9	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.8/.9	.6/.8	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1		1,125	1,125	515	415
20,000	6,200	.8/.9	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.8/.9	.6/.8	.4/.5	.2/.4	.2/.2	.1/.2	.1/.1		1,100	1,100	540	432
21,000	6,300	.7/.9	.6/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		1,000	1,075	570	450
22,000	6,300	.7/.9	.6/.8	.5/.7	.4/.6	.3/.4	.3/.4	.2/.3	.2/.3	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		725	1,075	595	467
23,000	6,300	.6/.9	.4/.8	.3/.7	.2/.5	.1/.4	.1/.4	.1/.3	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		700	1,050	625	485
24,000	6,300	.5/.8	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		675	1,025	650	502
25,000	6,300	.5/.8	.3/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		650	1,000	675	520
26,000	6,300	.4/.8	.3/.7	.2/.6	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		625	975	705	537
27,000	6,400	.4/.7	.2/.7	.2/.6	.1/.5	.1/.4	.1/.3	.0/.2	.0/.2	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		575	975	730	555
28,000	6,400	.3/.7	.2/.6	.2/.5	.1/.4	.1/.4	.1/.3	.0/.2	.0/.2	.6/.8	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		525	950	760	572
29,000	6,400	.3/.7	.2/.6	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		500	925	785	590
30,000	6,400	.2/.6	.2/.6	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.6/.8	.4/.6	.3/.4	.1/.3	.1/.2	.1/.2	.0/.1		450	900	810	607
31,000	6,400	.2/.6	.2/.5	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		375	850	840	625
32,000	6,400	.1/.6	.1/.5	.1/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1			300	825	865	642
33,000	6,500	.1/.6	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1			200	800	895	660
34,000	6,500	.0/.5	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1			0	775	920	677
35,000	6,500	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.4/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.1			0	725	945	695
36,000	6,500	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.4/.7	.3/.5	.1/.4	.1/.3	.0/.2	.0/.1			0	700	975	712
37,000	6,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.3/.7	.2/.5	.1/.4	.1/.2	.0/.2	.0/.1			0	650	1,000	730
38,000	6,600	.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.3/.7	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1			0	600	1,030	747
39,000	6,600	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.2/.6	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1			0	550	1,055	765
40,000	6,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.2/.6	.2/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	475	1,080	782

Figure 5.1c(1).

EXPOSED Personnel Targets
Large Free Rocket

HIGH Airburst

Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	5,900	.9/.9	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	1,150	1,175	190	409
8,000	6,000	.9/.9	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	1,150	1,150	220	426
9,000	6,000	.9/.9	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	1,150	1,150	245	444
10,000	6,000	.9/.9	.9/.9	.8/.9	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.9/.9	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	1,125	1,125	270	461
11,000	6,000	.9/.9	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	1,125	1,125	300	479
12,000	6,000	.9/.9	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,125	1,125	325	496
13,000	6,000	.9/.9	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	1,075	1,075	355	514
14,000	6,100	.9/.9	.8/.9	.7/.8	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	825	1,075	380	531
15,000	6,100	.8/.9	.7/.9	.5/.8	.3/.7	.5/.6	.2/.4	.1/.4	.1/.3	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	725	1,050	405	549
16,000	6,100	.8/.9	.6/.9	.4/.8	.3/.7	.2/.5	.1/.4	.1/.3	.1/.3	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	700	1,025	435	566
17,000	6,100	.7/.9	.5/.8	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	650	1,025	460	584
18,000	6,100	.7/.9	.5/.8	.4/.7	.2/.6	.2/.5	.1/.4	.1/.3	.1/.2	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	625	1,000	490	601
19,000	6,200	.6/.9	.4/.8	.3/.7	.2/.6	.1/.5	.1/.4	.1/.3	.0/.2	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	600	975	515	619
20,000	6,200	.5/.8	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	550	950	540	636
21,000	6,200	.5/.8	.3/.7	.2/.6	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		525	925	570	654
22,000	6,200	.4/.8	.3/.7	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.7/.9	.5/.6	.3/.4	.1/.3	.1/.2	.1/.1		475	900	595	671
23,000	6,200	.3/.7	.3/.6	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.7/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		400	875	625	689
24,000	6,200	.3/.7	.2/.6	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		350	850	650	706
25,000	6,300	.2/.7	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		250	825	675	724
26,000	6,300	.1/.6	.1/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		125	775	705	741
27,000	6,300	.0/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	.5/.8	.3/.6	.2/.4	.1/.2	.0/.2	.0/.1		0	750	730	759
28,000	6,300	.0/.5	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	.5/.7	.3/.5	.2/.4	.1/.2	.0/.2	.0/.1		0	700	760	776
29,000	6,300	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.4/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	675	785	794
30,000	6,300	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.4/.7	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		0	625	810	811
31,000	6,400	.0/.4	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.3/.7	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		0	575	840	829
32,000	6,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.3/.6	.2/.5	.1/.3	.0/.2	.0/.1			0	525	865	846
33,000	6,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.2/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	450	895	864
34,000	6,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.2/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	375	920	881
35,000	6,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	275	945	899
36,000	6,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	75	975	916
37,000	6,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	1,000	934
38,000	6,500	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	0	1,030	951
39,000	6,600	.0/.2	.0/.2	.0/.2	.0/.1					.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	0	1,055	969
40,000	6,600	.0/.2	.0/.2	.0/.2	.0/.1					.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	1,080	986

Figure 5.1c(2).

LFR 1

[1]Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)											
(meters)	(meters)	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Prompt	Delayed	(meters)	(meters)
7,000	3,600	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	190	0
8,000	3,600	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	220	0
9,000	3,600	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	245	0
10,000	3,600	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	270	0
11,000	3,600	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	300	0
12,000	3,600	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	325	0
13,000	3,700	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	355	0
14,000	3,700	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	380	0
15,000	3,700	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	405	0
16,000	3,700	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	435	0
17,000	3,700	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	460	0
18,000	3,700	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	490	0
19,000	3,800	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	515	0
20,000	3,800	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	540	0
21,000	3,800	.7/.9	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	570	0
22,000	3,800	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	595	0
23,000	3,800	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	625	0
24,000	3,900	.6/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	650	0
25,000	3,900	.6/.8	.5/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	675	0
26,000	3,900	.6/.8	.5/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	705	0
27,000	3,900	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	730	0
28,000	3,900	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	760	0
29,000	3,900	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	785	0
30,000	4,000	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	810	0
31,000	4,000	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	840	0
32,000	4,000	.5/.8	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	865	0
33,000	4,000	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	895	0
34,000	4,000	.5/.7	.4/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	920	0
35,000	4,000	.5/.7	.4/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	945	0
36,000	4,100	.4/.7	.4/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	975	0
37,000	4,100	.4/.7	.4/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	1,000	0
38,000	4,100	.4/.7	.4/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	1,030	0
39,000	4,100	.4/.7	.4/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	1,055	0
40,000	4,100	.4/.7	.4/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.1c(3).

EXPOSED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	Prompt	Delayed	(meters)	(meters)
7,000	8,900	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	1,600	1,600	190	234
8,000	8,900	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.3/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.3/.3	.1/.2	.1/.2	1,600	1,600	220	251
9,000	8,900	.9/.9	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,600	1,600	245	269
10,000	8,900	.9/.9	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,600	1,600	270	286
11,000	8,900	.9/.9	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,625	1,625	300	304
12,000	8,900	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,625	1,625	325	321
13,000	9,000	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.1	1,625	1,625	355	339
14,000	9,000	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,625	1,625	380	356
15,000	9,000	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,625	1,625	405	374
16,000	9,000	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,625	1,625	435	391
17,000	9,000	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,650	1,650	460	409
18,000	9,000	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,650	1,650	490	426
19,000	9,100	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,650	1,650	515	444
20,000	9,100	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,650	1,650	540	461
21,000	9,100	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,650	1,650	570	479
22,000	9,100	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,650	1,650	595	496
23,000	9,100	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,650	1,650	625	514
24,000	9,100	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,625	1,625	650	531
25,000	9,200	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.3/.3	.1/.2	.1/.2	1,625	1,625	675	549
26,000	9,200	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.3/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.3	.3/.3	.1/.2	.1/.2	1,600	1,600	705	566
27,000	9,200	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	1,600	1,600	730	584
28,000	9,200	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	1,525	1,525	760	601
29,000	9,200	.7/.8	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	1,325	1,325	785	619
30,000	9,300	.3/.8	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.7/.9	.5/.7	.3/.6	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	750	1,150	810	636
31,000	9,300	.3/.8	.1/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	.7/.9	.4/.7	.3/.6	.2/.4	.1/.3	.1/.3	.0/.2	.0/.2	700	1,125	840	654
32,000	9,300	.3/.8	.1/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.2	675	1,125	865	671
33,000	9,300	.2/.8	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	.6/.8	.4/.7	.2/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.2	625	1,100	895	689
34,000	9,300	.2/.7	.1/.6	.0/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	.6/.8	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.2	575	1,075	920	706
35,000	9,300	.1/.7	.1/.6	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	.5/.8	.4/.7	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	525	1,025	945	724
36,000	9,400	.1/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.5/.8	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	475	1,000	975	741
37,000	9,400	.1/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.5/.8	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	400	975	1,000	759
38,000	9,400	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	325	950	1,030	776
39,000	9,400	.0/.6	.0/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	200	925	1,055	794
40,000	9,400	.0/.6	.0/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.4/.7	.3/.6	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.1	0	875	1,080	811

LFR[1]

Figure 5.1d(1).

[1]Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	Prompt	Delayed	(meters)	(meters)
7,000	8,800	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	190	510
8,000	8,900	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	220	527
9,000	8,900	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	245	545
10,000	8,900	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	270	562
11,000	8,900	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	300	580
12,000	8,900	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	325	597
13,000	8,900	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	355	615
14,000	9,000	.9/.8	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,625	1,625	380	632
15,000	9,000	.9/.9	.7/.8	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,625	1,625	405	650
16,000	9,000	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,600	1,600	435	667
17,000	9,000	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	1,575	1,575	460	685
18,000	9,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	1,475	1,475	490	702
19,000	9,000	.8/.9	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.0/.2	1,200	1,200	515	720
20,000	9,100	.3/.9	.2/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.7/.9	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.2	725	1,150	540	737
21,000	9,100	.3/.8	.1/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	.7/.9	.4/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.2	700	1,125	570	755
22,000	9,100	.2/.8	.1/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	.6/.9	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.2	650	1,100	595	772
23,000	9,100	.2/.8	.1/.6	.0/.5	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	.6/.9	.4/.7	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.1	625	1,075	625	790
24,000	9,100	.2/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.6/.8	.4/.7	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.1	575	1,050	650	807
25,000	9,200	.1/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.6/.8	.4/.7	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.1	525	1,025	675	825
26,000	9,200	.1/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.5/.8	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	450	1,000	705	842
27,000	9,200	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		.5/.8	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	375	975	730	860
28,000	9,200	.0/.6	.0/.5	.0/.3	.0/.3	.0/.2	.0/.1			.5/.8	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	300	950	760	877
29,000	9,200	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.5/.7	.3/.6	.2/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	150	900	785	895
30,000	9,200	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.4/.7	.3/.6	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	875	810	912
31,000	9,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	825	840	930
32,000	9,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		0	800	865	947
33,000	9,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.3/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	750	895	965
34,000	9,300	.0/.4	.0/.4	.0/.3	.0/.2	.0/.1				.3/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	700	920	982
35,000	9,300	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				.3/.6	.1/.5	.1/.3	.0/.3	.0/.2	.0/.1			0	650	945	1,000
36,000	9,300	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.2/.6	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1			0	575	975	1,017
37,000	9,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	525	1,000	1,035
38,000	9,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	450	1,030	1,052
39,000	9,400	.0/.4	.0/.3	.0/.2	.0/.1					.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	350	1,055	1,070
40,000	9,400	.0/.3	.0/.3	.0/.2	.0/.1					.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	200	1,080	1,087

Figure 5.1d(2).

EXPOSED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	DELAYED CASUALTIES — Target radius (meters) 1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	5,000	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	190	0
8,000	5,000	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	220	0
9,000	5,100	.9/.9	.8/.9	.6/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	245	0
10,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	270	0
11,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	300	0
12,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	325	0
13,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	355	0
14,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	380	0
15,000	5,200	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	405	0
16,000	5,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	435	0
17,000	5,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	460	0
18,000	5,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	490	0
19,000	5,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	515	0
20,000	5,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	540	0
21,000	5,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	570	0
22,000	5,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	595	0
23,000	5,300	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	625	0
24,000	5,300	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	650	0
25,000	5,300	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	675	0
26,000	5,300	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	705	0
27,000	5,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	730	0
28,000	5,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	760	0
29,000	5,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	785	0
30,000	5,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	810	0
31,000	5,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	840	0
32,000	5,500	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	865	0
33,000	5,500	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	895	0
34,000	5,500	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	920	0
35,000	5,500	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	945	0
36,000	5,500	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	975	0
37,000	5,500	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	1,000	0
38,000	5,600	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	1,030	0
39,000	5,600	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	1,055	0
40,000	5,600	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,300	1,475	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.1d(3).

LFR I

[1]Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)											
(meters)	(meters)	2,400	2,800	3,200	3,600	4,000	4,400	4,800	5,200	2,400	2,800	3,200	3,600	4,000	4,400	4,800	5,200	Prompt	Delayed	(meters)	(meters)
7,000	11,300	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,075	2,075	190	263
8,000	11,600	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,100	2,100	220	280
9,000	11,600	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,100	2,100	245	298
10,000	11,600	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,100	2,100	270	315
11,000	11,600	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	300	333
12,000	11,700	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	325	350
13,000	11,700	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	355	368
14,000	11,700	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	380	385
15,000	11,700	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	405	403
16,000	11,700	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,150	2,150	435	420
17,000	11,700	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,150	2,150	460	438
18,000	11,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,150	2,150	490	455
19,000	11,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,150	2,150	515	473
20,000	11,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,150	2,150	540	490
21,000	11,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,150	2,150	570	508
22,000	11,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	595	525
23,000	11,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	625	543
24,000	11,900	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	650	560
25,000	11,900	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	675	578
26,000	11,900	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	705	595
27,000	11,900	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	730	613
28,000	11,900	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,175	2,175	760	630
29,000	12,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,175	2,175	785	648
30,000	12,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,150	2,150	810	665
31,000	12,000	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,150	2,150	840	683
32,000	12,000	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	865	700
33,000	12,000	.6/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	895	718
34,000	12,000	.6/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,100	2,100	920	735
35,000	12,100	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	2,025	2,025	945	753
36,000	12,100	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	1,875	1,875	975	770
37,000	12,100	.1/.6	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.2/.7	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	950	1,200	1,000	788
38,000	12,100	.0/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.2/.6	.1/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	675	1,175	1,030	805
39,000	12,100	.0/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.2/.6	.1/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	625	1,150	1,055	823
40,000	12,100	.0/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	.2/.6	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	575	1,125	1,080	840

Figure 5.1e(1).

EXPOSED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	2,400	2,800	3,200	3,600	4,000	4,400	4,800	5,200	2,400	2,800	3,200	3,600	4,000	4,400	4,800	5,200	Prompt	Delayed	(meters)	(meters)
7,000	11,600	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	190	611
8,000	11,600	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	220	628
9,000	11,600	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	245	646
10,000	11,600	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	270	663
11,000	11,600	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	300	681
12,000	11,600	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	325	698
13,000	11,700	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	355	716
14,000	11,700	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	380	733
15,000	11,700	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	405	751
16,000	11,700	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,175	2,175	435	768
17,000	11,700	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,150	2,150	460	786
18,000	11,700	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,150	2,150	490	803
19,000	11,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	515	821
20,000	11,800	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	540	838
21,000	11,800	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,100	2,100	570	856
22,000	11,800	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,050	2,050	595	873
23,000	11,800	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	1,900	1,900	625	891
24,000	11,800	.3/.7	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2	.4/.7	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.0/.2	.0/.2	1,475	1,475	650	908
25,000	11,900	.0/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.2/.7	.1/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	675	1,175	675	926
26,000	11,900	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.2/.6	.1/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.2	625	1,150	705	943
27,000	11,900	.0/.6	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.2/.6	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	575	1,125	730	961
28,000	11,900	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	500	1,100	760	978
29,000	11,900	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.1/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	450	1,075	785	996
30,000	12,000	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.1/.6	.1/.4	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	350	1,025	810	1,013
31,000	12,000	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		225	1,000	840	1,031
32,000	12,000	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		0	975	865	1,048
33,000	12,000	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			925	895	1,066
34,000	12,000	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			875	920	1,083
35,000	12,000	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.1/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			850	945	1,101
36,000	12,100	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				800	975	1,118
37,000	12,100	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				750	1,000	1,136
38,000	12,100	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				675	1,030	1,153
39,000	12,100	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				625	1,055	1,171
40,000	12,100	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.0/.3	.0/.3	.0/.2	.0/.2	.0/.1					550	1,080	1,188

Figure 5.1e(2).

LFR 1

[1] Large Free Rocket.

EXPOSED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800	DELAYED CASUALTIES — Target radius (meters) 2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	6,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	190	0
8,000	6,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	220	0
9,000	6,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	245	0
10,000	6,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	270	0
11,000	6,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	300	0
12,000	6,700	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	325	0
13,000	6,700	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	355	0
14,000	6,700	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	380	0
15,000	6,700	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	405	0
16,000	6,700	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	435	0
17,000	6,700	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	460	0
18,000	6,800	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	490	0
19,000	6,800	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	515	0
20,000	6,800	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	540	0
21,000	6,800	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	570	0
22,000	6,800	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	595	0
23,000	6,900	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	625	0
24,000	6,900	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	650	0
25,000	6,900	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	675	0
26,000	6,900	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	705	0
27,000	6,900	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	730	0
28,000	6,900	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	760	0
29,000	7,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	785	0
30,000	7,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	810	0
31,000	7,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	840	0
32,000	7,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	865	0
33,000	7,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	895	0
34,000	7,000	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	920	0
35,000	7,100	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	945	0
36,000	7,100	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	975	0
37,000	7,100	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	1,000	0
38,000	7,100	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	1,030	0
39,000	7,100	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	1,055	0
40,000	7,100	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	1,080	0

[1] Initial effects only. Fallout governs.

Figure 5.1e(3).

PROTECTED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW E_x) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 500	600	700	800	900	1,000	1,100	1,200	DELAYED CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	3,400	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.9/.9	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	575	775	190	175
8,000	3,400	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	550	775	220	192
9,000	3,400	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	550	775	245	210
10,000	3,400	.7/.8	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.1	525	750	270	227
11,000	3,400	.7/.8	.6/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	500	750	300	245
12,000	3,500	.6/.8	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.1/.3	.1/.2	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	500	725	325	262
13,000	3,500	.6/.8	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2	.9/.9	.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	475	725	355	280
14,000	3,500	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	700	380	297
15,000	3,500	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.8/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	425	675	405	315
16,000	3,500	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	375	650	435	332
17,000	3,500	.3/.6	.3/.5	.2/.4	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.8/.9	.6/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	350	650	460	350
18,000	3,600	.3/.6	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2	.7/.9	.6/.8	.5/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	300	625	490	367
19,000	3,600	.2/.5	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	.7/.9	.5/.8	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	250	600	515	385
20,000	3,600	.1/.5	.1/.4	.1/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.0/.2	175	575	540	402
21,000	3,600	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.2	25	550	570	420
22,000	3,600	.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	500	595	437
23,000	3,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		.4/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	475	625	455
24,000	3,700	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.4/.7	.3/.6	.2/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1	0	425	650	472
25,000	3,700	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.3/.7	.2/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	0	375	675	490
26,000	3,700	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.2/.7	.2/.6	.2/.4	.1/.3	.0/.3	.0/.2	.0/.1		0	325	705	507
27,000	3,700	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	250	730	525
28,000	3,700	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	150	760	542
29,000	3,700	.0/.2	.0/.2	.0/.2	.0/.1					.0/.5	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	785	560
30,000	3,800	.0/.2	.0/.2	.0/.2	.0/.1					.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	810	577
31,000	3,800	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		0	0	840	595
32,000	3,800	.0/.2	.0/.1							.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	865	612
33,000	3,800	.0/.2	.0/.1							.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	895	630
34,000	3,800	.0/.1								.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	0	920	647
35,000	3,800	.0/.1								.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	0	945	665
36,000	3,900	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	975	682
37,000	3,900	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	1,000	700
38,000	3,900	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	1,030	717
39,000	3,900	.0/.1								.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	0	1,055	735
40,000	3,900	.0/.1								.0/.2	.0/.2	.0/.2	.0/.1					0	0	1,080	752

Figure 5.2a(1).

LFR 1

[1] Large Free Rocket.

PROTECTED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	400	500	600	700	800	900	1,000	1, 100	400	600	800	1,000	1, 200	1,400	1,600	1,800	Prompt	Delayed	(meters)	(meters)
7,000	3,400	.8/.9	.7/.8	.6/.7	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	500	725	190	303
8,000	3,400	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.2	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	475	725	220	320
9,000	3,400	.8/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	450	700	245	338
10,000	3,400	.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	425	675	270	355
11,000	3,400	.6/.8	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	400	675	300	373
12,000	3,400	.5/.8	.4/.7	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	350	650	325	390
13,000	3,500	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.8/.9	.7/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	325	625	355	408
14,000	3,500	.3/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	275	600	380	425
15,000	3,500	.2/.6	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.2	.0/.1	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	200	575	405	443
16,000	3,500	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	100	550	435	460
17,000	3,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.7/.9	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	0	525	460	478
18,000	3,500	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	475	490	495
19,000	3,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.5/.8	.4/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1	0	450	515	513
20,000	3,600	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			.4/.8	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1		0	400	540	530
21,000	3,600	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			.3/.7	.3/.6	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		0	350	570	548
22,000	3,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.2/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	275	595	565
23,000	3,600	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	175	625	583
24,000	3,600	.0/.2	.0/.2	.0/.2	.0/.1					.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	650	600
25,000	3,700	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1			0	0	675	618
26,000	3,700	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	705	635
27,000	3,700	.0/.2	.0/.1							.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	730	653
28,000	3,700	.0/.1								.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	760	670
29,000	3,700	.0/.1								.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				0	0	785	688
30,000	3,700	.0/.1								.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	0	810	705
31,000	3,800	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	840	723
32,000	3,800	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	865	740
33,000	3,800	.0/.1								.0/.3	.0/.2	.0/.2	.0/.1					0	0	895	758
34,000	3,800	.0/.1								.0/.2	.0/.2	.0/.2	.0/.1					0	0	920	775
35,000	3,800	.0/.1								.0/.2	.0/.2	.0/.2	.0/.1					0	0	945	793
36,000	3,800	.0/.1								.0/.2	.0/.2	.0/.2	.0/.1					0	0	975	810
37,000	3,900	.0/.1								.0/.2	.0/.2	.0/.1						0	0	1,000	828
38,000	3,900	.0/.1								.0/.2	.0/.2	.0/.1						0	0	1,030	845
39,000	3,900									.0/.2	.0/.1							0	0	1,055	863
40,000	3,900									.0/.2	.0/.1							0	0	1,080	880

Figure 5.2a(2)

PROTECTED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance [1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters): 400	600	800	1,000	1,200	1,400	1,600	1,800	DELAYED CASUALTIES — Target radius (meters): 400	600	800	1,000	1,200	1,400	1,600	1,800	Probable minimum R_D (meters): Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	625	825	190	0
8,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.7/.8	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	220	0
9,000	2,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	245	0
10,000	2,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	270	0
11,000	2,300	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	300	0
12,000	2,300	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	325	0
13,000	2,300	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	355	0
14,000	2,300	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	380	0
15,000	2,300	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	405	0
16,000	2,400	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	625	825	435	0
17,000	2,400	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	625	825	460	0
18,000	2,400	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.9	.6/.7	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	625	825	490	0
19,000	2,400	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	625	825	515	0
20,000	2,400	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	625	825	540	0
21,000	2,400	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.7	.4/.6	.4/.4	.3/.3	.2/.3	.1/.2	625	825	570	0
22,000	2,500	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.7	.4/.6	.4/.4	.3/.3	.2/.3	.1/.2	625	825	595	0
23,000	2,500	.5/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.7/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	625	825	625	0
24,000	2,500	.4/.8	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	625	825	650	0
25,000	2,500	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.5/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	625	825	675	0
26,000	2,500	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.9	.5/.8	.4/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	625	825	705	0
27,000	2,600	.3/.7	.3/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.8	.4/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	625	825	730	0
28,000	2,600	.3/.7	.3/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.8	.4/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	625	825	760	0
29,000	2,600	.3/.7	.3/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.4/.8	.4/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	625	825	785	0
30,000	2,600	.2/.7	.2/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.4/.8	.4/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	625	825	810	0
31,000	2,600	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	625	825	840	0
32,000	2,600	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	825	865	0
33,000	2,700	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.4/.8	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	825	895	0
34,000	2,700	.1/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.4/.8	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	825	920	0
35,000	2,700	.1/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.4/.8	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	825	945	0
36,000	2,700	.1/.5	.1/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.4/.7	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	825	975	0
37,000	2,700	.1/.5	.1/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.4/.7	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	825	1,000	0
38,000	2,700	.1/.5	.1/.5	.1/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.3/.7	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	625	825	1,030	0
39,000	2,800	.0/.5	.1/.5	.1/.4	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	.2/.7	.2/.6	.2/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	625	825	1,055	0
40,000	2,800	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	.2/.7	.2/.6	.2/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	625	825	1,080	0

[1] Initial effects only. Fallout governs.

Figure 5.2a(3).

LFR 1

[1] Large Free Rocket.

PROTECTED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)								(meters)			
(meters)	(meters)	600	800	1,000	1,200	1,400	1,600	1,800		400	600	800	1,000	1,200	1,400	1,600	2,000	Prompt	Delayed	(meters)	(meters)
7,000	4,200	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		.9/.9	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.1/.2	650	875	190	188
8,000	4,200	.8/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		.9/.9	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.1/.2	650	875	220	205
9,000	4,200	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.9/.9	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.1/.2	625	875	245	223
10,000	4,300	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	625	850	270	240
11,000	4,300	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	600	850	300	258
12,000	4,300	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	600	825	325	275
13,000	4,300	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			.9/.9	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	575	825	355	293
14,000	4,300	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			.9/.9	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	550	800	380	310
15,000	4,300	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1			.9/.9	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	525	800	405	328
16,000	4,300	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.1			.9/.9	.8/.9	.6/.8	.5/.6	.4/.5	.2/.4	.2/.3	.1/.2	500	775	435	345
17,000	4,400	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			.9/.9	.8/.9	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	475	750	460	363
18,000	4,400	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			.8/.9	.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	450	725	490	380
19,000	4,400	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1			.8/.9	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	400	725	515	398
20,000	4,400	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1			.8/.9	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	350	700	540	415
21,000	4,400	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1				.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	300	675	570	433
22,000	4,500	.1/.5	.1/.4	.0/.3	.0/.2	.0/.1				.7/.9	.6/.8	.4/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	250	650	595	450
23,000	4,500	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1				.6/.9	.5/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	175	625	625	468
24,000	4,500	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.6/.8	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1	0	575	650	485
25,000	4,500	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.5/.8	.4/.7	.3/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1	0	550	675	503
26,000	4,500	.0/.4	.0/.3	.0/.2	.0/.1					.4/.8	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.1	0	500	705	520
27,000	4,500	.0/.3	.0/.3	.0/.2	.0/.1					.4/.7	.3/.7	.3/.5	.2/.4	.1/.3	.1/.3	.0/.2	.0/.1	0	475	730	538
28,000	4,600	.0/.3	.0/.2	.0/.2	.0/.1					.3/.7	.2/.6	.2/.5	.1/.4	.1/.3	.0/.3	.0/.2	.0/.1	0	425	760	555
29,000	4,600	.0/.3	.0/.2	.0/.2	.0/.1					.2/.7	.2/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	0	350	785	573
30,000	4,600	.0/.3	.0/.2	.0/.2	.0/.1					.1/.6	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	0	275	810	590
31,000	4,600	.0/.2	.0/.2	.0/.1						.0/.6	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	0	175	840	608
32,000	4,600	.0/.2	.0/.2	.0/.1						.0/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	0	0	865	625
33,000	4,600	.0/.2	.0/.2	.0/.1						.0/.5	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	0	0	895	643
34,000	4,700	.0/.2	.0/.2	.0/.1						.0/.5	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	0	0	920	660
35,000	4,700	.0/.2	.0/.1							.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	945	678
36,000	4,700	.0/.2	.0/.1							.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		0	0	975	695
37,000	4,700	.0/.2	.0/.1							.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		0	0	1,000	713
38,000	4,700	.0/.1								.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		0	0	1,030	730
39,000	4,700	.0/.1								.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	0	1,055	748
40,000	4,800	.0/.1								.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	0	1,080	765

Figure 5.2b(1).

PROTECTED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES											
		Target radius (meters)								Target radius (meters)											
(meters)	(meters)	600	800	1,000	1,200	1,400	1,600			400	600	800	1,000	1,200	1,400	1,600	1,800	Prompt	Delayed	(meters)	(meters)
7,000	4,200	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	575	825	190	350
8,000	4,200	.7/.8	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1			.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	550	800	220	367
9,000	4,200	.6/.8	.4/.5	.2/.4	.1/.2	.1/.2	.1/.1			.9/.9	.9/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	525	800	245	385
10,000	4,200	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1			.9/.9	.9/.9	.7/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	500	775	270	402
11,000	4,300	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			.9/.9	.9/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	475	750	300	420
12,000	4,300	.5/.7	.3/.4	.1/.3	.1/.2	.1/.1				.9/.9	.9/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	450	725	325	437
13,000	4,300	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1				.9/.9	.9/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	400	725	355	455
14,000	4,300	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1				.9/.9	.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	350	700	380	472
15,000	4,300	.3/.5	.1/.4	.1/.2	.0/.2	.0/.1				.9/.9	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	300	675	405	490
16,000	4,300	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1				.8/.9	.7/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	250	650	435	507
17,000	4,400	.1/.5	.0/.3	.0/.2	.0/.1					.8/.9	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	175	625	460	525
18,000	4,400	.0/.4	.0/.3	.0/.2	.0/.1					.7/.9	.6/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	0	575	490	542
19,000	4,400	.0/.4	.0/.3	.0/.2	.0/.1					.7/.9	.5/.8	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	0	550	515	560
20,000	4,400	.0/.3	.0/.2	.0/.2	.0/.1					.6/.8	.5/.7	.3/.6	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	0	500	540	577
21,000	4,400	.0/.3	.0/.2	.0/.1						.5/.8	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	0	475	570	595
22,000	4,400	.0/.3	.0/.2	.0/.1						.4/.8	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	0	425	595	612
23,000	4,500	.0/.3	.0/.2	.0/.1						.3/.7	.3/.6	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	0	350	625	630
24,000	4,500	.0/.2	.0/.2	.0/.1						.2/.7	.2/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	0	275	650	647
25,000	4,500	.0/.2	.0/.1							.1/.7	.0/.6	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	0	175	675	665
26,000	4,500	.0/.2	.0/.1							.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	705	682
27,000	4,500	.0/.2	.0/.1							.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	730	700
28,000	4,500	.0/.2	.0/.1							.0/.5	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	0	760	717
29,000	4,600	.0/.1								.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		0	0	785	735
30,000	4,600	.0/.1								.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	810	752
31,000	4,600	.0/.1								.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	840	770
32,000	4,600	.0/.1								.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	0	865	787
33,000	4,600	.0/.1								.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	0	895	805
34,000	4,700	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	920	822
35,000	4,700	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	945	840
36,000	4,700	.0/.1								.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	0	975	857
37,000	4,700	.0/.1								.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	0	1,000	875
38,000	4,700	.0/.1								.0/.2	.0/.2	.0/.2	.0/.1					0	0	1,030	892
39,000	4,700	.0/.1								.0/.2	.0/.2	.0/.2	.0/.1					0	0	1,055	910
40,000	4,800	.0/.1								.0/.2	.0/.2	.0/.2	.0/.1					0	0	1,080	927

Figure 5.2b(2)

LFR 1

[1]Large Free Rocket.

PROTECTED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	2,000	2,400	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	190	0
8,000	2,700	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	220	0
9,000	2,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	245	0
10,000	2,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	270	0
11,000	2,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	300	0
12,000	2,800	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	325	0
13,000	2,800	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	355	0
14,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	380	0
15,000	2,900	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	405	0
16,000	2,900	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	435	0
17,000	2,900	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	700	925	460	0
18,000	2,900	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	490	0
19,000	2,900	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	515	0
20,000	3,000	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	540	0
21,000	3,000	.5/.8	.4/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	570	0
22,000	3,000	.5/.8	.4/.6	.3/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	595	0
23,000	3,000	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	625	0
24,000	3,000	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	650	0
25,000	3,000	.4/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.9	.5/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	675	0
26,000	3,100	.4/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.8	.5/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	705	0
27,000	3,100	.4/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	730	0
28,000	3,100	.4/.7	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	760	0
29,000	3,100	.4/.7	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	785	0
30,000	3,100	.3/.7	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	810	0
31,000	3,200	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	840	0
32,000	3,200	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	865	0
33,000	3,200	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	895	0
34,000	3,200	.2/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	920	0
35,000	3,200	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	945	0
36,000	3,200	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	975	0
37,000	3,300	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	1,000	0
38,000	3,300	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.4/.7	.4/.7	.3/.6	.3/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	1,030	0
39,000	3,300	.2/.5	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.4/.7	.3/.6	.3/.6	.3/.5	.3/.4	.3/.3	.2/.2	.1/.2	700	925	1,055	0
40,000	3,300	.1/.5	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.3/.7	.3/.6	.3/.5	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	700	925	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.2b(3).

PROTECTED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 600	800	1,000	1,200	1,400	1,600	1,800	2,000	DELAYED CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	6,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	1,000	190	205
8,000	6,000	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	750	975	220	222
9,000	6,100	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	975	245	240
10,000	6,100	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	725	975	270	257
11,000	6,100	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	300	275
12,000	6,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	700	950	325	292
13,000	6,100	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	675	925	355	310
14,000	6,100	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	650	925	380	327
15,000	6,200	.7/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.1		.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	625	900	405	345
16,000	6,200	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.1		.9/.9	.7/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1	625	875	435	362
17,000	6,200	.6/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1	600	875	460	380
18,000	6,200	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1	575	850	490	397
19,000	6,200	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		.9/.9	.7/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1	550	825	515	415
20,000	6,200	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1	500	825	540	432
21,000	6,300	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1		475	800	570	450
22,000	6,300	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.8/.9	.6/.8	.3/.5	.2/.3	.1/.2	.1/.1		425	775	595	467
23,000	6,300	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.1			.8/.9	.5/.8	.3/.5	.2/.3	.1/.2	.0/.1		375	750	625	485
24,000	6,300	.2/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.0/.1		325	725	650	502
25,000	6,300	.1/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1			.7/.9	.5/.7	.3/.5	.1/.3	.1/.2	.0/.1		250	700	675	520
26,000	6,300	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			.6/.9	.4/.7	.3/.5	.1/.3	.1/.2	.0/.1		150	650	705	537
27,000	6,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			.6/.8	.4/.7	.2/.4	.1/.3	.0/.2	.0/.1		0	625	780	555
28,000	6,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				.5/.8	.3/.6	.2/.4	.1/.3	.0/.2	.0/.1		0	600	760	572
29,000	6,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.4/.8	.3/.6	.2/.4	.1/.3	.0/.2	.0/.1		0	550	785	590
30,000	6,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.4/.8	.3/.6	.1/.4	.0/.2	.0/.2	.0/.1		0	500	810	607
31,000	6,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.3/.7	.2/.6	.1/.4	.0/.2	.0/.2	.0/.1		0	450	840	625
32,000	6,400	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				.2/.7	.2/.5	.1/.4	.0/.2	.0/.2	.0/.1		0	400	865	642
33,000	6,500	.0/.3	.0/.2	.0/.2	.0/.1					.1/.7	.2/.5	.0/.3	.0/.2	.0/.1			0	325	895	660
34,000	6,500	.0/.3	.0/.2	.0/.2	.0/.1					.0/.6	.0/.5	.0/.3	.0/.2	.0/.1			0	225	920	677
35,000	6,500	.0/.3	.0/.2	.0/.2	.0/.1					.0/.6	.0/.5	.0/.3	.0/.2	.0/.1			0	0	945	696
36,000	6,500	.0/.2	.0/.2	.0/.2	.0/.1					.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	0	975	712
37,000	6,500	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	1,000	730
38,000	6,600	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	1,030	747
39,000	6,600	.0/.2	.0/.2	.0/.1						.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	1,055	765
40,000	6,600	.0/.2	.0/.1							.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	0	1,080	782

Figure 5.2c(1).

[1]Large Free Rocket.

PROTECTED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters): 600	800	1,000	1,200	1,400	1,600	1,800
7,000	5,900	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1
8,000	6,000	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1
9,000	6,000	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
10,000	6,000	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1
11,000	6,000	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1
12,000	6,000	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1
13,000	6,000	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1	
14,000	6,100	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	
15,000	6,100	.4/.7	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1	
16,000	6,100	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	
17,000	6,100	.2/.6	.1/.4	.1/.3	.0/.2	.0/.1		
18,000	6,100	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1		
19,000	6,200	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1		
20,000	6,200	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		
21,000	6,200	.0/.4	.0/.3	.0/.2	.0/.1			
22,000	6,200	.0/.4	.0/.3	.0/.2	.0/.1			
23,000	6,200	.0/.3	.0/.2	.0/.2	.0/.1			
24,000	6,200	.0/.3	.0/.2	.0/.2	.0/.1			
25,000	6,300	.0/.3	.0/.2	.0/.1				
26,000	6,300	.0/.3	.0/.2	.0/.1				
27,000	6,300	.0/.2	.0/.2	.0/.1				
28,000	6,300	.0/.2	.0/.2	.0/.1				
29,000	6,300	.0/.2	.0/.1					
30,000	6,300	.0/.2	.0/.1					
31,000	6,400	.0/.2	.0/.1					
32,000	6,400	.0/.1						
33,000	6,400	.0/.1						
34,000	6,500	.0/.1						
35,000	6,500	.0/.1						
36,000	6,500	.0/.1						
37,000	6,500	.0/.1						
38,000	6,500	.0/.1						
39,000	6,600	.0/.1						
40,000	6,600	.0/.1						

DELAYED CASUALTIES — Target radius (meters): 400	800	1,200	1,600	2,000	2,400	2,800	Probable minimum R_D (meters): Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1	650	900	190	409
.9/.9	.8/.9	.5/.6	.3/.3	.1/.2	.1/.2	.0/.1	625	900	220	426
.9/.9	.8/.9	.5/.6	.2/.3	.1/.2	.1/.2	.0/.1	600	875	245	443
.9/.9	.8/.9	.5/.6	.2/.3	.1/.2	.1/.1		575	850	270	461
.9/.9	.8/.9	.4/.6	.2/.3	.1/.2	.1/.1		550	850	300	479
.9/.9	.7/.9	.4/.5	.2/.3	.1/.2	.1/.1		525	825	325	496
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		475	800	355	514
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1		450	775	380	531
.9/.9	.6/.8	.3/.5	.2/.3	.1/.2	.0/.1		400	750	405	549
.9/.9	.6/.8	.3/.5	.2/.3	.1/.2	.0/.1		350	725	435	566
.8/.9	.6/.8	.3/.5	.1/.3	.1/.2	.0/.1		300	700	460	584
.8/.9	.5/.7	.3/.4	.1/.3	.1/.2	.0/.1		225	675	490	601
.8/.9	.5/.7	.2/.4	.1/.3	.1/.2	.0/.1		50	650	515	619
.7/.9	.4/.7	.2/.4	.1/.3	.0/.2	.0/.1		0	600	540	636
.7/.9	.4/.7	.2/.4	.1/.2	.0/.2	.0/.1		0	575	570	654
.6/.8	.4/.6	.2/.4	.1/.2	.0/.1			0	525	595	671
.5/.8	.3/.6	.1/.4	.0/.2	.0/.1			0	475	625	689
.4/.8	.3/.6	.1/.3	.0/.2	.0/.1			0	425	650	706
.3/.7	.2/.5	.0/.3	.0/.2	.0/.1			0	350	675	724
.2/.7	.1/.5	.0/.3	.0/.2	.0/.1			0	275	705	741
.1/.7	.0/.5	.0/.3	.0/.2	.0/.1			0	150	730	759
.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	0	760	776
.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	0	785	794
.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	0	810	811
.0/.5	.0/.4	.0/.2	.0/.1				0	0	840	829
.0/.5	.0/.3	.0/.2	.0/.1				0	0	865	846
.0/.4	.0/.3	.0/.2	.0/.1				0	0	895	864
.0/.4	.0/.3	.0/.2	.0/.1				0	0	920	881
.0/.4	.0/.3	.0/.2	.0/.1				0	0	945	899
.0/.3	.0/.3	.0/.2	.0/.1				0	0	975	916
.0/.3	.0/.3	.0/.2	.0/.1				0	0	1,000	934
.0/.3	.0/.2	.0/.2	.0/.1				0	0	1,030	951
.0/.3	.0/.2	.0/.1					0	0	1,055	969
.0/.3	.0/.2	.0/.1					0	0	1,080	986

Figure 5.2c(2).

PROTECTED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES							(meters)			
		Target radius (meters)								Target radius (meters)										
(meters)	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	400	800	1,200	1,600	2,000	2,400	2,800	Prompt	Delayed	(meters)	(meters)
7,000	3,600	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	190	0
8,000	3,600	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	220	0
9,000	3,600	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	245	0
10,000	3,600	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	270	0
11,000	3,600	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	300	0
12,000	3,600	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	325	0
13,000	3,700	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	355	0
14,000	3,700	.9/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	380	0
15,000	3,700	.8/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	405	0
16,000	3,700	.7/.9	.6/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	435	0
17,000	3,700	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	460	0
18,000	3,700	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	490	0
19,000	3,800	.7/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	515	0
20,000	3,800	.7/.8	.6/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	540	0
21,000	3,900	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	570	0
22,000	3,900	.6/.8	.5/.7	.4/.6	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	595	0
23,000	3,800	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	625	0
24,000	3,900	.6/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	650	0
25,000	3,900	.5/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.1/.2	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	675	0
26,000	3,900	.5/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	705	0
27,000	3,900	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	730	0
28,000	3,900	.5/.8	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	760	0
29,000	3,900	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	785	0
30,000	4,000	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	810	0
31,000	4,000	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	840	0
32,000	4,000	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	865	0
33,000	4,000	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	895	0
34,000	4,000	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.7/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	920	0
35,000	4,000	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.9	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	945	0
36,000	4,100	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	975	0
37,000	4,100	.3/.7	.3/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.8	.4/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	1,000	0
38,000	4,100	.2/.6	.2/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	1,030	0
39,000	4,100	.2/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	1,055	0
40,000	4,100	.2/.6	.2/.5	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.5/.8	.4/.7	.3/.5	.3/.4	.2/.3	.1/.2	.1/.1	800	1,025	1,080	0

[1] Initial effects only. Fallout governs.

Figure 5.2c(3).

LFR 1

[1] Large Free Rocket.

PROTECTED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters): 800	1,000	1,200	1,400	1,600	1,800	2,000	2,200
7,000	8,900	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
8,000	8,900	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
9,000	8,900	.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2
10,000	8,900	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
11,000	8,900	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
12,000	8,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2
13,000	9,000	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2
14,000	9,000	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2
15,000	9,000	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2
16,000	9,000	.6/.8	.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1
17,000	9,000	.6/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1
18,000	9,000	.6/.7	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1
19,000	9,100	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1
20,000	9,100	.5/.7	.4/.6	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1
21,000	9,100	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1
22,000	9,100	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.0/.1
23,000	9,100	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.2	.0/.1
24,000	9,100	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	
25,000	9,200	.3/.6	.2/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	
26,000	9,200	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.1	
27,000	9,200	.3/.6	.2/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	
28,000	9,200	.2/.5	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	.0/.1	
29,000	9,200	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		
30,000	9,300	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		
31,000	9,300	.1/.4	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		
32,000	9,300	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			
33,000	9,300	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
34,000	9,300	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
35,000	9,300	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
36,000	9,400	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			
37,000	9,400	.0/.3	.0/.2	.0/.2	.0/.1				
38,000	9,400	.0/.3	.0/.2	.0/.2	.0/.1				
39,000	9,400	.0/.3	.0/.2	.0/.2	.0/.1				
40,000	9,400	.0/.3	.0/.2	.0/.2	.0/.1				

DELAYED CASUALTIES — Target radius (meters): 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters): Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	190	234
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,150	220	251
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	875	1,125	245	269
.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	850	1,125	270	286
.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	850	1,125	300	304
.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	825	1,100	325	321
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	800	1,100	355	339
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	800	1,075	380	356
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	775	1,075	405	374
.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	750	1,050	435	391
.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	725	1,050	460	409
.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	725	1,025	490	426
.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	700	1,000	515	444
.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	650	1,000	540	461
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	625	975	570	479
.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	950	595	496
.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		600	925	625	514
.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		575	900	650	531
.6/.8	.4/.6	.3/.4	.1/.3	.1/.2	.0/.1		550	875	675	549
.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		500	850	705	566
.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		475	825	730	584
.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		450	800	760	601
.5/.8	.3/.6	.2/.4	.1/.2	.1/.2	.0/.1		400	775	785	619
.5/.7	.3/.5	.2/.4	.1/.2	.0/.2	.0/.1		375	750	810	636
.4/.7	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1		325	700	840	654
.4/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		250	675	865	671
.4/.7	.2/.5	.1/.3	.1/.2	.0/.2	.0/.1		200	625	895	689
.3/.7	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1		125	600	920	706
.2/.6	.2/.5	.1/.3	.0/.2	.0/.1			50	550	945	724
.2/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	475	975	741
.2/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	425	1,000	759
.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	325	1,030	776
.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	225	1,055	794
.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	0	1,080	811

Figure 5.2d(1).

PROTECTED Personnel Targets
Large Free Rocket

HIGH Airburst

Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o	Height of burst
		PROMPT CASUALTIES								DELAYED CASUALTIES										
		Target radius (meters)								Target radius (meters)							(meters)			
(meters)	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	800	1,200	1,600	2,000	2,400	2,800	3,200	Prompt	Delayed	(meters)	(meters)
7,000	8,800	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	725	1,025	190	510
8,000	8,900	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		700	1,025	220	527
9,000	8,900	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		675	1,000	245	545
10,000	8,900	.8/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		650	975	270	562
11,000	8,900	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	975	300	580
12,000	8,900	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		625	950	325	597
13,000	8,900	.7/.8	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		600	925	355	615
14,000	9,000	.6/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.8/.9	.5/.6	.3/.4	.1/.3	.1/.2	.1/.1		575	900	380	632
15,000	9,000	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		.8/.9	.5/.6	.2/.4	.1/.3	.1/.2	.0/.1		525	875	405	650
16,000	9,000	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.7/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		500	850	435	667
17,000	9,000	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		.7/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		475	825	460	685
18,000	9,000	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		425	800	490	702
19,000	9,000	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.1			.6/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1		400	775	515	720
20,000	9,100	.3/.6	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1			.6/.8	.3/.5	.2/.3	.1/.2	.0/.2	.0/.1		350	750	540	737
21,000	9,100	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1			.5/.8	.3/.5	.1/.3	.1/.2	.0/.1			300	700	570	755
22,000	9,100	.1/.5	.0/.4	.0/.3	.0/.2	.0/.1				.5/.7	.3/.5	.1/.3	.1/.2	.0/.1			250	675	595	772
23,000	9,100	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				.4/.7	.2/.5	.1/.3	.0/.2	.0/.1			175	625	625	790
24,000	9,100	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				.4/.7	.2/.5	.1/.3	.0/.2	.0/.1			100	575	650	807
25,000	9,200	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				.4/.7	.2/.4	.1/.3	.0/.2	.0/.1			25	525	675	825
26,000	9,200	.0/.4	.0/.3	.0/.2	.0/.1					.3/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	475	705	842
27,000	9,200	.0/.4	.0/.3	.0/.2	.0/.1					.2/.6	.1/.4	.0/.2	.0/.2	.0/.1			0	400	730	860
28,000	9,200	.0/.4	.0/.3	.0/.2	.0/.1					.2/.6	.0/.4	.0/.2	.0/.2	.0/.1			0	325	760	877
29,000	9,200	.0/.4	.0/.2	.0/.2	.0/.1					.0/.5	.0/.4	.0/.2	.0/.1				0	200	785	895
30,000	9,200	.0/.3	.0/.2	.0/.2	.0/.1					.0/.5	.0/.3	.0/.2	.0/.1				0	0	810	912
31,000	9,300	.0/.3	.0/.2	.0/.1						.0/.5	.0/.3	.0/.2	.0/.1				0	0	840	930
32,000	9,300	.0/.3	.0/.2	.0/.1						.0/.5	.0/.3	.0/.2	.0/.1				0	0	865	947
33,000	9,300	.0/.3	.0/.2	.0/.1						.0/.4	.0/.3	.0/.2	.0/.1				0	0	895	965
34,000	9,300	.0/.3	.0/.2	.0/.1						.0/.4	.0/.3	.0/.2	.0/.1				0	0	920	982
35,000	9,300	.0/.3	.0/.2	.0/.1						.0/.4	.0/.3	.0/.2	.0/.1				0	0	945	1,000
36,000	9,300	.0/.2	.0/.1							.0/.4	.0/.2	.0/.2	.0/.1				0	0	975	1,017
37,000	9,400	.0/.2	.0/.1							.0/.3	.0/.2	.0/.1					0	0	1,000	1,035
38,000	9,400	.0/.2	.0/.1							.0/.3	.0/.2	.0/.1					0	0	1,030	1,052
39,000	9,400	.0/.2	.0/.1							.0/.3	.0/.2	.0/.1					0	0	1,055	1,070
40,000	9,400	.0/.2	.0/.1							.0/.3	.0/.2	.0/.1					0	0	1,080	1,087

Figure 5.2d(2)

LFR 1

[1]Large Free Rocket.

PROTECTED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	800	1,200	1,600	2,000	2,400	2,800	DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	5,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	190	0
8,000	5,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	220	0
9,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.1	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	245	0
10,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	270	0
11,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	300	0
12,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	325	0
13,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	355	0
14,000	5,100	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	380	0
15,000	5,200	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	405	0
16,000	5,200	.9/.9	.7/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	435	0
17,000	5,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	460	0
18,000	5,200	.9/.9	.7/.8	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	490	0
19,000	5,200	.9/.9	.7/.8	.5/.6	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	515	0
20,000	5,200	.9/.9	.7/.8	.5/.6	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	540	0
21,000	5,300	.9/.9	.7/.8	.5/.6	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	570	0
22,000	5,300	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	595	0
23,000	5,300	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	625	0
24,000	5,300	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	650	0
25,000	5,300	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	675	0
26,000	5,300	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	705	0
27,000	5,400	.7/.9	.5/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	730	0
28,000	5,400	.7/.9	.5/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	760	0
29,000	5,400	.7/.9	.5/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	785	0
30,000	5,400	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	810	0
31,000	5,400	.6/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	840	0
32,000	5,500	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	865	0
33,000	5,500	.6/.8	.4/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	895	0
34,000	5,500	.6/.8	.4/.7	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	925	1,175	920	0
35,000	5,500	.5/.8	.4/.7	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	925	1,175	945	0
36,000	5,500	.5/.8	.4/.7	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1	925	1,175	975	0
37,000	5,500	.5/.8	.4/.7	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	925	1,175	1,000	0
38,000	5,600	.5/.8	.4/.7	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	925	1,175	1,030	0
39,000	5,600	.4/.8	.4/.7	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	925	1,175	1,055	0
40,000	5,600	.4/.8	.3/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	.5/.8	.4/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	925	1,175	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.2d(3).

PROTECTED Personnel Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters): 400	800	1,200	1,600	2,000	2,400	2,800
7,000	11,300	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
8,000	11,600	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
9,000	11,600	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
10,000	11,600	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
11,000	11,600	.9/.9	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1
12,000	11,700	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1
13,000	11,700	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1
14,000	11,700	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1
15,000	11,700	.9/.9	.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1
16,000	11,700	.9/.9	.8/.9	.5/.6	.3/.4	.1/.2	.1/.2	.1/.1
17,000	11,700	.9/.9	.7/.9	.5/.6	.3/.4	.1/.2	.1/.2	.0/.1
18,000	11,800	.9/.9	.7/.9	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1
19,000	11,800	.9/.9	.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1
20,000	11,800	.9/.9	.7/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1
21,000	11,800	.9/.9	.6/.8	.4/.6	.2/.3	.1/.2	.1/.2	.0/.1
22,000	11,800	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1
23,000	11,800	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1
24,000	11,900	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1
25,000	11,900	.8/.9	.5/.8	.4/.5	.2/.3	.1/.2	.1/.1	.0/.1
26,000	11,900	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.1	
27,000	11,900	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.1	
28,000	11,900	.6/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.1	
29,000	12,000	.6/.9	.4/.7	.3/.5	.2/.3	.1/.2	.0/.1	
30,000	12,000	.5/.8	.4/.7	.3/.5	.2/.3	.1/.2	.0/.1	
31,000	12,000	.5/.8	.4/.7	.3/.4	.1/.3	.1/.2	.0/.1	
32,000	12,000	.4/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1	
33,000	12,000	.4/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1	
34,000	12,000	.4/.7	.3/.6	.2/.4	.1/.3	.0/.2	.0/.1	
35,000	12,100	.3/.7	.3/.6	.2/.4	.1/.2	.0/.2	.0/.1	
36,000	12,100	.2/.7	.2/.6	.2/.4	.1/.2	.0/.2	.0/.1	
37,000	12,100	.2/.7	.2/.5	.1/.4	.0/.2	.0/.1		
38,000	12,100	.1/.6	.1/.5	.1/.4	.0/.2	.0/.1		
39,000	12,100	.1/.6	.1/.5	.1/.3	.0/.2	.0/.1		
40,000	12,100	.0/.6	.0/.5	.0/.3	.0/.2	.0/.1		

Range (meters)	DELAYED CASUALTIES — Target radius (meters): 800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Probable minimum R_D (meters): Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,025	1,275	190	263
8,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	220	280
9,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	245	298
10,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	975	1,250	270	315
11,000	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	975	1,225	300	333
12,000	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	950	1,225	325	350
13,000	.9/.9	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	950	1,200	355	368
14,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	925	1,200	380	385
15,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	925	1,175	405	403
16,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	900	1,175	435	420
17,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	875	1,150	460	438
18,000	.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		875	1,150	490	455
19,000	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1		850	1,125	515	473
20,000	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1		850	1,125	540	490
21,000	.8/.9	.6/.8	.4/.5	.2/.4	.2/.3	.1/.2	.1/.1		850	1,100	570	508
22,000	.8/.9	.6/.8	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		850	1,075	595	525
23,000	.8/.9	.6/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1		850	1,050	625	543
24,000	.8/.9	.6/.7	.4/.5	.2/.3	.1/.3	.1/.2	.1/.1		825	1,050	650	560
25,000	.7/.9	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.0/.1		800	1,025	675	578
26,000	.7/.9	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.0/.1		800	1,000	705	595
27,000	.7/.9	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.0/.1		800	975	730	613
28,000	.6/.8	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.0/.1		775	950	760	630
29,000	.6/.8	.4/.7	.3/.5	.2/.3	.1/.3	.1/.2	.0/.1		750	925	785	648
30,000	.6/.8	.4/.6	.3/.4	.1/.3	.1/.3	.1/.2	.0/.1		725	900	810	665
31,000	.6/.8	.4/.6	.2/.4	.1/.3	.1/.3	.0/.2	.0/.1		700	875	840	683
32,000	.5/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		675	825	865	700
33,000	.5/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1			650	800	895	718
34,000	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.1			625	775	920	735
35,000	.4/.7	.3/.6	.2/.4	.1/.3	.0/.2	.0/.1			575	725	945	753
36,000	.4/.7	.3/.5	.1/.4	.1/.3	.0/.2	.0/.1			550	675	975	770
37,000	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1			500	625	1,000	788
38,000	.3/.7	.2/.5	.1/.4	.0/.2	.0/.2	.0/.1			450	575	1,030	805
39,000	.2/.6	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1			400	525	1,055	823
40,000	.2/.6	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1			350	475	1,080	840

LFR 1

Figure 5.2e(1).

[1]Large Free Rocket.

PROTECTED Personnel Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES — Target radius (meters) 400	600	800	1,000	1,200	1,400	1,600	1,800
7,000	11,600	.9/.9	.9/.9	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2
8,000	11,600	.9/.9	.9/.9	.7/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2
9,000	11,600	.9/.9	.8/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2
10,000	11,600	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.1/.3	.1/.2
11,000	11,600	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2
12,000	11,600	.9/.9	.8/.9	.6/.7	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2
13,000	11,700	.9/.9	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2
14,000	11,700	.8/.9	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2
15,000	11,700	.8/.9	.6/.8	.4/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2
16,000	11,700	.7/.9	.5/.8	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.2
17,000	11,700	.6/.8	.4/.7	.2/.6	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1
18,000	11,700	.5/.8	.3/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1
19,000	11,800	.3/.7	.2/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1
20,000	11,800	.1/.7	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		
21,000	11,800	.0/.7	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		
22,000	11,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		
23,000	11,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			
24,000	11,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			
25,000	11,900	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			
26,000	11,900	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			
27,000	11,900	.0/.5	.0/.3	.0/.2	.0/.1				
28,000	11,900	.0/.4	.0/.3	.0/.2	.0/.1				
29,000	11,900	.0/.4	.0/.3	.0/.2	.0/.1				
30,000	12,000	.0/.4	.0/.3	.0/.2	.0/.1				
31,000	12,000	.0/.3	.0/.2	.0/.2	.0/.1				
32,000	12,000	.0/.3	.0/.2	.0/.2	.0/.1				
33,000	12,000	.0/.3	.0/.2	.0/.1					
34,000	12,000	.0/.3	.0/.2	.0/.1					
35,000	12,000	.0/.3	.0/.2	.0/.1					
36,000	12,100	.0/.3	.0/.2	.0/.1					
37,000	12,100	.0/.3	.0/.2	.0/.1					
38,000	12,100	.0/.2	.0/.1						
39,000	12,100	.0/.2	.0/.1						
40,000	12,100	.0/.2	.0/.1						

DELAYED CASUALTIES — Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	800	1,125	190	611
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	775	1,100	220	628
.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	750	1,075	245	646
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	700	1,050	270	663
.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	675	1,050	300	681
.9/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	650	1,025	325	698
.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	625	1,000	355	716
.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	575	975	380	733
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		525	950	405	751
.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1		475	925	435	768
.8/.9	.5/.7	.3/.4	.1/.3	.1/.2	.1/.1		425	900	460	786
.7/.9	.5/.6	.2/.4	.1/.3	.1/.2	.0/.1		375	875	490	803
.7/.9	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		275	825	515	821
.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.0/.1		150	800	540	838
.6/.8	.4/.6	.2/.4	.1/.2	.1/.2	.0/.1		0	775	570	856
.6/.8	.3/.6	.2/.4	.1/.2	.0/.2	.0/.1		0	725	595	873
.5/.8	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	700	625	891
.5/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		0	650	650	908
.4/.7	.2/.5	.1/.3	.0/.2	.0/.1			0	600	675	926
.4/.7	.2/.5	.1/.3	.0/.2	.0/.1			0	525	705	943
.3/.7	.1/.4	.0/.3	.0/.2	.0/.1			0	475	730	961
.2/.6	.1/.4	.0/.3	.0/.2	.0/.1			0	400	760	978
.2/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	300	785	996
.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	125	810	1,013
.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	0	840	1,031
.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			0	0	865	1,048
.0/.5	.0/.3	.0/.2	.0/.1				0	0	895	1,066
.0/.4	.0/.3	.0/.2	.0/.1				0	0	920	1,083
.0/.4	.0/.3	.0/.2	.0/.1				0	0	945	1,101
.0/.4	.0/.3	.0/.2	.0/.1				0	0	975	1,118
.0/.4	.0/.3	.0/.2	.0/.1				0	0	1,000	1,136
.0/.4	.0/.2	.0/.2	.0/.1				0	0	1,030	1,153
.0/.3	.0/.2	.0/.2	.0/.1				0	0	1,055	1,171
.0/.3	.0/.2	.0/.2	.0/.1				0	0	1,080	1,188

Figure 5.2e(2)

PROTECTED Personnel Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. PROMPT CASUALTIES Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	DELAYED CASUALTIES Target radius (meters) 800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Probable minimum R_D (meters) Prompt	Delayed	Offset distance d_o (meters)	Height of burst (meters)
7,000	6,600	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	190	0
8,000	6,600	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	220	0
9,000	6,600	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	245	0
10,000	6,600	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	270	0
11,000	6,600	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	300	0
12,000	6,700	.9/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.6/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	325	0
13,000	6,700	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	355	0
14,000	6,700	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	380	0
15,000	6,700	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	405	0
16,000	6,700	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.8/.9	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	435	0
17,000	6,700	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	460	0
18,000	6,800	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	490	0
19,000	6,800	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	515	0
20,000	6,800	.8/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	540	0
21,000	6,800	.8/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	570	0
22,000	6,800	.7/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.1	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	595	0
23,000	6,900	.7/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	625	0
24,000	6,900	.7/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	650	0
25,000	6,900	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	675	0
26,000	6,900	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	705	0
27,000	6,900	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	730	0
28,000	6,900	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	760	0
29,000	7,000	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	785	0
30,000	7,000	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	810	0
31,000	7,000	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	840	0
32,000	7,000	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	865	0
33,000	7,000	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	895	0
34,000	7,000	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	920	0
35,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	945	0
36,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	975	0
37,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	1,000	0
38,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	1,030	0
39,000	7,100	.4/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	1,055	0
40,000	7,100	.4/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	1,080	0

[1] Initial effects only. Fallout governs.

Figure 5.2e(3).

LFR 1

[1] Large Free Rocket.

MATERIEL Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range (meters)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage. WHEELED VEHICLES — Target radius (meters) 300	400	500	600	700	800	900	1,000	Prob min R_D (meters)	TANKS AND ARTILLERY — Target radius (meters) 100	150	200	250	300	350	400	450	Prob min R_D (meters)	Offset distance d_o (meters)	Height of burst (meters)
7,000	3,400	.8/.9	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	400	.2/.7	.2/.6	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	75	190	175
8,000	3,400	.8/.9	.6/.8	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	375	.0/.6	.0/.4	.0/.2	.0/.2	.0/.1				25	220	192
9,000	3,400	.6/.8	.5/.7	.4/.6	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	275	.0/.5	.0/.3	.0/.2	.0/.1					0	245	210
10,000	3,400	.4/.8	.2/.7	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	175	.0/.4	.0/.2	.0/.1						0	270	227
11,000	3,400	.1/.7	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	100	.0/.4	.0/.2	.0/.1						0	300	245
12,000	3,500	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1	50	.0/.2	.0/.1							0	325	262
13,000	3,500	.0/.5	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.2	.0/.1							0	355	280
14,000	3,500	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.1							0	380	297
15,000	3,500	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1								0	405	315
16,000	3,500	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	435	332
17,000	3,500	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.1								0	460	350
18,000	3,600	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1								0	490	367
19,000	3,600	.0/.2	.0/.2	.0/.1						0	.0/.1								0	515	385
20,000	3,600	.0/.2	.0/.2	.0/.1						0	.0/.1								0	540	402
21,000	3,600	.0/.2	.0/.1							0	.0/.1								0	570	420
22,000	3,600	.0/.1								0	.0/.1								0	595	437
23,000	3,600	.0/.1								0	.0/.1								0	625	455
24,000	3,700	.0/.1								0									0	650	472
25,000	3,700	.0/.1								0									0	675	490
26,000	3,700	.0/.1								0									0	705	507
27,000	3,700	.0/.1								0									0	730	525
28,000	3,700	.0/.1								0									0	760	542
29,000	3,700	.0/.1								0									0	785	560
30,000	3,800									0									0	810	577
31,000	3,800									0									0	840	595
32,000	3,800									0									0	865	612
33,000	3,800									0									0	895	630
34,000	3,800									0									0	920	647
35,000	3,800									0									0	945	665
36,000	3,900									0									0	975	682
37,000	3,900									0									0	1,000	700
38,000	3,900									0									0	1,030	717
39,000	3,900									0									0	1,055	735
40,000	3,900									0									0	1,080	752

Figure 5.3a(1).

MATERIEL Targets
Large Free Rocket

HIGH Airburst

Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES								TANKS AND ARTILLERY										
		Target radius (meters)							Prob min R_D	Target radius (meters)								Prob min R_D		
(meters)	(meters)	200	300	400	500	600	700	800	(meters)	100								(meters)	(meters)	(meters)
7,000	3,400	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	50	.0/.1								0	190	303
8,000	3,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.1								0	220	320
9,000	3,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1			0	.0/.1								0	245	338
10,000	3,400	.0/.3	.0/.3	.0/.2	.0/.1				0	.0/.1								0	270	355
11,000	3,400	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	300	373
12,000	3,400	.0/.2	.0/.2	.0/.1					0	.0/.1								0	325	390
13,000	3,500	.0/.2	.0/.1						0									0	355	408
14,000	3,500	.0/.1							0									0	380	425
15,000	3,500	.0/.1							0									0	405	443
16,000	3,500	.0/.1							0									0	435	460
17,000	3,500	.0/.1							0									0	460	478
18,000	3,500	.0/.1							0									0	490	495
19,000	3,600	.0/.1							0									0	515	513
20,000	3,600								0									0	540	530
21,000	3,600								0									0	570	548
22,000	3,600								0									0	595	565
23,000	3,600								0									0	625	583
24,000	3,600								0									0	650	600
25,000	3,700								0									0	675	618
26,000	3,700								0									0	705	635
27,000	3,700								0									0	730	653
28,000	3,700								0									0	760	670
29,000	3,700								0									0	785	688
30,000	3,700								0									0	810	705
31,000	3,800								0									0	840	723
32,000	3,800								0									0	865	740
33,000	3,800								0									0	895	758
34,000	3,800								0									0	920	775
35,000	3,800								0									0	945	793
36,000	3,800								0									0	975	810
37,000	3,900								0									0	1,000	828
38,000	3,900								0									0	1,030	845
39,000	3,900								0									0	1,055	863
40,000	3,900								0									0	1,080	880

Figure 5.3a(2).

LFR 1

[1] Large Free Rocket.

MATERIEL Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ez)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	200	300	400	500	600	700	800	900	(meters)	150	200	250	300	350	400	450	500	(meters)	(meters)	(meters)
7,000	2,200	.8/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	225	190	0
8,000	2,200	.8/.9	.6/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	225	220	0
9,000	2,200	.7/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.4/.7	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	225	245	0
10,000	2,300	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.3/.7	.3/.6	.3/.5	.3/.4	.2/.4	.2/.3	.2/.2	.1/.2	225	270	0
11,000	2,300	.6/.8	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.2/.6	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	225	300	0
12,000	2,300	.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.2/.6	.2/.5	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	225	325	0
13,000	2,300	.4/.8	.4/.7	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.1/.5	.1/.5	.2/.4	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	225	355	0
14,000	2,300	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.5	.1/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	225	380	0
15,000	2,300	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.5	.0/.4	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	225	405	0
16,000	2,400	.2/.7	.2/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.4	.0/.4	.1/.4	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	435	0
17,000	2,400	.2/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.4	.0/.4	.0/.3	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	460	0
18,000	2,400	.1/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.4	.0/.3	.0/.3	.0/.3	.1/.3	.1/.3	.1/.2	.1/.2	225	490	0
19,000	2,400	.1/.6	.1/.5	.2/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	225	515	0
20,000	2,400	.1/.5	.1/.5	.1/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	225	540	0
21,000	2,400	.0/.5	.1/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	225	570	0
22,000	2,500	.0/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	595	0
23,000	2,500	.0/.5	.0/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	225	625	0
24,000	2,500	.0/.4	.0/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	325	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	225	650	0
25,000	2,500	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	225	675	0
26,000	2,500	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	225	705	0
27,000	2,600	.0/.4	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		225	730	0
28,000	2,600	.0/.4	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		225	760	0
29,000	2,600	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			225	785	0
30,000	2,600	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				225	810	0
31,000	2,600	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	.1/.1	325	.0/.2	.0/.2	.0/.2	.0/.1					225	840	0
32,000	2,600	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.2	.0/.2	.0/.1						225	865	0
33,000	2,700	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.2	.0/.1							225	895	0
34,000	2,700	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.1								225	920	0
35,000	2,700	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.1								225	945	0
36,000	2,700	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.1								225	975	0
37,000	2,700	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.1								225	1,000	0
38,000	2,700	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.1								225	1,030	0
39,000	2,800	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			325	.0/.1								225	1,055	0
40,000	2,800	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			325	.0/.1								225	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.3a(3)

Range	*Minimum safe distance (negligible risk, UnW Ex)*	*FRACTION OF TARGET COVERED* *In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.*																	*Offset distance d_o*	*Height of burst*
		WHEELED VEHICLES									**TANKS AND ARTILLERY**									
		Target radius (meters)								*Prob min R_D*	*Target radius (meters)*								*Prob min R_D*	
(meters)	*(meters)*	600	700	800	900	1,000	1,100	1,200	1,300	*(meters)*	200	300	400	500	600	700	800		*(meters)*	*(meters)*	*(meters)*
7,000	4,200	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	575	.5/.8	.3/.7	.2/.5	.1/.4	.0/.3	.0/.2	.0/.1		*175*	190	188
8,000	4,200	.7/.8	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	550	.3/.7	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		*150*	220	205
9,000	4,200	.6/.8	.5/.7	.4/.5	.3/.4	.2/.4	.2/.3	.1/.3	.1/.2	525	.2/.6	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1			*100*	245	223
10,000	4,300	.6/.7	.5/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	500	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				*50*	270	240
11,000	4,300	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	450	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1				*0*	300	258
12,000	4,300	.3/.6	.2/.5	.2/.4	.1/.4	.1/.3	.1/.2	.0/.2	.0/.2	275	.0/.5	.0/.3	.0/.2	.0/.1					0	325	275
13,000	4,300	.1/.6	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	200	.0/.4	.0/.3	.0/.2	.0/.1					*0*	355	293
14,000	4,300	.0/.5	.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	125	.0/.3	.0/.2	.0/.1						*0*	380	310
15,000	4,300	.0/.5	.0/.4	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	75	.0/.3	.0/.2	.0/.1						*0*	405	328
16,000	4,300	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		0	.0/.3	.0/.2	.0/.1						*0*	435	345
17,000	4,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.2	.0/.1						0	460	363
18,000	4,400	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1			0	.0/.2	.0/.1							*0*	490	380
19,000	4,400	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.2	.0/.1							0	515	398
20,000	4,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.2	.0/.1							*0*	540	415
21,000	4,400	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.2	.0/.1							*0*	570	433
22,000	4,500	.0/.2	.0/.2	.0/.1						0	.0/.1								*0*	595	450
23,000	4,500	.0/.2	.0/.2	.0/.1						0	.0/.1								*0*	625	468
24,000	4,500	.0/.2	.0/.1							0	.0/.1								0	650	485
25,000	4,500	.0/.1								0	.0/.1								0	675	503
26,000	4,500	.0/.1								0	.0/.1								*0*	705	520
27,000	4,500	.0/.1								0	.0/.1								0	730	538
28,000	4,600	.0/.1								0	.0/.1								*0*	760	555
29,000	4,600	.0/.1								0	.0/.1								*0*	785	573
30,000	4,600	.0/.1								0	.0/.1								*0*	810	590
31,000	4,600	.0/.1								0	.0/.1								0	840	608
32,000	4,600	.0/.1								0	.0/.1								*0*	865	625
33,000	4,600	.0/.1								0	.0/.1								*0*	895	643
34,000	4,700	.0/.1								0	.0/.1								*0*	920	660
35,000	4,700	.0/.1								0	.0/.1								*0*	945	678
36,000	4,700	.0/.1								0	.0/.1								*0*	975	695
37,000	4,700									0	.0/.1								0	1,000	713
38,000	4,700									0	.0/.1								*0*	1,030	730
39,000	4,700									0	.0/.1								*0*	1,055	748
40,000	4,800									0	.0/.1								*0*	1,080	765

Figure 5.3b(1).

LFR 1

[1]Large Free Rocket.

MATERIEL Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	*Minimum safe distance (negligible risk, UnW Ex)*	*FRACTION OF TARGET COVERED* *In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.*																*Offset distance d_o*	*Height of burst*
		WHEELED VEHICLES									**TANKS AND ARTILLERY**								
		Target radius (meters)								Prob min R_D	*Target radius (meters)*							Prob min R_D	
(meters)	*(meters)*	400	500	600	700	800	900	1,000	1,100	*(meters)*	200							*(meters)*	*(meters)*	*(meters)*
7,000	4,200	.2/.7	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	200	.0/.1							0	190	350
8,000	4,200	.1/.6	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	125	.0/.1							0	220	367
9,000	4,200	.0/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		75	.0/.1							0	245	385
10,000	4,200	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1							0	270	402
11,000	4,300	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1							0	300	420
12,000	4,300	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.1							0	325	437
13,000	4,300	.0/.2	.0/.2	.0/.2	.0/.1					0								0	355	455
14,000	4,300	.0/.2	.0/.2	.0/.1						0								0	380	472
15,000	4,300	.0/.2	.0/.1							0								0	405	490
16,000	4,300	.0/.1								0								0	435	507
17,000	4,400	.0/.1								0								0	460	525
18,000	4,400	.0/.1								0								0	490	542
19,000	4,400	.0/.1								0								0	515	560
20,000	4,400	.0/.1								0								0	540	577
21,000	4,400	.0/.1								0								0	570	595
22,000	4,400	.0/.1								0								0	595	612
23,000	4,500	.0/.1								0								0	625	630
24,000	4,500	.0/.1								0								0	650	647
25,000	4,500									0								0	675	665
26,000	4,500									0								0	705	682
27,000	4,500									0								0	730	700
28,000	4,500									0								0	760	717
29,000	4,600									0								0	785	735
30,000	4,600									0								0	810	752
31,000	4,600									0								0	840	770
32,000	4,600									0								0	865	787
33,000	4,600									0								0	895	805
34,000	4,700									0								0	920	822
35,000	4,700									0								0	945	840
36,000	4,700									0								0	975	857
37,000	4,700									0								0	1,000	875
38,000	4,700									0								0	1,030	892
39,000	4,700									0								0	1,055	910
40,000	4,800									0								0	1,080	927

Figure 5.3b(2).

IMPACT Burst
Produces fallout

Range	*Minimum safe distance*[1] *(negligible risk, UnW Ex)*	*FRACTION OF TARGET COVERED* *In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.*																	*Offset distance d_o*	*Height of burst*
		WHEELED VEHICLES									**TANKS AND ARTILLERY**									
		Target radius (meters)								*Prob min R_D*	*Target radius (meters)*								*Prob min R_D*	
(meters)	*(meters)*	400	500	600	700	800	900	1,000	1,100	*(meters)*	100	200	300	400	500	600	700	800	*(meters)*	*(meters)*	*(meters)*
7,000	2,700	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1	300	190	0
8,000	2,700	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.8/.9	.6/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	300	220	0
9,000	2,800	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.7/.9	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	300	245	0
10,000	2,800	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.7/.9	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	300	270	0
11,000	2,800	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.6/.8	.4/.5	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	300	300	0
12,000	2,800	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.5/.8	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	325	0
13,000	2,800	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.4/.8	.3/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	355	0
14,000	2,900	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.2/.7	.2/.7	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	380	0
15,000	2,900	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.2/.7	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	405	0
16,000	2,900	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.1/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	435	0
17,000	2,900	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.6	.1/.5	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	300	460	0
18,000	2,900	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.6	.1/.5	.1/.5	.1/.4	.2/.3	.1/.2	.1/.2	.1/.1	300	490	0
19,000	2,900	.4/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	300	515	0
20,000	3,000	.3/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	540	0
21,000	3,000	.3/.6	.3/.5	.3/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	570	0
22,000	3,000	.2/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.5	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	595	0
23,000	3,000	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.4	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.1	300	625	0
24,000	3,000	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.4	.0/.4	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.1	300	650	0
25,000	3,000	.2/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	450	.0/.4	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	300	675	0
26,000	3,100	.1/.5	.1/.4	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	450	.0/.4	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	300	705	0
27,000	3,100	.1/.5	.1/.4	.1/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	450	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.1/.2	.1/.1	300	730	0
28,000	3,100	.1/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	450	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	.1/.1	300	760	0
29,000	3,100	.1/.4	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	450	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		300	785	0
30,000	3,100	.0/.4	.1/.4	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	450	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		300	810	0
31,000	3,200	.0/.4	.1/.4	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	450	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		300	840	0
32,000	3,200	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.2	450	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		300	865	0
33,000	3,200	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.2	450	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		300	895	0
34,000	3,200	.0/.4	.0/.3	.0/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		300	920	0
35,000	3,200	.0/.4	.0/.3	.0/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			300	945	0
36,000	3,200	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			300	975	0
37,000	3,300	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			300	1,000	0
38,000	3,300	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1			300	1,030	0
39,000	3,300	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				300	1,055	0
40,000	3,300	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	.1/.1	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				300	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.3b(3).

LFR 1

[1]Large Free Rocket.

MATERIEL Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	500	700	900	1,100	1,300	1,500	1,700	1,900	(meters)	200	300	400	500	600	700	800	900	(meters)	(meters)	(meters)
7,000	6,000	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	800	.9/.9	.8/.9	.6/.8	.4/.7	.2/.5	.2/.4	.1/.3	.1/.2	325	190	205
8,000	6,000	.9/.9	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	775	.8/.9	.6/.9	.4/.7	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	275	220	222
9,000	6,100	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	775	.6/.9	.5/.8	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	225	245	240
10,000	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	750	.4/.8	.3/.7	.2/.6	.1/.5	.0/.3	.0/.3	.0/.2	.0/.2	176	270	257
11,000	6,100	.9/.9	.7/.9	.5/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	700	.2/.7	.2/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	150	300	275
12,000	6,100	.8/.9	.7/.8	.5/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	675	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		100	325	292
13,000	6,100	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	650	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			50	355	310
14,000	6,100	.7/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	575	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	380	327
15,000	6,200	.6/.8	.4/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	375	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	405	345
16,000	6,200	.4/.8	.2/.7	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	435	362
17,000	6,200	.2/.7	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	225	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1				0	460	380
18,000	6,200	.1/.7	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		150	.0/.4	.0/.3	.0/.2	.0/.1					0	490	397
19,000	6,200	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		75	.0/.3	.0/.2	.0/.2	.0/.1					0	515	415
20,000	6,200	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.3	.0/.2	.0/.2	.0/.1					0	540	432
21,000	6,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.3	.0/.2	.0/.1						0	570	450
22,000	6,300	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.3	.0/.2	.0/.1						0	595	467
23,000	6,300	.0/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.3	.0/.2	.0/.1						0	625	485
24,000	6,300	.0/.4	.0/.3	.0/.3	.0/.2	.0/.1				0	.0/.2	.0/.2	.0/.1						0	650	502
25,000	6,300	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.2	.0/.1							0	675	520
26,000	6,300	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.2	.0/.1							0	705	537
27,000	6,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.2	.0/.1							0	730	555
28,000	6,400	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.2	.0/.1							0	760	572
29,000	6,400	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.2	.0/.1							0	785	590
30,000	6,400	.0/.2	.0/.2	.0/.1						0	.0/.1								0	810	607
31,000	6,400	.0/.2	.0/.2	.0/.1						0	.0/.1								0	840	625
32,000	6,400	.0/.2	.0/.2	.0/.1						0	.0/.1								0	865	642
33,000	6,500	.0/.2	.0/.1							0	.0/.1								0	895	660
34,000	6,500	.0/.2	.0/.1							0	.0/.1								0	920	677
35,000	6,500	.0/.1								0	.0/.1								0	945	695
36,000	6,500	.0/.1								0	.0/.1								0	975	712
37,000	6,500	.0/.1								0	.0/.1								0	1,000	730
38,000	6,600	.0/.1								0	.0/.1								0	1,030	747
39,000	6,600	.0/.1								0	.0/.1								0	1,055	765
40,000	6,600	.0/.1								0	.0/.1								0	1,080	782

Figure 5.3c(1).

MATERIEL Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	(meters)	200	250	300	350	400				(meters)	(meters)	(meters)
7,000	5,900	.9/.9	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1	450	.0/.3	.0/.2	.0/.2	.0/.1	.0/.1				0	190	409
8,000	6,000	.6/.9	.3/.8	.1/.6	.1/.4	.0/.3	.0/.2	.0/.1		325	.0/.3	.0/.2	.0/.1	.0/.1					0	220	426
9,000	6,000	.4/.8	.2/.7	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1		250	.0/.2	.0/.1	.0/.1	.0/.1					0	245	443
10,000	6,600	.2/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			175	.0/.2	.0/.1	.0/.1	.0/.1					0	270	461
11,000	6,000	.1/.6	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			125	.0/.1	.0/.1	.0/.1						0	300	479
12,000	6,000	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				50	.0/.1	.0/.1							0	325	496
13,000	6,100	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	.0/.1								0	355	514
14,000	6,100	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	380	531
15,000	6,100	.0/.4	.0/.3	.0/.2	.0/.1					0	.0/.1								0	405	549
16,000	6,100	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1								0	435	566
17,000	6,100	.0/.3	.0/.2	.0/.1						0	.0/.1								0	460	584
18,000	6,100	.0/.2	.0/.2	.0/.1						0	.0/.1								0	490	601
19,000	6,200	.0/.2	.0/.2	.0/.1						0									0	515	619
20,000	6,200	.0/.2	.0/.1							0									0	540	636
21,000	6,200	.0/.2	.0/.1							0									0	570	654
22,000	6,200	.0/.1								0									0	595	671
23,000	6,200	.0/.1								0									0	625	689
24,000	6,200	.0/.1								0									0	650	706
25,000	6,300	.0/.1								0									0	675	724
26,000	6,300	.0/.1								0									0	705	741
27,000	6,300	.0/.1								0									0	730	759
28,000	6,300	.0/.1								0									0	760	776
29,000	6,300	.0/.1								0									0	785	794
30,000	6,300	.0/.1								0									0	810	811
31,000	6,400	.0/.1								0									0	840	829
32,000	6,400	.0/.1								0									0	865	846
33,000	6,400									0									0	895	864
34,000	6,500									0									0	920	881
35,000	6,500									0									0	945	899
36,000	6,500									0									0	975	916
37,000	6,500									0									0	1,000	934
38,000	6,500									0									0	1,030	951
39,000	6,600									0									0	1,055	969
40,000	6,600									0									0	1,080	986

Figure 5.3c(2).

LFR 1

[1]Large Free Rocket.

MATERIEL Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES								TANKS AND ARTILLERY										
		Target radius (meters)							Prob min R_D	Target radius (meters)								Prob min R_D		
(meters)	(meters)	400	600	800	1,000	1,200	1,400	1,600	(meters)	300	400	500	600	700	800	900	1,000	(meters)	(meters)	(meters)
7,000	3,600	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	190	0
8,000	3,600	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.7/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	220	0
9,000	3,600	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	245	0
10,000	3,600	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	270	0
11,000	3,600	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	300	0
12,000	3,600	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.5/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	325	0
13,000	3,700	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.5/.8	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	355	0
14,000	3,700	.7/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	380	0
15,000	3,700	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	405	0
16,000	3,700	.6/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	435	0
17,000	3,700	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	460	0
18,000	3,700	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.3/.6	.3/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	490	0
19,000	3,800	.5/.8	.4/.6	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.2/.6	.3/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	515	0
20,000	3,800	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	540	0
21,000	3,800	.5/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1	575	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	400	570	0
22,000	3,800	.4/.8	.4/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1	575	.1/.5	.2/.5	.2/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	400	595	0
23,000	3,800	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	575	.1/.5	.1/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	400	625	0
24,000	3,900	.4/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.1/.5	.1/.4	.1/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	400	650	0
25,000	3,900	.4/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	400	675	0
26,000	3,900	.3/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	400	705	0
27,000	3,900	.3/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.4	.1/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	400	730	0
28,000	3,900	.2/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	400	760	0
29,000	3,900	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	400	785	0
30,000	4,000	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.4	.0/.4	.0/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	400	810	0
31,000	4,000	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.4	.0/.3	.0/.3	.1/.3	.1/.2	.1/.2	.1/.2	.1/.1	400	840	0
32,000	4,000	.1/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.4	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.1	400	865	0
33,000	4,000	.1/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	575	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	.1/.1	400	895	0
34,000	4,000	.1/.5	.1/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	575	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.1/.1	400	920	0
35,000	4,000	.1/.5	.1/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1	575	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	.1/.1	400	945	0
36,000	4,100	.1/.5	.1/.4	.1/.4	.2/.3	.1/.2	.1/.2	.1/.1	575	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	.1/.1	400	975	0
37,000	4,100	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	575	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.1/.1	400	1,000	0
38,000	4,100	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	575	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	400	1,030	0
39,000	4,100	.0/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	575	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1	400	1,055	0
40,000	4,100	.0/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1	575	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		400	1,055	0

[1]Initial effects only. Fallout governs.

Figure 5.3c(3).

MATERIEL Targets
Large Free Rocket

LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	400	800	1,200	1,600	2,000	2,400	2,800	3,200	(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	(meters)	(meters)	(meters)
7,000	8,900	.9/.9	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	1,225	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	625	190	234
8,000	8,900	.9/.9	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	1,200	.9/.9	.7/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	575	220	251
9,000	8,900	.9/.9	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	1,175	.8/.9	.6/.8	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	500	245	269
10,000	8,900	.9/.9	.9/.9	.8/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1	1,150	.8/.9	.5/.8	.3/.6	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	450	270	286
11,000	8,900	.9/.9	.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	1,125	.7/.9	.4/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.1		400	300	304
12,000	8,900	.9/.9	.9/.9	.7/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1	1,100	.5/.8	.3/.7	.1/.5	.1/.3	.0/.2	.0/.2	.0/.1		350	325	321
13,000	9,000	.9/.9	.9/.9	.7/.8	.4/.5	.2/.4	.1/.2	.1/.2	.1/.1	1,075	.4/.8	.2/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1		300	355	339
14,000	9,000	.9/.9	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	1,050	.3/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.1			250	380	356
15,000	9,000	.9/.9	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1	1,025	.2/.7	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1			200	405	374
16,000	9,000	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	1,000	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1				150	435	391
17,000	9,000	.9/.9	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	950	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1				100	460	409
18,000	9,000	.9/.9	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	900	.0/.5	.0/.3	.0/.2	.0/.1					50	490	426
19,000	9,100	.9/.9	.7/.9	.4/.7	.2/.4	.1/.3	.1/.2	.0/.1		825	.0/.5	.0/.3	.0/.2	.0/.1					0	515	444
20,000	9,100	.9/.9	.5/.8	.2/.6	.1/.4	.0/.3	.0/.2	.0/.1		600	.0/.4	.0/.3	.0/.2	.0/.1					0	540	461
21,000	9,100	.8/.9	.3/.8	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1		475	.0/.4	.0/.2	.0/.2	.0/.1					0	570	479
22,000	9,100	.6/.9	.2/.8	.1/.6	.0/.4	.0/.2	.0/.2	.0/.1		400	.0/.4	.0/.2	.0/.1						0	595	496
23,000	9,100	.4/.8	.1/.7	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		325	.0/.3	.0/.2	.0/.1						0	625	514
24,000	9,100	.2/.8	.0/.5	.0/.3	.0/.2	.0/.1				250	.0/.3	.0/.2	.0/.1						0	650	531
25,000	9,200	.1/.8	.0/.5	.0/.3	.0/.2	.0/.1				175	.0/.3	.0/.2	.0/.1						0	675	549
26,000	9,200	.0/.7	.0/.4	.0/.3	.0/.2	.0/.1				100	.0/.3	.0/.2	.0/.1						0	705	566
27,000	9,200	.0/.7	.0/.4	.0/.2	.0/.2	.0/.1				25	.0/.2	.0/.2	.0/.1						0	730	584
28,000	9,200	.0/.7	.0/.4	.0/.2	.0/.1					0	.0/.2	.0/.1							0	760	601
29,000	9,200	.0/.6	.0/.4	.0/.2	.0/.1					0	.0/.2	.0/.1							0	785	619
30,000	9,300	.0/.6	.0/.4	.0/.2	.0/.1					0	.0/.2	.0/.1							0	810	636
31,000	9,300	.0/.6	.0/.3	.0/.2	.0/.1					0	.0/.2	.0/.1							0	840	654
32,000	9,300	.0/.5	.0/.3	.0/.2	.0/.1					0	.0/.2	.0/.1							0	865	671
33,000	9,300	.0/.5	.0/.3	.0/.1						0	.0/.2	.0/.1							0	895	689
34,000	9,300	.0/.5	.0/.3	.0/.1						0	.0/.1								0	920	706
35,000	9,300	.0/.4	.0/.2	.0/.1						0	.0/.1								0	945	724
36,000	9,400	.0/.4	.0/.2	.0/.1						0	.0/.1								0	975	741
37,000	9,400	.0/.4	.0/.2	.0/.1						0	.0/.1								0	1,000	759
38,000	9,400	.0/.3	.0/.1							0	.0/.1								0	1,030	776
39,000	9,400	.0/.3	.0/.1							0	.0/.1								0	1,055	794
40,000	9,400	.0/.3	.0/.1							0	.0/.1								0	1,080	811

Figure 5.3d(1).

LFR 1

[1] Large Free Rocket.

MATERIEL Targets
Large Free Rocket

HIGH Airburst

Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Offset distance d_o	Height of burst
		WHEELED VEHICLES								TANKS AND ARTILLERY									
		Target radius (meters)							Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	400	800	1,200	1,600	2,000	2,400	2,800	(meters)	400	600							(meters)	(meters)	(meters)
7,000	8,800	.9/.9	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1	950	.0/.2	.0/.1							100	190	510
8,000	8,900	.9/.9	.8/.9	.5/.7	.3/.4	.1/.3	.1/.2	.1/.1	900	.0/.2	.0/.1							50	220	527
9,000	8,900	.9/.9	.8/.9	.5/.6	.2/.4	.1/.2	.1/.2	.0/.1	775	.0/.2	.0/.1							0	245	545
10,000	8,900	.9/.9	.6/.8	.2/.6	.1/.3	.1/.2	.0/.2	.0/.1	575	.0/.1								0	270	562
11,000	8,900	.8/.9	.3/.8	.1/.5	.1/.3	.1/.2	.0/.1		450	.0/.1								0	300	580
12,000	8,900	.7/.9	.2/.7	.0/.5	.0/.3	.0/.2	.0/.1		375	.0/.1								0	325	597
13,000	8,900	.5/.8	.0/.6	.0/.4	.0/.2	.0/.1			300	.0/.1								0	355	615
14,000	9,000	.3/.8	.0/.6	.0/.4	.0/.2	.0/.1			225	.0/.1								0	380	632
15,000	9,000	.2/.7	.0/.5	.0/.3	.0/.2	.0/.1			150	.0/.1								0	405	650
16,000	9,000	.0/.7	.0/.5	.0/.3	.0/.2	.0/.1			100	.0/.1								0	435	667
17,000	9,000	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1			0	.0/.1								0	460	685
18,000	9,000	.0/.5	.0/.4	.0/.2	.0/.1				0									0	490	702
19,000	9,000	.0/.5	.0/.3	.0/.2	.0/.1				0									0	515	720
20,000	9,100	.0/.4	.0/.3	.0/.2	.0/.1				0									0	540	737
21,000	9,100	.0/.4	.0/.3	.0/.2	.0/.1				0									0	570	755
22,000	9,100	.0/.3	.0/.2	.0/.2	.0/.1				0									0	595	772
23,000	9,100	.0/.3	.0/.2	.0/.1					0									0	625	790
24,000	9,100	.0/.3	.0/.2	.0/.1					0									0	650	807
25,000	9,200	.0/.3	.0/.2	.0/.1					0									0	675	825
26,000	9,200	.0/.2	.0/.2	.0/.1					0									0	705	842
27,000	9,200	.0/.2	.0/.1						0									0	730	860
28,000	9,200	.0/.2	.0/.1						0									0	760	877
29,000	9,200	.0/.2	.0/.1						0									0	785	895
30,000	9,200	.0/.2	.0/.1						0									0	810	912
31,000	9,300	.0/.1							0									0	840	930
32,000	9,300	.0/.1							0									0	865	947
33,000	9,300	.0/.1							0									0	895	965
34,000	9,300	.0/.1							0									0	920	982
35,000	9,300	.0/.1							0									0	945	1,000
36,000	9,300	.0/.1							0									0	975	1,017
37,000	9,400								0									0	1,000	1,035
38,000	9,400								0									0	1,030	1,052
39,000	9,400								0									0	1,055	1,070
40,000	9,400								0									0	1,080	1,087

Figure 5.3d(2).

MATERIEL Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range	Minimum safe distance[1] (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																		Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY										
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D		
(meters)	(meters)	400	800	1,200	1,600	2,000	2,400			(meters)	400	600	800	1,000	1,200	1,400	1,600		(meters)	(meters)	(meters)
7,000	5,000	.9/.9	.8/.9	.4/.5	.2/.3	.1/.2	.1/.1			850	.9/.9	.6/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	190	0
8,000	5,000	.9/.9	.8/.9	.4/.5	.2/.3	.1/.2	.1/.1			850	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	220	0
9,000	5,100	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	245	0
10,000	5,100	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.8/.9	.6/.7	.4/.5	.2/.3	.1/.1	.1/.2	.1/.1		550	270	0
11,000	5,100	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	300	0
12,000	5,100	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	325	0
13,000	5,100	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.7/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	355	0
14,000	5,100	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.7/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	380	0
15,000	5,200	.9/.9	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.6/.8	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	405	0
16,000	5,200	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.6/.8	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	435	0
17,000	5,200	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.6/.8	.5/.6	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		550	460	0
18,000	5,200	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	490	0
19,000	5,200	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	515	0
20,000	5,200	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1			850	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	540	0
21,000	5,300	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.1			850	.4/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	570	0
22,000	5,300	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.1			850	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	595	0
23,000	5,300	.8/.9	.5/.7	.4/.5	.2/.3	.1/.2	.1/.1			850	.4/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	625	0
24,000	5,300	.7/.9	.5/.7	.4/.5	.2/.3	.1/.2	.1/.1			850	.4/.7	.3/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	650	0
25,000	5,300	.7/.9	.5/.7	.4/.5	.2/.3	.1/.2	.1/.1			850	.3/.7	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	675	0
26,000	5,300	.7/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			850	.3/.7	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	705	0
27,000	5,400	.6/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			850	.2/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	730	0
28,000	5,400	.6/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			850	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	760	0
29,000	5,400	.6/.9	.4/.7	.3/.4	.2/.3	.1/.2	.1/.1			850	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	785	0
30,000	5,400	.6/.8	.4/.7	.3/.4	.2/.3	.1/.2	.1/.1			850	.2/.6	.2/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		550	810	0
31,000	5,400	.5/.8	.4/.7	.3/.4	.2/.3	.1/.2	.1/.1			850	.1/.6	.2/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		550	840	0
32,000	5,500	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.1/.5	.2/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		550	865	0
33,000	5,500	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.1/.5	.1/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		550	895	0
34,000	5,500	.4/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.1/.5	.1/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		550	920	0
35,000	5,500	.4/.8	.3/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.1/.5	.1/.4	.1/.4	.2/.3	.1/.2	.1/.2	.1/.1		550	945	0
36,000	5,500	.4/.8	.3/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.0/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1		550	975	0
37,000	5,500	.4/.7	.3/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.0/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1		550	1,000	0
38,000	5,600	.3/.7	.3/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.0/.5	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1		550	1,030	0
39,000	5,600	.3/.7	.3/.6	.3/.4	.2/.3	.1/.2	.1/.1			850	.0/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1		550	1,055	0
40,000	5,600	.2/.7	.2/.6	.2/.4	.2/.3	.1/.2	.1/.1			850	.0/.4	.0/.4	.1/.3	.1/.3	.1/.2	.1/.2	.1/.1		550	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.3d(3).

LFR 1

[1]Large Free Rocket.

MATERIEL Targets
Large Free Rocket
LOW Airburst
Precludes fallout

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius; the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	(meters)	(meters)	(meters)
7,000	11,300	.9/.9	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	1,625	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	925	190	263
8,000	11,600	.9/.9	.9/.9	.8/.9	.6/.6	.4/.5	.3/.4	.2/.3	.1/.2	1,625	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.3/.4	.2/.3	.1/.2	875	220	280
9,000	11,600	.9/.9	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	1,600	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	825	245	298
10,000	11,600	.9/.9	.9/.9	.8/.8	.6/.6	.4/.5	.3/.3	.2/.3	.1/.2	1,575	.9/.9	.7/.9	.5/.7	.3/.6	.2/.4	.2/.3	.1/.3	.1/.2	750	270	315
11,000	11,600	.9/.9	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	1,550	.8/.9	.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	675	300	333
12,000	11,700	.9/.9	.9/.9	.7/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	1,550	.8/.9	.5/.8	.3/.6	.2/.5	.1/.4	.1/.3	.1/.2	.0/.2	625	325	350
13,000	11,700	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	1,525	.7/.9	.4/.7	.3/.6	.2/.5	.1/.3	.1/.3	.0/.2	.0/.2	575	355	368
14,000	11,700	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	1,500	.6/.8	.4/.7	.2/.6	.1/.4	.1/.3	.1/.3	.0/.2	.0/.2	525	380	385
15,000	11,700	.9/.9	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	1,475	.5/.8	.3/.7	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	450	405	403
16,000	11,700	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	1,450	.4/.8	.2/.6	.1/.5	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	400	435	420
17,000	11,700	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	1,400	.3/.7	.2/.6	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	350	460	438
18,000	11,800	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	1,375	.2/.7	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		300	490	455
19,000	11,800	.9/.9	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	1,350	.1/.6	.1/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		250	515	473
20,000	11,800	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,325	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			200	540	490
21,000	11,800	.9/.9	.8/.9	.6/.7	.4/.5	.2/.4	.2/.3	.1/.2	.1/.2	1,275	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			150	570	508
22,000	11,800	.9/.9	.7/.9	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	1,250	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				100	595	525
23,000	11,800	.9/.9	.7/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.1/.2	1,175	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				50	625	543
24,000	11,900	.8/.9	.7/.8	.4/.7	.2/.5	.1/.3	.1/.3	.1/.2	.0/.2	1,075	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	650	560
25,000	11,900	.8/.9	.4/.8	.2/.6	.1/.5	.1/.3	.0/.2	.0/.2	.0/.2	825	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	675	578
26,000	11,900	.7/.9	.3/.8	.1/.6	.1/.4	.0/.3	.0/.2	.0/.2	.0/.1	675	.0/.4	.0/.3	.0/.2	.0/.1					0	705	595
27,000	11,900	.5/.8	.2/.7	.1/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	575	.0/.4	.0/.3	.0/.2	.0/.1					0	730	613
28,000	11,900	.3/.8	.1/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	500	.0/.3	.0/.2	.0/.2	.0/.1					0	760	630
29,000	12,000	.2/.8	.1/.7	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1	425	.0/.3	.0/.2	.0/.2	.0/.1					0	785	648
30,000	12,000	.1/.8	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		350	.0/.3	.0/.2	.0/.1						0	810	665
31,000	12,000	.1/.8	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		275	.0/.3	.0/.2	.0/.1						0	840	683
32,000	12,000	.0/.8	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		200	.0/.2	.0/.1							0	865	700
33,000	12,000	.0/.7	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		125	.0/.2	.0/.1							0	895	718
34,000	12,000	.0/.7	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		25	.0/.2	.0/.1							0	920	735
35,000	12,100	.0/.7	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.2	.0/.1							0	945	753
36,000	12,100	.0/.7	.0/.6	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.2	.0/.1							0	975	770
37,000	12,100	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	.0/.2	.0/.1							0	1,000	788
38,000	12,100	.0/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			0	.0/.2	.0/.1							0	1,030	805
39,000	12,100	.0/.6	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			0	.0/.1								0	1,055	823
40,000	12,100	.0/.6	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			0	.0/.1								0	1,080	840

Figure 5.3e(1).

MATERIEL Targets
Large Free Rocket

HIGH Airburst
Reduces intensity of induced contamination. Precludes fallout.

Range	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o	Height of burst
		WHEELED VEHICLES									TANKS AND ARTILLERY									
		Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
(meters)	(meters)	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	(meters)	400	600	800	1,000					(meters)	(meters)	(meters)
7,000	11,600	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	1,325	.2/.6	.1/.3	.0/.2	.0/.1					225	190	611
8,000	11,600	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.2	1,300	.1/.5	.0/.3	.0/.2	.0/.1					175	220	628
9,000	11,600	.9/.9	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1	1,250	.0/.4	.0/.2	.0/.1						125	245	646
10,000	11,600	.9/.9	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,200	.0/.4	.0/.2	.0/.1						75	270	663
11,000	11,600	.9/.9	.7/.8	.4/.6	.2/.4	.2/.3	.1/.2	.1/.2	.0/.1	1,100	.0/.3	.0/.2	.0/.1						25	300	681
12,000	11,600	.9/.9	.5/.8	.2/.6	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	850	.0/.3	.0/.1							0	325	698
13,000	11,700	.7/.9	.3/.8	.1/.6	.1/.4	.0/.3	.0/.2	.0/.1		700	.0/.2	.0/.1							0	355	716
14,000	11,700	.5/.9	.2/.7	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1		600	.0/.2	.0/.1							0	380	733
15,000	11,700	.4/.8	.1/.7	.1/.5	.0/.3	.0/.2	.0/.2	.0/.1		500	.0/.2	.0/.1							0	405	751
16,000	11,700	.2/.8	.1/.6	.0/.4	.0/.3	.0/.2	.0/.1			425	.0/.2	.0/.1							0	435	768
17,000	11,700	.1/.7	.0/.5	.0/.4	.0/.2	.0/.2	.0/.1			350	.0/.1								0	460	786
18,000	11,700	.1/.7	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1			275	.0/.1								0	490	803
19,000	11,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				200	.0/.1								0	515	821
20,000	11,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				125	.0/.1								0	540	838
21,000	11,800	.0/.6	.0/.4	.0/.3	.0/.2	.0/.1				25	.0/.1								0	570	856
22,000	11,800	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	.0/.1								0	595	873
23,000	11,800	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	625	891
24,000	11,800	.0/.4	.0/.3	.0/.2	.0/.1					0	.0/.1								0	650	908
25,000	11,900	.0/.4	.0/.3	.0/.2	.0/.1					0	.0/.1								0	675	926
26,000	11,900	.0/.4	.0/.3	.0/.2	.0/.1					0	.0/.1								0	705	943
27,000	11,900	.0/.4	.0/.3	.0/.2	.0/.1					0	.0/.1								0	730	961
28,000	11,900	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.1								0	760	978
29,000	11,900	.0/.3	.0/.2	.0/.1						0	.0/.1								0	785	996
30,000	12,000	.0/.3	.0/.2	.0/.1						0	.0/.1								0	810	1,013
31,000	12,000	.0/.3	.0/.2	.0/.1						0									0	840	1,031
32,000	12,000	.0/.2	.0/.2	.0/.1						0									0	865	1,048
33,000	12,000	.0/.2	.0/.1							0									0	895	1,066
34,000	12,000	.0/.2	.0/.1							0									0	920	1,083
35,000	12,000	.0/.2	.0/.1							0									0	945	1,101
36,000	12,100	.0/.2	.0/.1							0									0	975	1,118
37,000	12,100	.0/.1								0									0	1,000	1,136
38,000	12,100	.0/.1								0									0	1,030	1,153
39,000	12,100	.0/.1								0									0	1,055	1,171
40,000	12,100	.0/.1								0									0	1,080	1,188

Figure 5.3e(2).

LFR 1

[1]Large Free Rocket.

MATERIEL Targets
Large Free Rocket

IMPACT Burst
Produces fallout

Range (meters)	Minimum safe distance[1] (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o (meters)	Height of burst (meters)
		WHEELED VEHICLES								TANKS AND ARTILLERY										
		Target radius (meters)							Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)		
		800	1,200	1,600	2,000	2,400	2,800	3,200		600	800	1,000	1,200	1,400	1,600	1,800	2,000			
7,000	6,600	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.8/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	190	0
8,000	6,600	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.8/.9	.7/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	220	0
9,000	6,600	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	245	0
10,000	6,600	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	270	0
11,000	6,600	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	300	0
12,000	6,700	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	325	0
13,000	6,700	.9/.9	.6/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	355	0
14,000	6,700	.9/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	380	0
15,000	6,700	.9/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	405	0
16,000	6,700	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	435	0
17,000	6,700	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	460	0
18,000	6,800	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	490	0
19,000	6,800	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	515	0
20,000	6,800	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	540	0
21,000	6,800	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	570	0
22,000	6,800	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.5/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	595	0
23,000	6,900	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.5/.8	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	625	0
24,000	6,900	.7/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.5/.8	.4/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	650	0
25,000	6,900	.7/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	675	0
26,000	6,900	.7/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	705	0
27,000	6,900	.7/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.4/.7	.4/.6	.3/.5	.3/.4	.2/.2	.2/.2	.1/.2	.1/.1	750	730	0
28,000	6,900	.7/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	760	0
29,000	7,000	.6/.8	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	785	0
30,000	7,000	.6/.8	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.4/.7	.3/.6	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	810	0
31,000	7,000	.6/.8	.5/.7	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.4/.7	.3/.6	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	840	0
32,000	7,000	.6/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.3/.7	.3/.6	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.1	750	865	0
33,000	7,000	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.1	750	895	0
34,000	7,000	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.1	750	920	0
35,000	7,100	.6/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.2/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.1	750	945	0
36,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.2/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	750	975	0
37,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	750	1,000	0
38,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	750	1,030	0
39,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	750	1,055	0
40,000	7,100	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,100	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	750	1,080	0

[1]Initial effects only. Fallout governs.

Figure 5.3e(3).

Troop Safety Distances—Meters
Large Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	3,400	2,500	2,200	2,200	1,900	1,500	1,800	1,500	1,300
8,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,500	1,300
9,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
10,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,600	1,300
11,000	3,400	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
12,000	3,500	2,600	2,200	2,300	2,000	1,600	1,900	1,600	1,400
13,000	3,500	2,700	2,300	2,300	2,000	1,600	1,900	1,600	1,400
14,000	3,500	2,700	2,300	2,300	2,000	1,700	1,900	1,600	1,400
15,000	3,500	2,700	2,300	2,300	2,000	1,700	2,000	1,700	1,400
16,000	3,500	2,700	2,300	2,400	2,000	1,700	2,000	1,700	1,400
17,000	3,500	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
18,000	3,600	2,700	2,300	2,400	2,100	1,700	2,100	1,700	1,500
19,000	3,600	2,800	2,400	2,400	2,100	1,700	2,100	1,700	1,500
20,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,700	1,500
21,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,800	1,500
22,000	3,600	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
23,000	3,600	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
24,000	3,700	2,800	2,400	2,500	2,200	1,800	2,200	1,800	1,500
25,000	3,700	2,900	2,500	2,500	2,200	1,800	2,200	1,800	1,600
26,000	3,700	2,900	2,500	2,500	2,200	1,800	2,300	1,800	1,600
27,000	3,700	2,900	2,500	2,500	2,200	1,900	2,300	1,900	1,600
28,000	3,700	2,900	2,500	2,600	2,200	1,900	2,300	1,900	1,600
29,000	3,700	2,900	2,500	2,600	2,200	1,900	2,300	1,900	1,600
30,000	3,800	2,900	2,500	2,600	2,200	1,900	2,300	1,900	1,600
31,000	3,800	3,000	2,600	2,600	2,300	1,900	2,300	1,900	1,700
32,000	3,800	3,000	2,600	2,600	2,300	1,900	2,400	1,900	1,700
33,000	3,800	3,000	2,600	2,600	2,300	2,000	2,400	2,000	1,700
34,000	3,800	3,000	2,600	2,600	2,300	2,000	2,400	2,000	1,700
35,000	3,800	3,000	2,600	2,700	2,300	2,000	2,400	2,000	1,700
36,000	3,900	3,000	2,600	2,700	2,300	2,000	2,400	2,000	1,700
37,000	3,900	3,100	2,700	2,700	2,400	2,000	2,500	2,000	1,700
38,000	3,900	3,100	2,700	2,700	2,400	2,000	2,500	2,000	1,800
39,000	3,900	3,100	2,700	2,700	2,400	2,100	2,500	2,000	1,800
40,000	3,900	3,100	2,700	2,700	2,400	2,100	2,500	2,100	1,800

Figure 5.4a(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	3,400	2,500	2,100	2,200	1,900	1,500	1,800	1,500	1,300
8,000	3,400	2,600	2,200	2,200	1,900	1,500	1,800	1,500	1,300
9,000	3,400	2,600	2,200	2,200	1,900	1,600	1,800	1,500	1,300
10,000	3,400	2,600	2,200	2,200	1,900	1,600	1,900	1,600	1,300
11,000	3,400	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
12,000	3,400	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
13,000	3,500	2,600	2,200	2,300	2,000	1,600	1,900	1,600	1,300
14,000	3,500	2,700	2,300	2,300	2,000	1,600	2,000	1,600	1,400
15,000	3,500	2,700	2,300	2,300	2,000	1,600	2,100	1,600	1,400
16,000	3,500	2,700	2,300	2,300	2,000	1,700	2,100	1,700	1,400
17,000	3,500	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
18,000	3,500	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
19,000	3,600	2,700	2,300	2,400	2,000	1,700	2,100	1,700	1,400
20,000	3,600	2,800	2,400	2,400	2,100	1,700	2,200	1,700	1,500
21,000	3,600	2,800	2,400	2,400	2,100	1,700	2,200	1,700	1,500
22,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,800	1,500
23,000	3,600	2,800	2,400	2,400	2,100	1,800	2,200	1,800	1,500
24,000	3,600	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
25,000	3,700	2,800	2,400	2,500	2,100	1,800	2,200	1,800	1,500
26,000	3,700	2,900	2,500	2,500	2,200	1,800	2,300	1,800	1,500
27,000	3,700	2,900	2,500	2,500	2,200	1,800	2,300	1,800	1,600
28,000	3,700	2,900	2,500	2,500	2,200	1,800	2,300	1,800	1,600
29,000	3,700	2,900	2,500	2,500	2,200	1,900	2,300	1,900	1,600
30,000	3,700	2,900	2,500	2,600	2,200	1,900	2,300	1,900	1,600
31,000	3,800	2,900	2,500	2,600	2,200	1,900	2,300	1,900	1,600
32,000	3,800	2,900	2,600	2,600	2,300	1,900	2,400	1,900	1,600
33,000	3,800	3,000	2,600	2,600	2,300	1,900	2,400	1,900	1,600
34,000	3,800	3,000	2,600	2,600	2,300	1,900	2,400	1,900	1,700
35,000	3,800	3,000	2,600	2,600	2,300	2,000	2,400	1,900	1,700
36,000	3,800	3,000	2,600	2,700	2,300	2,000	2,400	2,000	1,700
37,000	3,900	3,000	2,600	2,700	2,300	2,000	2,500	2,000	1,700
38,000	3,900	3,000	2,600	2,700	2,300	2,000	2,500	2,000	1,700
39,000	3,900	3,100	2,700	2,700	2,400	2,000	2,500	2,000	1,700
40,000	3,900	3,100	2,700	2,700	2,400	2,000	2,500	2,000	1,700

Figure 5.4a(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

LFR 1

[1]Large Free Rocket.

Troop Safety Distances—Meters
Large Free Rocket

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	2,200	1,900	1,500	2,200	1,900	1,500	1,800	1,500	1,300
8,000	2,200	1,900	1,600	2,200	1,900	1,600	1,800	1,600	1,300
9,000	2,200	1,900	1,600	2,200	1,900	1,600	1,800	1,600	1,300
10,000	2,300	1,900	1,600	2,300	1,900	1,600	1,800	1,600	1,300
11,000	2,300	1,900	1,600	2,300	1,900	1,600	1,900	1,600	1,300
12,000	2,300	2,000	1,600	2,300	2,000	1,600	1,900	1,600	1,400
13,000	2,300	2,000	1,600	2,300	2,000	1,600	1,900	1,600	1,400
14,000	2,300	2,000	1,700	2,300	2,000	1,700	1,900	1,700	1,400
15,000	2,300	2,000	1,700	2,300	2,000	1,700	1,900	1,700	1,400
16,000	2,400	2,000	1,700	2,400	2,000	1,700	1,900	1,700	1,400
17,000	2,400	2,000	1,700	2,400	2,000	1,700	2,000	1,700	1,500
18,000	2,400	2,100	1,700	2,400	2,100	1,700	2,000	1,700	1,500
19,000	2,400	2,100	1,800	2,400	2,100	1,800	2,000	1,700	1,500
20,000	2,400	2,100	1,800	2,400	2,100	1,800	2,000	1,800	1,500
21,000	2,400	2,100	1,800	2,400	2,100	1,800	2,000	1,800	1,500
22,000	2,500	2,100	1,800	2,500	2,100	1,800	2,100	1,800	1,500
23,000	2,500	2,200	1,800	2,500	2,200	1,800	2,100	1,800	1,600
24,000	2,500	2,200	1,800	2,500	2,200	1,800	2,100	1,800	1,600
25,000	2,500	2,200	1,900	2,500	2,200	1,900	2,100	1,900	1,600
26,000	2,500	2,200	1,900	2,500	2,200	1,900	2,100	1,900	1,600
27,000	2,600	2,200	1,900	2,600	2,200	1,900	2,100	1,900	1,600
28,000	2,600	2,200	1,900	2,600	2,200	1,900	2,200	1,900	1,600
29,000	2,600	2,300	1,900	2,600	2,300	1,900	2,200	1,900	1,700
30,000	2,600	2,300	1,900	2,600	2,300	1,900	2,200	1,900	1,700
31,000	2,600	2,300	2,000	2,600	2,300	2,000	2,200	2,000	1,700
32,000	2,600	2,300	2,000	2,600	2,300	2,000	2,200	2,000	1,700
33,000	2,700	2,300	2,000	2,700	2,300	2,000	2,200	2,000	1,700
34,000	2,700	2,300	2,000	2,700	2,300	2,000	2,300	2,000	1,700
35,000	2,700	2,400	2,000	2,700	2,400	2,000	2,300	2,000	1,800
36,000	2,700	2,400	2,000	2,700	2,400	2,000	2,300	2,000	1,800
37,000	2,700	2,400	2,100	2,700	2,400	2,100	2,300	2,100	1,800
38,000	2,700	2,400	2,100	2,700	2,400	2,100	2,300	2,100	1,800
39,000	2,800	2,400	2,100	2,800	2,400	2,100	2,400	2,100	1,800
40,000	2,800	2,400	2,100	2,800	2,400	2,100	2,400	2,100	1,900

Figure 5.4a(3).

NOTES: Initial effects only. Fallout governs.

The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

Troop Safety Distances—Meters
Large Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
8,000	4,200	3,400	3,100	2,800	2,000	1,700	1,900	1,700	1,400
9,000	4,200	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
10,000	4,200	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
11,000	4,300	3,400	3,200	2,900	2,100	1,800	2,000	1,700	1,400
12,000	4,300	3,500	3,200	2,900	2,100	1,800	2,100	1,700	1,500
13,000	4,300	3,500	3,200	2,900	2,100	1,800	2,100	1,700	1,500
14,000	4,300	3,500	3,200	2,900	2,100	1,800	2,200	1,700	1,500
15,000	4,300	3,500	3,300	3,000	2,100	1,800	2,200	1,700	1,500
16,000	4,300	3,500	3,300	3,000	2,100	1,800	2,300	1,700	1,500
17,000	4,400	3,500	3,300	3,000	2,200	1,900	2,300	1,800	1,500
18,000	4,400	3,600	3,300	3,000	2,200	1,900	2,400	1,800	1,600
19,000	4,400	3,600	3,300	3,000	2,200	1,900	2,500	1,800	1,600
20,000	4,400	3,600	3,300	3,000	2,200	1,900	2,500	1,800	1,600
21,000	4,400	3,600	3,400	3,100	2,200	1,900	2,600	1,900	1,600
22,000	4,500	3,600	3,400	3,100	2,200	1,900	2,600	1,900	1,600
23,000	4,500	3,600	3,400	3,100	2,300	2,000	2,600	1,900	1,600
24,000	4,500	3,700	3,400	3,100	2,300	2,000	2,700	1,900	1,600
25,000	4,500	3,700	3,400	3,100	2,300	2,000	2,700	2,000	1,700
26,000	4,500	3,700	3,400	3,100	2,300	2,000	2,700	2,000	1,700
27,000	4,500	3,700	3,500	3,200	2,300	2,000	2,700	2,000	1,700
28,000	4,600	3,700	3,500	3,200	2,300	2,000	2,800	2,000	1,700
29,000	4,600	3,700	3,500	3,200	2,400	2,000	2,800	2,000	1,700
30,000	4,600	3,800	3,500	3,200	2,400	2,100	2,800	2,100	1,700
31,000	4,600	3,800	3,500	3,200	2,400	2,100	2,800	2,100	1,800
32,000	4,600	3,800	3,500	3,200	2,400	2,100	2,800	2,100	1,800
33,000	4,600	3,800	3,600	3,300	2,400	2,100	2,800	2,100	1,800
34,000	4,700	3,800	3,600	3,300	2,400	2,100	2,900	2,100	1,800
35,000	4,700	3,800	3,600	3,300	2,500	2,100	2,900	2,100	1,800
36,000	4,700	3,900	3,600	3,300	2,500	2,200	2,900	2,200	1,800
37,000	4,700	3,900	3,600	3,300	2,500	2,200	2,900	2,200	1,900
38,000	4,700	3,900	3,600	3,300	2,500	2,200	2,900	2,200	1,900
39,000	4,700	3,900	3,700	3,400	2,500	2,200	2,900	2,200	1,900
40,000	4,800	3,900	3,700	3,400	2,500	2,200	3,000	2,200	1,900

Figure 5.4b(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	4,200	3,400	3,100	2,800	2,000	1,700	2,000	1,600	1,300
8,000	4,200	3,400	3,100	2,800	2,000	1,700	2,100	1,600	1,300
9,000	4,200	3,400	3,100	2,800	2,000	1,700	2,100	1,600	1,300
10,000	4,200	3,400	3,200	2,900	2,000	1,700	2,200	1,600	1,300
11,000	4,300	3,400	3,200	2,900	2,000	1,700	2,200	1,600	1,300
12,000	4,300	3,400	3,200	2,900	2,100	1,700	2,300	1,600	1,300
13,000	4,300	3,500	3,200	2,900	2,100	1,800	2,400	1,700	1,400
14,000	4,300	3,500	3,200	2,900	2,100	1,800	2,400	1,700	1,500
15,000	4,300	3,500	3,200	2,900	2,100	1,800	2,500	1,800	1,500
16,000	4,300	3,500	3,300	3,000	2,100	1,800	2,500	1,800	1,500
17,000	4,400	3,500	3,300	3,000	2,100	1,800	2,500	1,800	1,500
18,000	4,400	3,500	3,300	3,000	2,100	1,800	2,600	1,800	1,500
19,000	4,400	3,600	3,300	3,000	2,200	1,900	2,600	1,900	1,500
20,000	4,400	3,600	3,300	3,000	2,200	1,900	2,600	1,900	1,500
21,000	4,400	3,600	3,300	3,000	2,200	1,900	2,600	1,900	1,600
22,000	4,400	3,600	3,400	3,100	2,200	1,900	2,700	1,900	1,600
23,000	4,500	3,600	3,400	3,100	2,200	1,900	2,700	1,900	1,600
24,000	4,500	3,600	3,400	3,100	2,200	1,900	2,700	1,900	1,600
25,000	4,500	3,700	3,400	3,100	2,300	1,900	2,700	2,000	1,600
26,000	4,500	3,700	3,400	3,100	2,300	2,000	2,700	2,000	1,600
27,000	4,500	3,700	3,400	3,100	2,300	2,000	2,700	2,000	1,600
28,000	4,500	3,700	3,500	3,200	2,300	2,000	2,800	2,000	1,700
29,000	4,600	3,700	3,500	3,200	2,300	2,000	2,800	2,000	1,700
30,000	4,600	3,700	3,500	3,200	2,300	2,000	2,800	2,100	1,700
31,000	4,600	3,800	3,500	3,200	2,300	2,000	2,800	2,100	1,700
32,000	4,600	3,800	3,500	3,200	2,400	2,100	2,800	2,100	1,700
33,000	4,600	3,800	3,500	3,200	2,400	2,100	2,800	2,100	1,700
34,000	4,700	3,800	3,600	3,300	2,400	2,100	2,900	2,100	1,800
35,000	4,700	3,800	3,600	3,300	2,500	2,100	2,900	2,100	1,800
36,000	4,700	3,900	3,600	3,300	2,500	2,200	2,900	2,200	1,800
37,000	4,700	3,900	3,600	3,300	2,500	2,200	2,900	2,200	1,900
38,000	4,700	3,900	3,600	3,300	2,500	2,200	2,900	2,200	1,900
39,000	4,700	3,900	3,700	3,400	2,500	2,200	2,900	2,200	1,900
40,000	4,800	3,900	3,700	3,400	2,500	2,200	3,000	2,200	1,900

Figure 5.4b(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

LFR 1

[1] Large Free Rocket.

Troop Safety Distances—Meters
Large Free Rocket

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
7,000	2,700	2,000	1,800	2,400	2,000	1,700	1,900	1,700	1,400
8,000	2,700	2,100	1,800	2,400	2,000	1,700	1,900	1,700	1,400
9,000	2,800	2,100	1,800	2,400	2,000	1,700	2,000	1,700	1,400
10,000	2,800	2,100	1,800	2,400	2,000	1,700	2,000	1,700	1,400
11,000	2,800	2,100	1,800	2,400	2,100	1,800	2,000	1,700	1,400
12,000	2,800	2,100	1,900	2,400	2,100	1,800	2,000	1,800	1,500
13,000	2,800	2,200	1,900	2,500	2,100	1,800	2,000	1,800	1,500
14,000	2,900	2,200	1,900	2,500	2,100	1,800	2,000	1,800	1,500
15,000	2,900	2,200	1,900	2,500	2,100	1,800	2,100	1,800	1,500
16,000	2,900	2,200	1,900	2,500	2,100	1,800	2,100	1,800	1,500
17,000	2,900	2,200	1,900	2,500	2,200	1,900	2,100	1,800	1,600
18,000	2,900	2,200	2,000	2,500	2,200	1,900	2,100	1,900	1,600
19,000	2,900	2,300	2,000	2,600	2,200	1,900	2,100	1,900	1,600
20,000	3,000	2,300	2,000	2,600	2,200	1,900	2,200	1,900	1,600
21,000	3,000	2,300	2,000	2,600	2,200	1,900	2,200	1,900	1,600
22,000	3,000	2,300	2,000	2,600	2,300	2,000	2,200	1,900	1,600
23,000	3,000	2,300	2,100	2,600	2,300	2,000	2,200	2,000	1,700
24,000	3,000	2,300	2,100	2,700	2,300	2,000	2,200	2,000	1,700
25,000	3,000	2,400	2,100	2,700	2,300	2,000	2,200	2,000	1,700
26,000	3,100	2,400	2,100	2,700	2,300	2,000	2,300	2,000	1,700
27,000	3,100	2,400	2,100	2,700	2,300	2,000	2,300	2,000	1,700
28,000	3,100	2,400	2,100	2,700	2,400	2,100	2,300	2,000	1,700
29,000	3,100	2,400	2,200	2,700	2,400	2,100	2,300	2,100	1,800
30,000	3,100	2,400	2,200	2,800	2,400	2,100	2,300	2,100	1,800
31,000	3,200	2,500	2,200	2,800	2,400	2,100	2,300	2,100	1,800
32,000	3,200	2,500	2,200	2,800	2,400	2,100	2,300	2,100	1,800
33,000	3,200	2,500	2,200	2,800	2,400	2,100	2,400	2,100	1,800
34,000	3,200	2,500	2,200	2,800	2,500	2,200	2,400	2,100	1,800
35,000	3,200	2,500	2,300	2,800	2,500	2,200	2,400	2,200	1,900
36,000	3,200	2,600	2,300	2,900	2,500	2,200	2,400	2,200	1,900
37,000	3,300	2,600	2,300	2,900	2,500	2,200	2,500	2,200	1,900
38,000	3,300	2,600	2,300	2,900	2,500	2,200	2,500	2,200	1,900
39,000	3,300	2,600	2,300	2,900	2,600	2,300	2,500	2,200	1,900
40,000	3,300	2,600	2,300	2,900	2,600	2,300	2,500	2,200	2,000

Figure 5.4b(3).

NOTES: Initial effects only. Fallout governs.

The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

Troop Safety Distances—Meters
Large Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
7,000	6,000	4,200	3,700	3,700	2,500	2,000	2,100	1,800	1,500
8,000	6,000	4,200	3,700	3,700	2,500	2,000	2,200	1,800	1,500
9,000	6,100	4,200	3,700	3,800	2,500	2,000	2,200	1,800	1,500
10,000	6,100	4,200	3,700	3,800	2,500	2,000	2,300	1,800	1,500
11,000	6,100	4,300	3,700	3,800	2,500	2,100	2,300	1,800	1,600
12,000	6,100	4,300	3,700	3,800	2,500	2,100	2,400	1,900	1,600
13,000	6,100	4,300	3,800	3,800	2,600	2,100	2,400	1,900	1,600
14,000	6,100	4,300	3,800	3,900	2,600	2,100	2,500	1,900	1,600
15,000	6,200	4,300	3,800	3,900	2,600	2,100	2,600	1,900	1,600
16,000	6,200	4,300	3,800	3,900	2,600	2,100	2,600	2,000	1,600
17,000	6,200	4,400	3,800	3,900	2,600	2,200	2,700	2,000	1,700
18,000	6,200	4,400	3,900	3,900	2,600	2,200	2,800	2,000	1,700
19,000	6,200	4,400	3,900	3,900	2,700	2,200	2,800	2,100	1,700
20,000	6,200	4,400	3,900	4,000	2,700	2,200	2,900	2,100	1,700
21,000	6,300	4,400	3,900	4,000	2,700	2,200	2,900	2,200	1,700
22,000	6,300	4,500	3,900	4,000	2,700	2,200	3,000	2,200	1,700
23,000	6,300	4,500	3,900	4,000	2,700	2,300	3,000	2,200	1,800
24,000	6,300	4,500	4,000	4,000	2,700	2,300	3,100	2,200	1,800
25,000	6,300	4,500	4,000	4,000	2,800	2,300	3,100	2,300	1,800
26,000	6,300	4,500	4,000	4,100	2,800	2,300	3,200	2,300	1,800
27,000	6,400	4,500	4,000	4,100	2,800	2,300	3,200	2,300	1,800
28,000	6,400	4,600	4,000	4,100	2,800	2,300	3,300	2,400	1,800
29,000	6,400	4,600	4,000	4,100	2,800	2,400	3,300	2,400	1,800
30,000	6,400	4,600	4,100	4,100	2,800	2,400	3,300	2,500	1,900
31,000	6,400	4,600	4,100	4,100	2,900	2,400	3,300	2,500	1,900
32,000	6,400	4,600	4,100	4,200	2,900	2,400	3,400	2,500	1,900
33,000	6,500	4,600	4,100	4,200	2,900	2,400	3,400	2,500	1,900
34,000	6,500	4,700	4,100	4,200	2,900	2,400	3,400	2,500	1,900
35,000	6,500	4,700	4,100	4,200	2,900	2,500	3,400	2,500	1,900
36,000	6,500	4,700	4,200	4,200	2,900	2,500	3,400	2,600	2,000
37,000	6,500	4,700	4,200	4,200	3,000	2,500	3,500	2,600	2,000
38,000	6,600	4,700	4,200	4,300	3,000	2,500	3,500	2,600	2,000
39,000	6,600	4,700	4,200	4,300	3,000	2,500	3,500	2,600	2,000
40,000	6,600	4,800	4,200	4,300	3,000	2,500	3,500	2,600	2,000

Figure 5.4c(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
7,000	5,900	4,100	3,600	3,700	2,400	1,900	2,100	1,700	1,400
8,000	6,000	4,100	3,600	3,700	2,400	1,900	2,200	1,700	1,400
9,000	6,000	4,200	3,600	3,700	2,400	1,900	2,200	1,700	1,400
10,000	6,000	4,200	3,600	3,700	2,400	2,000	2,300	1,700	1,500
11,000	6,000	4,200	3,700	3,700	2,400	2,000	2,300	1,800	1,500
12,000	6,000	4,200	3,700	3,700	2,500	2,000	2,400	1,800	1,500
13,000	6,000	4,200	3,700	3,800	2,500	2,000	2,400	1,800	1,500
14,000	6,100	4,200	3,700	3,800	2,500	2,000	2,500	1,800	1,500
15,000	6,100	4,300	3,700	3,800	2,500	2,000	2,600	1,900	1,500
16,000	6,100	4,300	3,700	3,800	2,500	2,100	2,600	1,900	1,500
17,000	6,100	4,300	3,800	3,800	2,500	2,100	2,700	2,000	1,600
18,000	6,100	4,300	3,800	3,800	2,600	2,100	2,700	2,000	1,600
19,000	6,200	4,300	3,800	3,900	2,600	2,100	2,800	2,000	1,600
20,000	6,200	4,300	3,800	3,900	2,600	2,100	2,900	2,100	1,600
21,000	6,200	4,400	3,800	3,900	2,600	2,100	2,900	2,100	1,600
22,000	6,200	4,400	3,800	3,900	2,600	2,200	3,000	2,100	1,600
23,000	6,200	4,400	3,900	3,900	2,600	2,200	3,000	2,100	1,700
24,000	6,200	4,400	3,900	3,900	2,700	2,200	3,100	2,200	1,700
25,000	6,300	4,400	3,900	4,000	2,700	2,200	3,100	2,200	1,700
26,000	6,300	4,400	3,900	4,000	2,700	2,200	3,100	2,300	1,700
27,000	6,300	4,500	3,900	4,000	2,700	2,200	3,200	2,300	1,700
28,000	6,300	4,500	3,900	4,000	2,700	2,300	3,200	2,400	1,700
29,000	6,300	4,500	4,000	4,000	2,700	2,300	3,200	2,400	1,700
30,000	6,300	4,500	4,000	4,000	2,800	2,300	3,300	2,400	1,800
31,000	6,400	4,500	4,000	4,100	2,800	2,300	3,300	2,400	1,800
32,000	6,400	4,500	4,000	4,100	2,800	2,300	3,300	2,400	1,800
33,000	6,400	4,600	4,000	4,100	2,800	2,300	3,300	2,400	1,800
34,000	6,500	4,600	4,100	4,200	2,900	2,400	3,400	2,500	1,900
35,000	6,500	4,600	4,100	4,200	2,900	2,400	3,400	2,500	1,900
36,000	6,500	4,700	4,100	4,200	2,900	2,400	3,400	2,500	1,900
37,000	6,500	4,700	4,100	4,200	2,900	2,400	3,500	2,600	1,900
38,000	6,500	4,700	4,200	4,200	2,900	2,400	3,500	2,600	1,900
39,000	6,600	4,700	4,200	4,200	2,900	2,500	3,500	2,600	1,900
40,000	6,600	4,700	4,200	4,300	3,000	2,500	3,500	2,600	1,900

Figure 5.4c(2)

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

LFR 1

[1]Large Free Rocket.

Troop Safety Distances—Meters
Large Free Rocket

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	3,600	2,600	2,200	2,400	2,200	1,800	2,000	1,800	1,500
8,000	3,600	2,700	2,200	2,500	2,200	1,800	2,100	1,800	1,500
9,000	3,600	2,700	2,300	2,500	2,200	1,800	2,100	1,800	1,500
10,000	3,600	2,700	2,300	2,500	2,200	1,800	2,100	1,800	1,600
11,000	3,600	2,700	2,300	2,500	2,200	1,900	2,100	1,900	1,600
12,000	3,600	2,700	2,300	2,500	2,200	1,900	2,100	1,900	1,600
13,000	3,700	2,700	2,300	2,600	2,300	1,900	2,100	1,900	1,600
14,000	3,700	2,800	2,400	2,600	2,300	1,900	2,200	1,900	1,600
15,000	3,700	2,800	2,400	2,600	2,300	1,900	2,200	1,900	1,600
16,000	3,700	2,800	2,400	2,600	2,300	2,000	2,200	1,900	1,700
17,000	3,700	2,800	2,400	2,600	2,300	2,000	2,200	2,000	1,700
18,000	3,700	2,800	2,400	2,600	2,300	2,000	2,200	2,000	1,700
19,000	3,800	2,900	2,400	2,700	2,400	2,000	2,200	2,000	1,700
20,000	3,800	2,900	2,500	2,700	2,400	2,000	2,300	2,000	1,700
21,000	3,800	2,900	2,500	2,700	2,400	2,000	2,300	2,000	1,700
22,000	3,800	2,900	2,500	2,700	2,400	2,100	2,300	2,000	1,800
23,000	3,800	2,900	2,500	2,700	2,400	2,100	2,300	2,100	1,800
24,000	3,900	2,900	2,500	2,700	2,500	2,100	2,300	2,100	1,800
25,000	3,900	3,000	2,500	2,800	2,500	2,100	2,400	2,100	1,800
26,000	3,900	3,000	2,600	2,800	2,500	2,100	2,400	2,100	1,800
27,000	3,900	3,000	2,600	2,800	2,500	2,100	2,400	2,100	1,900
28,000	3,900	3,000	2,600	2,800	2,500	2,200	2,400	2,100	1,900
29,000	3,900	3,000	2,600	2,800	2,500	2,200	2,400	2,200	1,900
30,000	4,000	3,000	2,600	2,800	2,600	2,200	2,400	2,200	1,900
31,000	4,000	3,100	2,700	2,900	2,600	2,200	2,500	2,200	1,900
32,000	4,000	3,100	2,700	2,900	2,600	2,200	2,500	2,200	1,900
33,000	4,000	3,100	2,700	2,900	2,600	2,300	2,500	2,200	2,000
34,000	4,000	3,100	2,700	2,900	2,600	2,300	2,500	2,300	2,000
35,000	4,000	3,100	2,700	2,900	2,600	2,300	2,500	2,300	2,000
36,000	4,100	3,100	2,700	3,000	2,700	2,300	2,500	2,300	2,000
37,000	4,100	3,200	2,800	3,000	2,700	2,300	2,600	2,300	2,000
38,000	4,100	3,200	2,800	3,000	2,700	2,300	2,600	2,300	2,000
39,000	4,100	3,200	2,800	3,000	2,700	2,400	2,600	2,300	2,100
40,000	4,100	3,200	2,800	3,000	2,700	2,400	2,600	2,400	2,100

Figure 5.4c(3).

NOTES: Initial effects only. Fallout governs.

The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See fig 5.5 for special friendly troop orientations.

Troop Safety Distances—Meters
Large Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
7,000	8,900	6,800	5,900	5,600	3,500	2,900	2,700	2,100	1,700
8,000	8,900	6,800	5,900	5,600	3,600	2,900	2,800	2,100	1,700
9,000	8,900	6,800	6,000	5,600	3,600	2,900	2,800	2,100	1,700
10,000	8,900	6,800	6,000	5,600	3,600	2,900	2,900	2,200	1,700
11,000	8,900	6,800	6,000	5,600	3,600	2,900	2,900	2,200	1,700
12,000	8,900	6,800	6,000	5,600	3,600	2,900	3,000	2,200	1,800
13,000	9,000	6,900	6,000	5,700	3,700	3,000	3,000	2,300	1,800
14,000	9,000	6,900	6,000	5,700	3,700	3,000	3,100	2,300	1,800
15,000	9,000	6,900	6,100	5,700	3,700	3,000	3,200	2,300	1,800
16,000	9,000	6,900	6,100	5,700	3,700	3,000	3,200	2,400	1,800
17,000	9,000	6,900	6,100	5,700	3,700	3,000	3,300	2,400	1,800
18,000	9,000	6,900	6,100	5,800	3,700	3,100	3,300	2,500	1,900
19,000	9,100	7,000	6,100	5,800	3,800	3,100	3,400	2,500	1,900
20,000	9,100	7,000	6,200	5,800	3,800	3,100	3,400	2,500	1,900
21,000	9,100	7,000	6,200	5,800	3,800	3,100	3,500	2,600	1,900
22,000	9,100	7,000	6,200	5,800	3,800	3,100	3,600	2,600	1,900
23,000	9,100	7,000	6,200	5,800	3,800	3,100	3,600	2,700	1,900
24,000	9,100	7,000	6,200	5,900	3,800	3,200	3,700	2,700	1,900
25,000	9,200	7,100	6,200	5,900	3,900	3,200	3,700	2,800	1,900
26,000	9,200	7,100	6,300	5,900	3,900	3,200	3,800	2,800	2,000
27,000	9,200	7,100	6,300	5,900	3,900	3,200	3,900	2,900	2,000
28,000	9,200	7,100	6,300	5,900	3,900	3,200	3,900	2,900	2,000
29,000	9,200	7,100	6,300	5,900	3,900	3,200	4,000	2,900	2,000
30,000	9,300	7,100	6,300	6,000	3,900	3,300	4,000	3,000	2,100
31,000	9,300	7,200	6,300	6,000	4,000	3,300	4,100	3,000	2,100
32,000	9,300	7,200	6,400	6,000	4,000	3,300	4,100	3,100	2,100
33,000	9,300	7,200	6,400	6,000	4,000	3,300	4,200	3,100	2,100
34,000	9,300	7,200	6,400	6,000	4,000	3,300	4,200	3,100	2,100
35,000	9,300	7,200	6,400	6,000	4,000	3,300	4,300	3,200	2,100
36,000	9,400	7,300	6,400	6,100	4,000	3,300	4,300	3,200	2,200
37,000	9,400	7,300	6,400	6,100	4,100	3,400	4,400	3,200	2,200
38,000	9,400	7,300	6,500	6,100	4,100	3,400	4,400	3,200	2,200
39,000	9,400	7,300	6,500	6,100	4,100	3,400	4,400	3,200	2,200
40,000	9,400	7,300	6,500	6,100	4,100	3,400	4,500	3,200	2,200

Figure 5.4d(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk	NEC Risk	MOD Risk	EMERG Risk
7,000	8,800	6,700	5,900	5,500	3,500	2,800	3,100	2,200	1,600
8,000	8,900	6,800	5,900	5,600	3,500	2,900	3,200	2,300	1,600
9,000	8,900	6,800	5,900	5,600	3,600	2,900	3,200	2,300	1,500
10,000	8,900	6,800	6,000	5,600	3,600	2,900	3,300	2,400	1,500
11,000	8,900	6,800	6,000	5,600	3,600	2,900	3,300	2,400	1,600
12,000	8,900	6,800	6,000	5,600	3,600	2,900	3,400	2,500	1,700
13,000	8,900	6,800	6,000	5,600	3,600	2,900	3,500	2,500	1,700
14,000	9,000	6,900	6,000	5,700	3,600	2,900	3,500	2,600	1,700
15,000	9,000	6,900	6,000	5,700	3,700	3,000	3,600	2,600	1,800
16,000	9,000	6,900	6,100	5,700	3,700	3,000	3,600	2,600	1,800
17,000	9,000	6,900	6,100	5,700	3,700	3,000	3,700	2,700	1,800
18,000	9,000	6,900	6,100	5,700	3,700	3,000	3,800	2,700	1,800
19,000	9,000	6,900	6,100	5,700	3,700	3,000	3,800	2,800	1,900
20,000	9,100	7,000	6,100	5,800	3,700	3,000	3,900	2,800	1,900
21,000	9,100	7,000	6,100	5,800	3,800	3,100	3,900	2,900	1,900
22,000	9,100	7,000	6,200	5,800	3,800	3,100	4,000	2,900	1,900
23,000	9,100	7,000	6,200	5,800	3,800	3,100	4,000	2,900	1,900
24,000	9,100	7,000	6,200	5,800	3,800	3,100	4,100	3,000	2,000
25,000	9,200	7,000	6,200	5,800	3,800	3,100	4,100	3,000	2,000
26,000	9,200	7,100	6,200	5,900	3,800	3,100	4,200	3,000	2,000
27,000	9,200	7,100	6,200	5,900	3,900	3,200	4,200	3,100	2,000
28,000	9,200	7,100	6,300	5,900	3,900	3,200	4,200	3,100	2,000
29,000	9,200	7,100	6,300	5,900	3,900	3,200	4,300	3,100	2,000
30,000	9,200	7,100	6,300	5,900	3,900	3,200	4,300	3,000	2,100
31,000	9,300	7,100	6,300	5,900	3,900	3,200	4,300	3,000	2,100
32,000	9,300	7,200	6,300	6,000	3,900	3,200	4,300	3,000	2,100
33,000	9,300	7,200	6,300	6,000	3,900	3,200	4,400	3,000	2,100
34,000	9,300	7,200	6,400	6,000	4,000	3,300	4,400	3,100	2,100
35,000	9,300	7,200	6,400	6,000	4,000	3,300	4,400	3,100	2,100
36,000	9,300	7,200	6,400	6,000	4,000	3,300	4,400	3,100	2,200
37,000	9,400	7,200	6,400	6,000	4,000	3,300	4,400	3,100	2,200
38,000	9,400	7,300	6,400	6,100	4,000	3,300	4,500	3,100	2,200
39,000	9,400	7,300	6,400	6,100	4,000	3,300	4,500	3,200	2,200
40,000	9,400	7,300	6,500	6,100	4,100	3,400	4,500	3,200	2,200

Figure 5.4d(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientation.

LFR 1

[1]Large Free Rocket.

Troop Safety Distances—Meters
Large Free Rocket

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	5,000	3,900	3,400	3,300	2,400	2,000	2,500	2,000	1,700
8,000	5,000	3,900	3,400	3,300	2,400	2,100	2,500	2,000	1,700
9,000	5,100	4,000	3,500	3,300	2,500	2,100	2,500	2,000	1,700
10,000	5,100	4,000	3,500	3,300	2,500	2,100	2,500	2,000	1,700
11,000	5,100	4,000	3,500	3,400	2,500	2,100	2,500	2,000	1,800
12,000	5,100	4,000	3,500	3,400	2,500	2,100	2,600	2,100	1,800
13,000	5,100	4,000	3,500	3,400	2,500	2,200	2,600	2,100	1,800
14,000	5,100	4,000	3,500	3,400	2,500	2,200	2,600	2,100	1,800
15,000	5,200	4,100	3,600	3,400	2,600	2,200	2,600	2,100	1,800
16,000	5,200	4,100	3,600	3,400	2,600	2,200	2,600	2,100	1,800
17,000	5,200	4,100	3,600	3,500	2,600	2,200	2,700	2,100	1,900
18,000	5,200	4,100	3,600	3,500	2,600	2,200	2,700	2,200	1,900
19,000	5,200	4,100	3,600	3,500	2,600	2,300	2,700	2,200	1,900
20,000	5,200	4,100	3,600	3,500	2,600	2,300	2,700	2,200	1,900
21,000	5,300	4,200	3,700	3,500	2,700	2,300	2,700	2,200	1,900
22,000	5,300	4,200	3,700	3,500	2,700	2,300	2,700	2,200	1,900
23,000	5,300	4,200	3,700	3,600	2,700	2,300	2,800	2,300	2,000
24,000	5,300	4,200	3,700	3,600	2,700	2,300	2,800	2,300	2,000
25,000	5,300	4,200	3,700	3,600	2,700	2,400	2,800	2,300	2,000
26,000	5,300	4,300	3,700	3,600	2,800	2,400	2,800	2,300	2,000
27,000	5,400	4,300	3,800	3,600	2,800	2,400	2,800	2,300	2,000
28,000	5,400	4,300	3,800	3,600	2,800	2,400	2,800	2,300	2,000
29,000	5,400	4,300	3,800	3,700	2,800	2,400	2,900	2,400	2,100
30,000	5,400	4,300	3,800	3,700	2,800	2,400	2,900	2,400	2,100
31,000	5,400	4,300	3,800	3,700	2,800	2,500	2,900	2,400	2,100
32,000	5,500	4,400	3,900	3,700	2,900	2,500	2,900	2,400	2,100
33,000	5,500	4,400	3,900	3,700	2,900	2,500	2,900	2,400	2,100
34,000	5,500	4,400	3,900	3,800	2,900	2,500	2,900	2,400	2,200
35,000	5,500	4,400	3,900	3,800	2,900	2,500	3,000	2,500	2,200
36,000	5,500	4,400	3,900	3,800	2,900	2,600	3,000	2,500	2,200
37,000	5,500	4,400	3,900	3,800	2,900	2,600	3,000	2,500	2,200
38,000	5,600	4,500	4,000	3,800	3,000	2,600	3,000	2,500	2,200
39,000	5,600	4,500	4,000	3,800	3,000	2,600	3,000	2,500	2,200
40,000	5,600	4,500	4,000	3,900	3,000	2,600	3,100	2,500	2,300

Figure 5.4d(3).

NOTE: Initial effects only. Fallout governs.

The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

Troop Safety Distances—Meters
Large Free Rocket

LOW Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	11,300	9,000	7,700	7,200	4,700	3,800	3,400	2,500	1,800
8,000	11,600	9,200	7,900	7,400	4,800	3,800	3,400	2,500	1,800
9,000	11,600	9,200	7,900	7,400	4,900	3,900	3,500	2,600	1,800
10,000	11,600	9,200	7,900	7,400	4,900	3,900	3,500	2,600	1,900
11,000	11,600	9,200	7,900	7,500	4,900	3,900	3,600	2,600	1,900
12,000	11,700	9,300	8,000	7,500	4,900	3,900	3,600	2,700	1,900
13,000	11,700	9,300	8,000	7,500	4,900	3,900	3,600	2,700	1,900
14,000	11,700	9,300	8,000	7,500	4,900	3,900	3,700	2,700	1,900
15,000	11,700	9,300	8,000	7,500	5,000	4,000	3,800	2,800	1,900
16,000	11,700	9,300	8,000	7,500	5,000	4,000	3,800	2,900	2,000
17,000	11,700	9,300	8,000	7,600	5,000	4,000	3,900	2,900	2,000
18,000	11,800	9,400	8,100	7,600	5,000	4,000	3,900	2,900	2,000
19,000	11,800	9,400	8,100	7,600	5,000	4,000	4,000	2,900	2,000
20,000	11,800	9,400	8,100	7,600	5,100	4,000	4,000	3,000	2,000
21,000	11,800	9,400	8,100	7,600	5,100	4,100	4,100	3,000	2,000
22,000	11,800	9,400	8,100	7,700	5,100	4,100	4,100	3,100	2,000
23,000	11,800	9,400	8,100	7,700	5,100	4,100	4,200	3,100	2,100
24,000	11,900	9,500	8,200	7,700	5,100	4,100	4,300	3,100	2,100
25,000	11,900	9,500	8,200	7,700	5,100	4,100	4,300	3,200	2,200
26,000	11,900	9,500	8,200	7,700	5,200	4,100	4,400	3,200	2,200
27,000	11,900	9,500	8,200	7,700	5,200	4,200	4,400	3,300	2,300
28,000	11,900	9,500	8,200	7,800	5,200	4,200	4,500	3,300	2,300
29,000	12,000	9,500	8,200	7,800	5,200	4,200	4,600	3,300	2,300
30,000	12,000	9,600	8,300	7,800	5,200	4,200	4,600	3,400	2,400
31,000	12,000	9,600	8,300	7,800	5,200	4,200	4,700	3,400	2,400
32,000	12,000	9,600	8,300	7,800	5,300	4,200	4,700	3,500	2,400
33,000	12,000	9,600	8,300	7,800	5,300	4,300	4,800	3,500	2,500
34,000	12,000	9,600	8,300	7,900	5,300	4,300	4,900	3,600	2,500
35,000	12,100	9,700	8,400	7,900	5,300	4,300	4,900	3,600	2,500
36,000	12,100	9,700	8,400	7,900	5,300	4,300	5,000	3,700	2,600
37,000	12,100	9,700	8,400	7,900	5,300	4,300	5,000	3,700	2,600
38,000	12,100	9,700	8,400	7,900	5,400	4,300	5,100	3,800	2,600
39,000	12,100	9,700	8,400	7,900	5,400	4,400	5,100	3,900	2,600
40,000	12,100	9,700	8,400	8,000	5,400	4,400	5,200	4,000	2,600

Figure 5.4e(1).

HIGH Airburst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	11,600	9,200	7,900	7,400	4,800	3,800	3,800	2,700	1,700
8,000	11,600	9,200	7,900	7,400	4,800	3,800	3,800	2,800	1,800
9,000	11,600	9,200	7,900	7,400	4,800	3,800	3,900	2,800	1,800
10,000	11,600	9,200	7,900	7,400	4,900	3,800	4,000	2,900	1,900
11,000	11,600	9,200	7,900	7,400	4,900	3,900	4,000	2,900	1,900
12,000	11,600	9,200	7,900	7,500	4,900	3,900	4,100	2,900	2,000
13,000	11,700	9,300	8,000	7,500	4,900	3,900	4,100	3,000	2,000
14,000	11,700	9,300	8,000	7,500	4,900	3,900	4,200	3,000	2,000
15,000	11,700	9,300	8,000	7,500	4,900	3,900	4,300	3,100	2,100
16,000	11,700	9,300	8,000	7,500	5,000	3,900	4,300	3,100	2,100
17,000	11,700	9,300	8,000	7,500	5,000	4,000	4,400	3,200	2,200
18,000	11,700	9,300	8,000	7,600	5,000	4,000	4,500	3,200	2,200
19,000	11,800	9,400	8,100	7,600	5,000	4,000	4,500	3,300	2,200
20,000	11,800	9,400	8,100	7,600	5,000	4,000	4,600	3,300	2,200
21,000	11,800	9,400	8,100	7,600	5,000	4,000	4,600	3,300	2,300
22,000	11,800	9,400	8,100	7,600	5,100	4,000	4,700	3,400	2,300
23,000	11,800	9,400	8,100	7,600	5,100	4,000	4,800	3,400	2,300
24,000	11,800	9,400	8,100	7,700	5,100	4,100	4,800	3,500	2,300
25,000	11,900	9,500	8,200	7,700	5,100	4,100	4,900	3,600	2,400
26,000	11,900	9,500	8,200	7,700	5,100	4,100	4,900	3,700	2,400
27,000	11,900	9,500	8,200	7,700	5,100	4,100	5,000	3,700	2,400
28,000	11,900	9,500	8,200	7,700	5,100	4,100	5,000	3,800	2,400
29,000	11,900	9,500	8,200	7,700	5,200	4,100	5,100	3,800	2,400
30,000	12,000	9,500	8,200	7,800	5,200	4,200	5,100	3,900	2,400
31,000	12,000	9,600	8,300	7,800	5,200	4,200	5,200	3,900	2,500
32,000	12,000	9,600	8,300	7,800	5,200	4,200	5,200	3,900	2,500
33,000	12,000	9,600	8,300	7,800	5,200	4,200	5,200	3,900	2,500
34,000	12,000	9,600	8,300	7,800	5,200	4,200	5,300	3,900	2,500
35,000	12,000	9,600	8,300	7,800	5,300	4,200	5,300	4,000	2,500
36,000	12,100	9,600	8,300	7,900	5,300	4,300	5,300	4,000	2,600
37,000	12,100	9,700	8,400	7,900	5,300	4,300	5,400	4,000	2,600
38,000	12,100	9,700	8,400	7,900	5,300	4,300	5,400	4,000	2,600
39,000	12,100	9,700	8,400	7,900	5,300	4,300	5,400	4,000	2,600
40,000	12,100	9,700	8,400	7,900	5,300	4,300	5,500	4,000	2,600

Figure 5.4e(2).

NOTE: The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

LFR 1

[1]Large Free Rocket.

Troop Safety Distances—Meters
Large Free Rocket

IMPACT Burst

Range	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
(meters)	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk	NEG Risk	MOD Risk	EMERG Risk
7,000	6,600	5,200	4,300	4,300	2,900	2,300	3,100	2,400	1,800
8,000	6,600	5,200	4,300	4,300	2,900	2,300	3,100	2,400	1,800
9,000	6,600	5,200	4,300	4,300	2,900	2,400	3,100	2,400	1,900
10,000	6,600	5,200	4,300	4,300	2,900	2,400	3,100	2,400	1,900
11,000	6,600	5,200	4,400	4,400	2,900	2,400	3,100	2,400	1,900
12,000	6,700	5,300	4,400	4,400	3,000	2,400	3,200	2,500	1,900
13,000	6,700	5,300	4,400	4,400	3,000	2,400	3,200	2,500	1,900
14,000	6,700	5,300	4,400	4,400	3,000	2,400	3,200	2,500	1,900
15,000	6,700	5,300	4,400	4,400	3,000	2,500	3,200	2,500	2,000
16,000	6,700	5,300	4,400	4,400	3,000	2,500	3,200	2,500	2,000
17,000	6,700	5,300	4,500	4,500	3,000	2,500	3,300	2,600	2,000
18,000	6,800	5,400	4,500	4,500	3,100	2,500	3,300	2,600	2,000
19,000	6,800	5,400	4,500	4,500	3,100	2,500	3,300	2,600	2,000
20,000	6,800	5,400	4,500	4,500	3,100	2,500	3,300	2,600	2,100
21,000	6,800	5,400	4,500	4,500	3,100	2,600	3,300	2,600	2,100
22,000	6,800	5,400	4,500	4,500	3,100	2,600	3,300	2,600	2,100
23,000	6,900	5,500	4,600	4,600	3,200	2,600	3,400	2,700	2,100
24,000	6,900	5,500	4,600	4,600	3,200	2,600	3,400	2,700	2,100
25,000	6,900	5,500	4,600	4,600	3,200	2,600	3,400	2,700	2,100
26,000	6,900	5,500	4,600	4,600	3,200	2,700	3,400	2,700	2,200
27,000	6,900	5,500	4,600	4,600	3,200	2,700	3,400	2,700	2,200
28,000	6,900	5,500	4,700	4,700	3,200	2,700	3,400	2,700	2,200
29,000	7,000	5,600	4,700	4,700	3,300	2,700	3,500	2,800	2,200
30,000	7,000	5,600	4,700	4,700	3,300	2,700	3,500	2,800	2,200
31,000	7,000	5,600	4,700	4,700	3,300	2,700	3,500	2,800	2,200
32,000	7,000	5,600	4,700	4,700	3,300	2,800	3,500	2,800	2,300
33,000	7,000	5,600	4,700	4,700	3,300	2,800	3,500	2,800	2,300
34,000	7,000	5,600	4,800	4,800	3,300	2,800	3,500	2,800	2,300
35,000	7,100	5,700	4,800	4,800	3,400	2,800	3,600	2,900	2,300
36,000	7,100	5,700	4,800	4,800	3,400	2,800	3,600	2,900	2,300
37,000	7,100	5,700	4,800	4,800	3,400	2,800	3,600	2,900	2,400
38,000	7,100	5,700	4,800	4,800	3,400	2,900	3,600	2,900	2,400
39,000	7,100	5,700	4,800	4,800	3,400	2,900	3,600	2,900	2,400
40,000	7,100	5,700	4,900	4,900	3,400	2,900	3,700	3,000	2,400

Figure 5.4e(3).

NOTES: Initial effects only. Fallout governs.
The troop safety distances include the radius of safety for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly troop orientation. See figure 5.5 for special friendly troop orientations.

The troop safety distances in figures 5.4c(1) through 5.4e(3) are based on the friendly troop orientation shown in figure 1, below. The elliptical delivery pattern of the large free rocket may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5 below.

Special Troop Safety Orientations

LEGEND
DGZ- Desired ground zero.
R_S – Safety radius
d_b – Buffer distance.
~~~-Friendly troops.
⟵-Direction of fire.

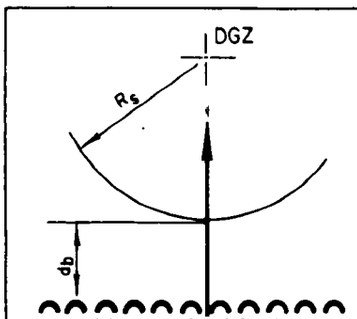

Figure 1. Straight line, perpendicular delivery.

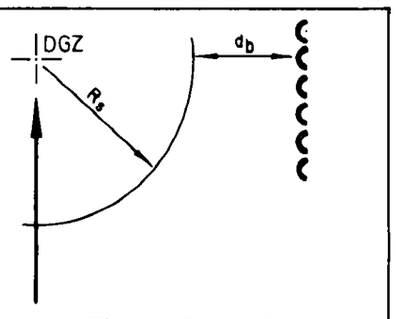

Figure 2. Straight line, parallel delivery.

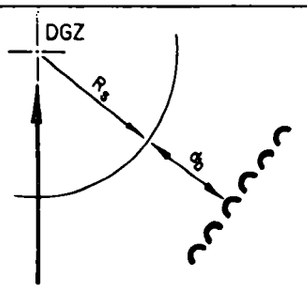

Figure 3. Straight-line, 45° delivery.

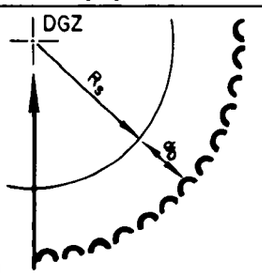

Figure 4. Quarter circle.

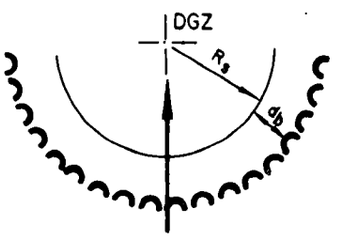

Figure 5. Half circle.

LFR 1

When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figures 5.4c(1) through 5.4e(3) must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

All Height of Burst Options–All Yields									
Range (meters)	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*	*Range (meters)*	*Straight-line parallel delivery (Fig 2)*	*Straight-line 45° delivery (Fig 3)*	*Quarter circle (Fig 4)*	*Half circle (Fig 5)*
7,000	+200	+100	+200	+200	24,000	+400	+300	+500	+500
8,000	+200	+100	+200	+200	25,000	+400	+300	+500	+500
9,000	+200	+100	+200	+200	26,000	+400	+300	+500	+500
10,000	+200	+100	+200	+200	27,000	+500	+300	+500	+500
11,000	+200	+200	+200	+300	28,000	+500	+300	+600	+600
12,000	+200	+200	+300	+300	29,000	+500	+300	+600	+600
13,000	+200	+200	+300	+300.	30,000	+500	+300	+600	+600
14,000	+300	+200	+300	+300	31,000	+500	+300	+600	+600
15,000	+300	+200	+300	+300	32,000	+500	+400	+600	+600
16,000	+300	+200	+300	+300	33,000	+500	+400	+600	+700
17,000	+300	+200	+400	+400	34,000	+600	+400	+700	+700
18,000	+300	+200	+400	+400	35,000	+600	+400	+700	+700
19,000	+300	+200	+400	+400	36,000	+600	+400	+700	+700
20,000	+300	+200	+400	+400	37,000	+600	+400	+700	+700
21,000	+400	+200	+400	+400	38,000	+600	+400	+700	+800
22,000	+400	+300	+400	+500	39,000	+600	+400	+800	+800
23,000	+400	+300	+500	+500	40,000	+600	+400	+800	+800

Figure 5.5.

[1]Large Free Rocket.
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CASUALTY and DAMAGE Tables
Large Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,050		0											3,025	2,150	1,700	1,750	1,350	875	1,225	875	350
1,025		225										0	3,025	2,150	1,700	1,750	1,350	900	1,250	900	425
1,000		325				0						175	3,025	2,150	1,725	1,775	1,375	925	1,275	925	475
975		400				150						275	3,025	2,175	1,750	1,775	1,400	950	1,300	950	525
950		450				250				0		350	3,050	2,175	1,750	1,800	1,400	1,000	1,300	975	575
925		500				350				200		425	3,050	2,200	1,775	1,800	1,425	1,000	1,325	1,000	600
900		550				400				300	0	475	3,050	2,200	1,775	1,825	1,450	1,025	1,350	1,025	650
875		575				450				350	650	650	3,075	2,225	1,800	1,825	1,450	1,050	1,350	1,050	675
850		625				500				400	750	750	3,075	2,225	1,800	1,850	1,475	1,075	1,375	1,075	700
825		650		0		550				450	850	850	3,075	2,225	1,800	1,850	1,500	1,100	1,400	1,075	725
800	0	675		200		575				500	925	925	3,100	2,250	1,825	1,875	1,500	1,100	1,400	1,100	750
775	175	700		275		600				550	975	975	3,100	2,250	1,825	1,875	1,525	1,125	1,425	1,125	800
750	275	725		350	0	650				775	1,050	1,050	3,100	2,275	1,850	1,900	1,525	1,150	1,425	1,150	800
725	325	750		400	175	675			0	600	1,150	1,150	3,100	2,275	1,850	1,900	1,550	1,150	1,550	1,150	825
700	375	775		425	250	700			150	625	1,300	1,300	3,125	2,275	1,875	1,900	1,550	1,175	1,700	1,175	850
675	425	800		475	300	725			225	650	1,500	1,500	3,125	2,275	1,875	1,925	1,550	1,200	1,725	1,175	875
650	450	825		500	350	750		0	300	675	1,600	1,600	3,125	2,300	1,875	1,925	1,575	1,200	1,725	1,200	900
625	500	850	0	525	400	750		175	350	700	1,625	1,625	3,125	2,300	1,900	1,925	1,575	1,225	1,725	1,200	925
600	525	850	150	550	450	775		250	375	725	1,650	1,650	3,125	2,300	1,900	1,950	1,600	1,225	1,725	1,225	925
575	550	875	225	575	475	800		300	425	750	1,650	1,650	3,150	2,300	1,900	1,950	1,600	1,250	1,725	1,225	950
550	575	900	300	600	500	825		350	450	775	1,625	1,625	3,150	2,325	1,900	1,950	1,600	1,250	1,750	1,250	950
525	600	900	325	625	525	825		375	525	775	1,625	1,625	3,150	2,325	1,925	1,950	1,625	1,275	1,725	1,250	975
500	625	925	375	650	550	850		425	825	825	1,600	1,600	3,150	2,325	1,925	1,975	1,625	1,275	1,700	1,275	975
475	650	925	400	675	575	875	0	450	875	875	1,550	1,550	3,150	2,325	1,925	1,975	1,625	1,275	1,675	1,275	1,000
450	650	950	425	700	600	875	100	475	925	925	1,525	1,525	3,150	2,350	1,950	1,975	1,650	1,300	1,650	1,300	1,000
425	675	950	450	700	600	875	175	500	925	925	1,475	1,475	3,175	2,350	1,950	2,000	1,650	1,300	1,625	1,300	1,025
400	700	975	475	725	625	900	225	525	925	925	1,450	1,450	3,175	2,350	1,950	2,000	1,650	1,300	1,600	1,300	1,025
375	700	975	500	725	650	900	275	525	925	925	1,425	1,425	3,175	2,350	1,950	2,000	1,650	1,325	1,575	1,300	1,050
350	725	975	500	750	650	925	300	550	900	900	1,400	1,400	3,175	2,350	1,950	2,000	1,675	1,325	1,575	1,325	1,050
325	725	1,000	525	750	675	925	325	575	875	875	1,375	1,375	3,175	2,350	1,975	2,000	1,675	1,325	1,575	1,325	1,050
300	750	1,000	550	775	675	950	350	575	850	900	1,350	1,350	3,175	2,350	1,975	2,000	1,675	1,350	1,600	1,325	1,075
275	750	1,000	550	775	700	950	375	600	850	900	1,300	1,300	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,325	1,075
250	750	1,025	575	775	700	950	400	600	825	900	1,275	1,275	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,350	1,075
225	775	1,025	575	800	700	950	400	600	800	925	1,250	1,250	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,075
200	775	1,025	600	800	725	975	425	625	800	925	1,225	1,225	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
175	775	1,025	600	800	725	975	425	625	775	925	1,200	1,200	3,200	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
150	775	1,025	600	800	725	975	425	625	750	925	1,175	1,175	3,200	2,375	2,000	2,025	1,700	1,350	1,600	1,350	1,100
125	775	1,050	600	800	725	975	450	650	750	925	1,150	1,150	3,200	2,375	2,000	2,025	1,700	1,375	1,625	1,350	1,100
100	800	1,050	625	825	750	975	450	650	725	950	1,125	1,125	3,150	2,375	1,950	2,025	1,700	1,375	1,625	1,350	1,100
75	800	1,050	625	825	750	975	450	650	700	950	1,125	1,125	2,800	2,200	1,800	2,025	1,700	1,375	1,625	1,350	1,100
50	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,550	2,025	1,650	2,025	1,700	1,375	1,625	1,375	1,100
25	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,275	1,850	1,525	2,025	1,700	1,375	1,625	1,375	1,100
0	800	1,050	625	825	750	975	450	650	725	950	1,050	1,050	2,125	1,700	1,375	2,025	1,700	1,375	1,625	1,375	1,100

HOB_{fs} = 52 m

Low HOB_{min} = 91 m

High HOB_{min} = 206 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 5.6a.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d Degree Burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,050							1,175			2,875			0–5				0–500	
1,025							1,200			2,875			0–5				0–550	
1,000							1,225			2,875			0–10				0–600	
975							1,225			2,900			0–10				0–600	
950							1,250			2,900			0–10				0–650	
925							1,275			2,900			0–10				0–700	
900							1,300			2,900			0–15				0–750	
875							1,300			2,925			0–15				0–750	
850							1,325			2,925			0–20				0–800	
825							1,350			2,925		0	0–20			0	0–800	
800							1,350			2,925		0–5	0–25			0–50	0–850	
775							1,375			2,900		0–5	0–30			0–200	0–850	
750							1,375	0		2,900		0–5	0–35			0–300	0–900	
725							1,400	75		2,900		0–5	0–45			0–350	0–900	
700							1,400	200		2,900		0–5	5–50			0–400	50–950	
675							1,425	275		2,875		0–10	5–65			0–450	200–950	
650							1,425	325		2,875		0–10	5–80			0–500	300–950	
625							1,450	375		2,850		0–10	5–100			0–500	350–1,000	
600							1,450	425		2,850		0–10	5–120			0–550	400–1,000	
575							1,475	450		2,850	0	0–15	10–150		0	0–600	400–1,000	
550							1,475	475		2,825	0–5	0–20	10–190		0–50	0–600	450–1,050	
525							1,475	500		2,825	0–5	0–25	10–250		0–200	0–650	450–1,050	
500				0			1,500	525		2,800	0–5	0–25	15–300		0–250	0–650	500–1,050	
475				50			1,500	550		2,800	0–5	0–40	20–450		0–300	0–650	550–1,050	
450				100			1,500	575		2,775	0–5	5–50	25–570		0–300	50–700	550–1,100	
425				150			1,525	600		2,750	0–10	5–70	30–750		0–350	150–700	600–1,100	
400	0			200		0	1,525	600	0	2,725	0–10	5–90	40–1,000		0–400	200–700	600–1,100	
375	50			250		400	1,525	625	125	2,725	0–15	5–110	50–1,300		0–400	250–750	600–1,100	
350	100			300		425	1,525	650	175	2,700	0–15	10–140	70–1,600		0–400	300–750	650–1,100	
325	150		0	325		425	1,550	650	225	2,675	0–20	10–165	80–1,980		0–400	350–750	650–1,100	
300	250	0	50	350		425	1,550	675	250	2,650	0–25	10–200	100–2,340		0–450	350–750	650–1,150	
275	375	25	100	375		450	1,550	675	275	2,625	0–25	10–240	120–2,820		0–500	400–800	650–1,150	
250	400	75	150	400		450	1,550	675	300	2,600	0–35	15–275	140–3,300		0–500	400–800	700–1,150	
225	425	100	175	400		450	1,550	700	325	2,575	0–35	15–325	160–3,900		0–550	400–800	700–1,150	
200	450	125	200	425		475	1,550	700	350	2,550	5–50	20–450	220–5,400		50–550	450–800	700–1,150	
175	450	175	225	450	0	475	1,575	700	350	2,525	5–60	25–550	280–6,600	0	100–550	450–800	700–1,150	0
150	475	225	225	450	400	500	1,575	725	375	2,475	5–80	30–700	340–8,400	0–5	150–550	450–800	700–1,150	0–50
125	500	275	250	475	425	500	1,575	725	375	2,450	5–100	40–940	450–11,000	0–5	200–550	450–800	700–1,150	0–100
100	500	300	250	475	425	525	1,550	725	400	2,425	5–125	50–1,140	540–13,500	0–5	200–550	450–800	700–1,150	0–150
75	500	300	275	475	425	525	1,400	650	350	2,400	10–160	60–1,450	700–17,400	0–5	200–550	450–800	700–1,150	0–150
50	475	300	275	475	400	500	1,250	575	325	2,350	FALLOUT GOVERNS							
25	450	275	250	425	350	475	1,100	500	275	2,325								
0	325	225	175	375	300	400	925	450	250	2,275								

Figure 5.6a continued.

[1]Large Free Rocket.

CASUALTY and DAMAGE Tables
Large Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		0									600	600	3,850	2,975	2,700	2,375	1,375	925	1,275	900	100
1,150		250									850	850	3,850	3,000	2,725	2,400	1,400	1,000	1,325	950	350
1,100		400				0				0	1,000	1,000	3,875	3,000	2,750	2,425	1,450	1,050	1,375	1,025	500
1,050		525				325				150	1,150	1,150	3,875	3,025	2,750	2,425	1,500	1,100	1,400	1,075	600
1,000		625				450				350	1,300	1,300	3,900	3,050	2,775	2,450	1,525	1,150	1,500	1,125	675
950		700		0		550				475	1,500	1,500	3,900	3,050	2,800	2,475	1,550	1,200	1,650	1,150	750
900	0	750		200		625				550	1,750	1,750	3,925	3,075	2,800	2,500	1,575	1,225	2,100	1,200	800
850	275	800		350	0	700			0	625	2,125	2,125	3,925	3,075	2,825	2,500	1,600	1,250	2,175	1,250	850
800	400	850		450	300	750			175	700	2,175	2,175	3,950	3,100	2,850	2,525	1,625	1,300	2,175	1,275	900
775	450	875		500	350	775			475	725	2,200	2,200	3,950	3,100	2,850	2,525	1,650	1,300	2,175	1,275	925
750	500	900		550	400	800		0	550	750	2,200	2,200	3,950	3,100	2,850	2,550	1,650	1,325	2,175	1,325	950
725	525	925	0	575	450	825		175	625	775	2,200	2,200	3,950	3,125	2,850	2,550	1,675	1,350	2,175	1,400	950
700	550	950	100	600	475	850		250	675	800	2,175	2,175	3,975	3,125	2,875	2,550	1,675	1,350	2,225	1,475	975
675	600	950	200	625	525	875		325	725	825	2,175	2,175	3,975	3,125	2,875	2,550	1,700	1,350	2,200	1,500	1,000
650	625	975	275	650	550	875		375	1,200	1,200	2,150	2,150	3,975	3,150	2,875	2,575	1,700	1,375	2,175	1,475	1,000
625	650	1,000	325	675	575	900		400	1,225	1,225	2,125	2,125	3,975	3,150	2,875	2,575	1,700	1,400	2,150	1,475	1,025
600	650	1,000	375	700	600	925		450	1,250	1,250	2,100	2,100	3,975	3,150	2,900	2,575	1,725	1,400	2,125	1,450	1,050
575	675	1,025	400	725	625	950		475	1,275	1,275	2,075	2,075	3,975	3,150	2,900	2,600	1,725	1,400	2,100	1,425	1,050
550	700	1,025	450	750	650	950	0	500	1,275	1,275	2,050	2,050	3,975	3,150	2,900	2,600	1,725	1,425	2,075	1,425	1,075
525	725	1,050	475	750	675	975	150	525	1,250	1,250	2,000	2,000	4,000	3,150	2,900	2,600	1,750	1,425	2,025	1,425	1,075
500	825	1,050	500	775	675	975	225	550	1,250	1,250	1,975	1,975	4,000	3,175	2,900	2,600	1,750	1,450	2,000	1,425	1,100
475	850	1,075	525	800	700	1,000	275	575	1,225	1,225	1,950	1,950	4,000	3,175	2,925	2,600	1,750	1,450	1,950	1,425	1,100
450	850	1,075	550	800	725	1,000	300	600	1,200	1,200	1,900	1,900	4,000	3,175	2,925	2,600	1,750	1,450	1,925	1,425	1,125
425	850	1,100	575	825	725	1,025	350	625	1,175	1,175	1,850	1,850	4,000	3,175	2,925	2,625	1,775	1,450	1,875	1,450	1,125
400	850	1,100	575	825	750	1,025	375	625	1,175	1,175	1,825	1,825	4,000	3,175	2,925	2,625	1,775	1,475	1,850	1,450	1,125
375	875	1,100	600	850	750	1,025	400	650	1,150	1,150	1,775	1,775	4,000	3,175	2,925	2,625	1,775	1,475	1,800	1,450	1,150
350	875	1,125	625	850	775	1,050	425	650	1,125	1,125	1,750	1,750	4,000	3,175	2,925	2,625	1,800	1,475	1,750	1,450	1,150
325	875	1,125	650	850	775	1,050	450	675	1,100	1,100	1,700	1,700	4,025	3,175	2,950	2,625	1,800	1,475	1,725	1,475	1,150
300	875	1,125	650	875	800	1,050	450	675	1,075	1,075	1,650	1,650	4,025	3,175	2,950	2,625	1,800	1,500	1,725	1,475	1,175
275	875	1,150	650	875	800	1,075	475	700	1,075	1,075	1,625	1,625	4,025	3,200	2,950	2,650	1,800	1,500	1,725	1,475	1,175
250	875	1,150	650	900	800	1,075	475	700	1,050	1,050	1,600	1,600	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
225	875	1,150	675	900	825	1,075	500	700	1,025	1,025	1,575	1,575	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
200	875	1,150	675	900	825	1,075	500	725	1,025	1,050	1,550	1,550	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
175	875	1,150	700	900	825	1,075	525	725	1,000	1,050	1,500	1,500	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
150	875	1,150	700	900	825	1,100	525	725	975	1,050	1,475	1,475	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
125	875	1,175	700	900	850	1,100	525	725	975	1,050	1,450	1,450	3,800	3,050	2,850	2,600	1,825	1,525	1,750	1,500	1,200
100	900	1,175	700	925	850	1,100	525	750	950	1,050	1,425	1,425	3,575	2,825	2,600	2,525	1,825	1,525	1,750	1,500	1,200
75	900	1,175	700	925	850	1,100	550	750	925	1,050	1,400	1,400	3,325	2,600	2,350	2,450	1,825	1,525	1,750	1,500	1,200
50	900	1,175	700	925	850	1,100	550	750	900	1,050	1,375	1,375	3,075	2,350	2,100	2,350	1,825	1,525	1,750	1,500	1,200
25	900	1,175	700	925	850	1,100	550	750	900	1,050	1,350	1,350	2,850	2,125	1,850	2,275	1,825	1,525	1,750	1,500	1,200
0	900	1,175	700	925	850	1,100	550	750	875	1,050	1,325	1,325	2,575	1,875	1,600	2,175	1,825	1,525	1,750	1,500	1,200

HOB_{fs} = 65 m
Low HOB_{min} = 115 m
High HOB_{min} = 259 m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 5.6b.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							1,775			3,650			0–5				0–650	
1,150							1,825			3,675			0–5				0–750	
1,100							1,850			3,675			0–10				0–800	
1,050							1,875	0		3,675			0–10				0–850	
1,000							1,900	150		3,675			0–15				0–950	
950							1,925	350		3,675		0	0–20			0	0–1,000	
900							1,950	450		3,650		0–5	0–25			0–50	0–1,050	
850							1,975	550		3,625		0–5	0–35			0–350	0–1,050	
800							2,000	625		3,600		0–5	5–45			0–450	50–1,100	
775							2,000	650		3,600		0–5	5–55			0–500	200–1,150	
750							2,025	675		3,600		0–10	5–70			0–550	300–1,150	
725							2,025	700		3,575		0–10	5–85			0–550	350–1,150	
700							2,025	725		3,575		0–10	5–100			0–600	400–1,200	
675							2,050	750		3,550		0–15	5–125			0–600	450–1,200	
650							2,050	775		3,550		0–15	10–160			0–650	500–1,200	
625				0			2,050	800		3,525	0	0–20	10–200		0	0–700	500–1,200	
600				50			2,075	800		3,525	0–5	0–20	10–240		0–50	0–700	550–1,250	
575				125			2,075	825		3,500	0–5	0–25	15–300		0–200	0–700	600–1,250	
550				175			2,075	850	0	3,475	0–5	0–35	15–380		0–250	0–750	600–1,250	
525				225			2,075	875	125	3,450	0–5	0–45	20–500		0–300	0–750	650–1,250	
500	0			275			2,100	875	200	3,450	0–10	5–50	25–600		0–350	50–800	650–1,300	
475	50			325		0	2,100	900	250	3,425	0–10	5–75	40–900		0–400	150–800	650–1,300	
450	125			375		575	2,100	900	300	3,400	0–15	5–100	50–1,140		0–400	250–800	700–1,300	
425	175		0	400		600	2,100	925	325	3,375	0–15	5–125	60–1,500		0–450	300–800	700–1,300	
400	225		25	425		600	2,125	925	375	3,350	0–20	10–170	80–1,980		0–450	300–850	700–1,300	
375	350	0	75	475		600	2,125	950	400	3,325	0–25	10–220	120–2,600		0–500	350–850	750–1,300	
350	475	25	125	475		625	2,125	950	400	3,300	0–30	15–270	140–3,200		0–500	400–850	750–1,350	
325	500	75	175	500		625	2,125	950	425	3,275	0–40	15–330	160–3,960		0–500	400–850	750–1,350	
300	550	100	200	525		625	2,125	975	450	3,250	5–45	20–390	200–4,680		50–550	400–850	750–1,350	
275	575	150	250	550		625	2,125	975	475	3,225	5–55	20–470	230–5,650	0	150–550	450–900	800–1,350	0
250	575	175	275	550		625	2,125	975	475	3,200	5–65	25–550	270–6,600	0–5	200–550	450–900	800–1,350	0–50
225	600	225	275	575	0	650	2,150	975	500	3,175	5–75	30–650	320–7,800	0–5	200–600	450–900	800–1,350	0–150
200	625	275	300	600	450	650	2,150	1,000	500	3,150	5–100	40–900	440–10,800	0–5	250–600	500–900	800–1,350	0–150
175	650	350	325	600	525	650	2,150	1,000	500	3,125	5–125	50–1,100	540–13,200	0–5	250–600	500–900	800–1,350	0–200
150	650	375	325	625	550	650	2,150	1,000	525	3,075	10–160	60–1,400	680–16,800	0–5	300–600	500–900	800–1,350	0–200
125	650	375	350	625	575	650	2,075	975	525	3,050	10–200	75–1,850	900–22,200	0–5	300–600	500–900	800–1,350	0–250
100	650	375	350	650	575	650	1,900	900	475	3,025	10–250	90–2,250	1,080–27,000	0–10	300–600	500–900	800–1,350	0–250
75	650	400	375	625	575	650	1,750	825	450	2,975	15–320	120–2,900	1,400–34,800	0–10	300–600	500–900	800–1,350	0–250
50	625	375	350	600	525	625	1,575	750	400	2,950	FALLOUT COVERNS							
25	550	350	300	575	500	575	1,425	675	375	2,900								
0	450	300	250	500	425	500	1,250	600	325	2,875								

Figure 5.6b continued.

[1]Large Free Rocket.

CASUALTY and DAMAGE Tables
Large Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		400				250				0	1,600	1,600	5,725	3,850	3,275	3,350	1,950	1,375	2,050	1,075	575
1,150		525				425				250	1,750	1,750	5,725	3,875	3,300	3,375	1,975	1,425	2,475	1,125	675
1,100		625				550				425	1,950	1,950	5,750	3,875	3,325	3,400	2,000	1,450	2,700	1,150	750
1,050		700		0		625				525	2,350	2,350	5,750	3,900	3,350	3,400	2,025	1,500	2,750	1,275	825
1,000	0	775		225	0	700			0	625	2,625	2,625	5,750	3,900	3,350	3,425	2,050	1,525	2,750	1,400	875
950	300	825		400	175	775			475	700	2,675	2,675	5,775	3,925	3,375	3,425	2,075	1,550	2,750	1,650	925
900	425	875		500	350	825			625	750	2,700	2,700	5,775	3,925	3,375	3,450	2,100	1,600	2,750	1,800	975
850	525	925		575	450	875		0	800	825	2,700	2,700	5,775	3,950	3,400	3,475	2,125	1,625	2,775	1,875	1,025
800	600	975	0	650	550	925		275	1,150	1,150	2,650	2,650	5,800	3,950	3,400	3,475	2,150	1,650	2,725	1,850	1,075
775	625	1,000	200	675	575	950		350	1,450	1,450	2,650	2,650	5,800	3,950	3,425	3,475	2,150	1,650	2,700	1,850	1,075
750	650	1,025	275	700	600	975		400	1,525	1,525	2,625	2,625	5,800	3,950	3,425	3,475	2,150	1,675	2,675	1,825	1,100
725	675	1,025	325	725	625	975		450	1,550	1,550	2,575	2,575	5,800	3,975	3,425	3,500	2,175	1,675	2,650	1,800	1,125
700	700	1,050	400	750	675	1,000		475	1,550	1,550	2,525	2,525	5,800	3,975	3,425	3,500	2,175	1,700	2,600	1,800	1,125
675	725	1,075	425	775	700	1,025		525	1,525	1,525	2,475	2,475	5,800	3,975	3,425	3,500	2,175	1,700	2,575	1,775	1,150
650	1,000	1,075	475	800	725	1,050	0	550	1,525	1,525	2,450	2,450	5,825	3,975	3,450	3,500	2,200	1,700	2,550	1,750	1,150
625	1,100	1,100	500	825	725	1,050	125	575	1,525	1,525	2,400	2,400	5,825	3,975	3,450	3,500	2,200	1,725	2,500	1,725	1,175
600	1,125	1,125	525	825	750	1,075	200	600	1,500	1,500	2,350	2,350	5,825	3,975	3,450	3,525	2,200	1,725	2,475	1,700	1,200
575	1,125	1,125	550	850	775	1,075	275	625	1,500	1,500	2,325	2,325	5,825	4,000	3,450	3,525	2,225	1,750	2,425	1,675	1,200
550	1,150	1,150	575	875	800	1,100	325	650	1,475	1,475	2,275	2,275	5,825	4,000	3,450	3,525	2,225	1,750	2,400	1,650	1,225
525	1,150	1,150	600	875	800	1,100	350	675	1,450	1,450	2,250	2,250	5,825	4,000	3,450	3,525	2,225	1,750	2,350	1,625	1,225
500	1,150	1,150	625	900	825	1,125	400	700	1,425	1,425	2,200	2,200	5,825	4,000	3,475	3,525	2,225	1,750	2,300	1,600	1,225
475	1,150	1,175	650	900	850	1,125	425	700	1,400	1,400	2,175	2,175	5,825	4,000	3,475	3,525	2,250	1,775	2,275	1,575	1,250
450	1,150	1,175	650	925	850	1,150	450	725	1,375	1,375	2,150	2,150	5,825	4,000	3,475	3,525	2,250	1,775	2,225	1,550	1,250
425	1,150	1,175	675	925	875	1,150	475	750	1,350	1,350	2,100	2,100	5,825	4,000	3,475	3,525	2,250	1,775	2,175	1,550	1,275
400	1,150	1,200	700	950	875	1,150	500	750	1,350	1,350	2,075	2,075	5,825	4,000	3,475	3,550	2,250	1,775	2,125	1,550	1,275
375	1,150	1,200	700	950	875	1,175	525	775	1,325	1,325	2,050	2,050	5,850	4,025	3,475	3,550	2,250	1,800	2,100	1,575	1,275
350	1,150	1,200	725	975	900	1,175	525	775	1,300	1,300	2,025	2,025	5,850	4,025	3,475	3,550	2,250	1,800	2,050	1,575	1,275
325	1,150	1,225	725	975	900	1,175	550	775	1,275	1,275	1,975	1,975	5,850	4,025	3,475	3,550	2,275	1,800	2,025	1,575	1,300
300	1,150	1,225	750	975	925	1,175	550	800	1,275	1,275	1,950	1,950	5,850	4,025	3,500	3,550	2,275	1,800	2,000	1,575	1,300
275	1,150	1,225	750	1,000	925	1,200	575	800	1,250	1,250	1,925	1,925	5,850	4,025	3,500	3,550	2,275	1,800	1,950	1,575	1,300
250	1,150	1,225	750	1,000	925	1,200	575	825	1,225	1,225	1,900	1,900	5,850	4,025	3,500	3,550	2,275	1,800	1,925	1,600	1,300
225	1,150	1,250	775	1,000	950	1,200	600	825	1,225	1,225	1,875	1,875	5,850	4,025	3,500	3,500	2,275	1,825	1,900	1,600	1,325
200	1,150	1,250	775	1,000	950	1,200	600	825	1,200	1,200	1,850	1,850	5,850	4,025	3,500	3,550	2,275	1,825	1,875	1,600	1,325
175	1,125	1,250	775	1,000	950	1,200	625	825	1,175	1,175	1,825	1,825	5,725	3,925	3,400	3,500	2,200	1,800	1,825	1,600	1,325
150	1,125	1,250	800	1,000	950	1,225	625	850	1,175	1,175	1,800	1,800	5,400	3,725	3,200	3,325	2,225	1,775	1,850	1,600	1,325
125	1,100	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,775	1,775	5,100	3,525	3,000	3,150	2,175	1,750	1,850	1,600	1,325
100	1,075	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,750	1,750	4,750	3,300	2,800	2,975	2,150	1,725	1,850	1,600	1,325
75	1,050	1,250	800	1,025	950	1,225	625	850	1,125	1,175	1,725	1,725	4,500	3,100	2,625	2,750	2,100	1,700	1,875	1,600	1,325
50	1,025	1,250	800	1,025	975	1,225	625	850	1,125	1,175	1,700	1,700	4,100	2,875	2,425	2,600	2,050	1,675	1,875	1,600	1,325
25	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,750	2,675	2,250	2,425	2,025	1,650	1,875	1,600	1,325
0	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,375	2,475	2,050	2,275	1,975	1,625	1,875	1,600	1,325

HOB_{fs} = 82 m
Low HOB_{min} = 144 m
High HOB_{min} = 326 m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 5.6c.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam Hwy and RR brgs	Severe dam float brgs	2d -degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							2,625	650		4,625			0–10				0–750	
1,150							2,650	750		4,600			0–10				0–800	
1,100							2,675	825		4,600			0–15				0–900	
1,050							2,700	875		4,575		0	0–20			0	0–950	
1,000							2,700	925		4,550		0–5	0–25			0–50	0–1,000	
950							2,725	975		4,525		0–5	0–35			0–300	0–1,050	
900							2,750	1,025		4,500		0–5	5–45			0–450	50–1,100	
850							2,750	1,075		4,475		0–10	5–65			0–550	350–1,150	
800				0			2,775	1,100		4,450		0–10	5–90			0–600	450–1,150	
775				25			2,775	1,125		4,450	0	0–10	5–110		0	0–650	500–1,200	
750				75			2,800	1,150	0	4,425	0–5	0–15	10–140		0–50	0–700	550–1,200	
725				150			2,800	1,150	75	4,400	0–5	0–15	10–170		0–200	0–700	550–1,200	
700				225			2,800	1,175	200	4,400	0–5	0–20	10–200		0–300	0–750	600–1,250	
675				275			2,800	1,200	275	4,375	0–5	0–25	10–250		0–350	0–750	600–1,250	
650				325			2,825	1,200	325	4,350	0–5	0–30	15–320		0–400	0–800	650–1,250	
625	0			375		0	2,825	1,225	375	4,325	0–5	0–35	20–390		0–450	0–800	700–1,300	
600	75			425		750	2,825	1,225	425	4,325	0–5	5–40	20–480		0–450	50–800	700–1,300	
575	125			475		775	2,825	1,250	450	4,300	0–10	5–50	25–590		0–500	200–850	700–1,300	
550	200			525		775	2,825	1,250	475	4,275	0–10	5–65	30–750		0–550	250–850	750–1,300	
525	250		0	550		775	2,850	1,275	500	4,250	0–10	5–85	40–990		0–600	300–900	750–1,350	
500	325		25	575		775	2,850	1,275	525	4,225	0–15	5–100	50–1,200		0–600	350–900	800–1,350	
475	425	0	100	600		775	2,850	1,275	550	4,200	0–20	10–150	75–1,800		0–600	400–900	800–1,350	
450	600	25	150	625	0	800	2,850	1,300	575	4,175	0–25	10–190	100–2,280		0–600	400–900	800–1,350	
425	675	75	200	650	550	800	2,850	1,300	600	4,150	0–30	10–250	120–3,000		0–650	450–950	800–1,350	
400	700	100	250	675	650	800	2,850	1,300	600	4,125	0–40	15–330	160–3,960		0–650	450–950	850–1,350	
375	725	150	275	700	675	800	2,875	1,325	625	4,100	0–50	20–430	210–5,160		0–650	500–950	850–1,400	
350	750	200	325	725	675	825	2,875	1,325	650	4,075	5–60	25–530	260–6,360		50–700	500–950	850–1,400	
325	775	225	350	725	700	825	2,875	1,325	650	4,050	5–75	30–660	320–7,920	0	150–700	500–950	850–1,400	0
300	800	275	350	750	700	825	2,875	1,325	675	4,025	5–90	35–780	380–9,360	0–5	200–700	550–1,000	850–1,400	0–50
275	800	325	375	775	700	825	2,875	1,350	675	4,000	5–105	40–940	460–11,300	0–5	250–700	550–1,000	900–1,400	0–150
250	825	375	400	775	700	850	2,875	1,350	675	3,950	5–125	45–1,100	530–13,200	0–5	250–750	550–1,000	900–1,400	0–200
225	850	425	425	800	725	850	2,875	1,350	700	3,925	10–150	60–1,300	630–15,600	0–5	300–750	600–1,000	900–1,400	0–200
200	850	475	450	825	725	850	2,875	1,350	700	3,900	10–200	75–1,800	870–21,600	0–5	300–750	600–1,000	900–1,400	0–250
175	875	500	450	825	725	850	2,850	1,350	725	3,875	10–250	90–2,200	1,060–26,400	0–10	350–750	600–1,000	900–1,400	0–250
150	875	500	475	850	725	850	2,675	1,275	675	3,825	15–310	120–2,800	1,350–33,600	0–10	350–750	600–1,000	900–1,400	0–300
125	850	500	475	850	725	850	2,500	1,200	650	3,800	20–410	150–3,700	1,780–44,000	0–10	350–750	600–1,000	900–1,400	0–300
100	850	525	475	850	700	825	2,350	1,125	600	3,775	20–500	180–4,500	2,160–54,000	0–15	350–750	600–1,000	900–1,400	0–300
75	825	500	475	825	675	800	2,175	1,050	550	3,725	FALLOUT GOVERNS							
50	775	500	450	775	750	750	2,000	975	525	3,700								
25	700	450	375	725	600	725	1,850	900	475	3,650								
0	600	400	325	650	550	650	1,675	825	450	3,625								

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Figure 5.6c continued.

[1]Large Free Rocket.

CASUALTY and DAMAGE Tables
Large Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in l-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		600				400			0	125	3,750	3,750	8,575	6,450	5,600	5,225	3,100	2,350	3,750	2,000	675
1,300		700				550			900	900	3,750	3,750	8,575	6,450	5,600	5,225	3,125	2,375	3,750	2,175	750
1,250		800				650			1,125	1,125	3,750	3,750	8,600	6,475	5,625	5,250	3,150	2,400	3,750	2,375	825
1,200	0	875		0		750			1,300	1,300	3,750	3,750	8,600	6,475	5,625	5,250	3,175	2,425	3,750	2,500	925
1,150	250	925		250	0	800			1,425	1,425	3,750	3,750	8,600	6,475	5,625	5,275	3,175	2,450	3,750	2,550	975
1,100	425	975	0	425	250	875			2,125	2,125	3,700	3,700	8,600	6,500	5,650	5,275	3,200	2,475	3,700	2,525	1,025
1,050	550	1,025	150	550	400	950			2,150	2,150	3,700	3,700	8,625	6,500	5,650	5,300	3,225	2,500	3,650	2,500	1,125
1,000	625	1,075	350	625	525	1,000		0	2,175	2,175	3,650	3,650	8,625	6,500	5,675	5,300	3,225	2,500	3,600	2,475	1,225
950	700	1,125	475	700	600	1,050		300	2,175	2,175	3,600	3,600	8,625	6,500	5,675	5,300	3,250	2,525	3,550	2,425	1,375
900	1,350	1,350	550	775	675	1,075		425	2,150	2,150	3,500	3,500	8,625	6,525	5,675	5,325	3,250	2,550	3,475	2,400	1,450
850	1,575	1,575	650	825	750	1,125		525	2,125	2,125	3,400	3,400	8,650	6,525	5,675	5,325	3,275	2,550	3,400	2,350	1,475
800	1,625	1,625	700	875	800	1,150		600	2,100	2,100	3,300	3,300	8,650	6,525	5,700	5,325	3,300	2,575	3,325	2,300	1,450
775	1,625	1,625	725	900	825	1,175	0	625	2,100	2,100	3,250	3,250	8,650	6,525	5,700	5,325	3,300	2,575	3,300	2,275	1,450
750	1,625	1,625	750	925	850	1,200	125	650	2,075	2,075	3,250	3,250	8,650	6,525	5,700	5,350	3,300	2,600	3,250	2,250	1,425
725	1,650	1,650	775	925	850	1,200	225	675	2,050	2,050	3,200	3,200	8,650	6,525	5,700	5,350	3,300	2,600	3,225	2,225	1,425
700	1,650	1,650	800	950	875	1,225	300	700	2,050	2,050	3,150	3,150	8,650	6,525	5,700	5,350	3,325	2,600	3,175	2,175	1,400
675	1,650	1,650	825	975	900	1,250	350	725	2,025	2,025	3,100	3,100	8,650	6,550	5,725	5,350	3,325	2,625	3,125	2,150	1,375
650	1,650	1,650	850	1,000	925	1,250	400	750	2,000	2,000	3,050	3,050	8,650	6,550	5,725	5,350	3,325	2,625	3,075	2,125	1,350
625	1,650	1,650	850	1,000	925	1,250	425	775	1,975	1,975	3,000	3,000	8,675	6,550	5,725	5,350	3,325	2,625	3,050	2,100	1,375
600	1,650	1,650	875	1,025	950	1,275	475	800	1,950	1,950	3,000	3,000	8,675	6,550	5,725	5,375	3,325	2,625	3,000	2,100	1,375
575	1,650	1,650	900	1,025	975	1,275	500	825	1,925	1,925	2,950	2,950	8,675	6,550	5,725	5,375	3,350	2,650	2,950	2,075	1,400
550	1,650	1,650	900	1,050	975	1,300	525	825	1,900	1,900	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,900	2,050	1,400
525	1,650	1,650	925	1,050	1,000	1,300	550	850	1,875	1,875	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,850	2,025	1,425
500	1,650	1,650	950	1,075	1,000	1,325	575	850	1,850	1,850	2,850	2,850	8,675	6,575	5,725	5,375	3,350	2,650	2,825	2,025	1,425
475	1,650	1,650	950	1,075	1,025	1,325	600	875	1,825	1,825	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,775	2,000	1,425
450	1,650	1,650	975	1,100	1,025	1,325	625	875	1,800	1,800	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,750	1,975	1,425
425	1,650	1,650	975	1,100	1,050	1,350	625	900	1,775	1,775	2,750	2,750	8,675	6,575	5,725	5,375	3,350	2,675	2,725	1,950	1,450
400	1,650	1,650	975	1,125	1,050	1,350	650	900	1,750	1,750	2,700	2,700	8,675	6,575	5,725	5,375	3,350	2,675	2,700	1,950	1,450
375	1,650	1,650	1,000	1,125	1,050	1,350	650	925	1,725	1,725	2,700	2,700	8,675	6,575	5,800	5,375	3,350	2,675	2,650	1,925	1,450
350	1,650	1,650	1,000	1,125	1,075	1,375	675	925	1,700	1,700	2,650	2,650	8,675	6,575	5,800	5,375	3,375	2,675	2,625	1,900	1,475
325	1,650	1,650	1,025	1,150	1,075	1,375	675	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,600	1,900	1,475
300	1,650	1,650	1,025	1,150	1,075	1,375	700	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,575	1,875	1,475
275	1,650	1,650	1,025	1,150	1,100	1,375	700	950	1,650	1,650	2,550	2,550	8,675	6,575	5,800	5,375	3,375	2,675	2,550	1,875	1,475
250	1,650	1,650	1,025	1,150	1,100	1,400	725	975	1,625	1,625	2,550	2,550	8,600	6,500	5,675	5,350	3,300	2,650	2,525	1,850	1,475
225	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,625	1,625	2,500	2,500	8,000	6,225	5,425	5,100	3,200	2,575	2,500	1,850	1,500
200	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,600	1,600	2,500	2,500	7,750	5,950	5,175	4,875	3,100	2,500	2,475	1,825	1,500
175	1,600	1,600	1,050	1,175	1,100	1,400	750	975	1,600	1,600	2,450	2,450	7,500	5,675	4,925	4,650	2,975	2,400	2,450	1,825	1,500
150	1,575	1,575	1,050	1,175	1,125	1,400	750	975	1,575	1,575	2,450	2,450	7,100	5,400	4,700	4,425	2,875	2,325	2,425	1,800	1,500
125	1,550	1,550	1,050	1,175	1,125	1,400	750	975	1,550	1,550	2,400	2,400	6,750	5,100	4,450	4,200	2,775	2,250	2,400	1,800	1,500
100	1,525	1,525	1,050	1,175	1,125	1,400	750	1,000	1,550	1,550	2,400	2,400	6,400	4,825	4,200	3,975	2,675	2,175	2,375	1,800	1,500
75	1,475	1,475	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,350	2,350	6,050	4,550	3,950	3,725	2,550	2,100	2,350	1,800	1,500
50	1,425	1,425	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,300	2,300	5,600	4,275	3,700	3,500	2,450	2,025	2,350	1,800	1,500
25	1,350	1,350	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	5,300	4,025	3,475	3,300	2,350	1,950	2,325	1,800	1,500
0	1,300	1,300	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	4,850	3,750	3,250	3,100	2,250	1,875	2,300	1,800	1,500

HOB_{fs} = 111 m

Low HOB_{min} = 196 m

High HOB_{min} = 442 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h^{m}$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h^{m}$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h^{m}$ m

Figure 5.6d.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350							3,700	1,550		6,175			0–10				0–800	
1,300							3,700	1,600		6,150			0–10				0–850	
1,250							3,725	1,625		6,125			0–15				0–950	
1,200							3,750	1,675	0	6,100		0	0–15			0	0–1,000	
1,150							3,750	1,700	300	6,075		0–5	0–25			0–50	0–1,050	
1,100				0			3,775	1,750	450	6,050		0–5	0–30			0–350	0–1,100	
1,050				25			3,775	1,775	550	6,025		0–5	5–40			0–500	50–1,150	
1,000				175			3,800	1,800	650	6,000		0–5	5–60			0–600	350–1,200	
950				300			3,825	1,825	725	5,950		0–10	5–80			0–650	500–1,250	
900				425		0	3,825	1,850	775	5,925		0–10	5–110			0–750	550–1,300	
850	0			550		1,175	3,825	1,875	825	5,875	0	0–15	10–160		0	0–800	650–1,300	
800	150			650		1,225	3,850	1,900	875	5,850	0–5	0–20	10–230		0–50	0–850	700–1,350	
775	225			700		1,225	3,850	1,900	900	5,825	0–5	0–25	15–270		0–200	0–850	750–1,350	
750	275			725	0	1,225	3,850	1,925	925	5,800	0–5	0–30	15–330		0–300	0–900	750–1,400	
725	350			775	800	1,225	3,875	1,925	950	5,775	0–5	0–35	20–410		0–350	0–900	800–1,400	
700	400		0	800	875	1,225	3,875	1,925	950	5,750	0–5	5–45	20–500		0–400	50–950	800–1,400	
675	475		50	850	900	1,225	3,875	1,950	975	5,725	0–10	5–55	25–620		0–450	200–950	850–1,400	
650	600	0	125	875	900	1,225	3,875	1,950	975	5,700	0–10	5–65	35–780		0–500	300–950	850–1,450	
625	825	25	175	900	925	1,250	3,875	1,975	1,025	5,675	0–10	5–80	40–960		0–500	350–1,000	850–1,450	
600	900	50	250	925	925	1,250	3,875	1,975	1,025	5,650	0–15	5–100	50–1,200		0–550	400–1,000	900–1,450	
575	950	100	300	950	925	1,250	3,900	1,975	1,050	5,625	0–15	5–125	60–1,470		0–600	400–1,000	900–1,450	
550	975	150	350	975	950	1,250	3,900	1,975	1,050	5,600	0–20	10–155	75–1,860		0–600	450–1,050	900–1,450	
525	1,000	200	375	1,000	950	1,250	3,900	2,000	1,075	5,575	0–25	10–205	100–2,460		0–600	450–1,050	950–1,500	
500	1,025	225	425	1,000	950	1,250	3,900	2,000	1,075	5,550	5–30	10–250	120–3,000		50–650	500–1,050	950–1,500	
475	1,075	275	450	1,025	950	1,250	3,900	2,000	1,100	5,525	5–45	15–375	180–4,500	0	150–650	550–1,050	950–1,500	0
450	1,100	325	475	1,050	950	1,250	3,900	2,000	1,100	5,500	5–55	20–475	230–5,700	0–5	250–700	550–1,100	1,000–1,500	0–50
425	1,100	350	500	1,075	975	1,250	3,900	2,025	1,100	5,475	5–70	25–625	300–7,500	0–5	300–700	600–1,100	1,000–1,500	0–150
400	1,125	400	525	1,100	975	1,250	3,900	2,025	1,125	5,450	5–90	35–825	400–9,900	0–5	300–700	600–1,100	1,000–1,500	0–200
375	1,150	450	550	1,100	1,000	1,250	3,900	2,025	1,125	5,425	5–120	45–1,080	520–12,900	0–5	350–750	600–1,100	1,000–1,550	0–250
350	1,175	500	575	1,125	1,000	1,250	3,925	2,025	1,125	5,400	10–150	55–1,330	640–15,900	0–5	400–750	650–1,100	1,000–1,550	0–300
325	1,200	575	600	1,150	1,000	1,250	3,925	2,025	1,150	5,350	10–190	70–1,650	800–19,800	0–5	400–750	650–1,150	1,000–1,550	0–350
300	1,225	650	600	1,175	1,025	1,250	3,925	2,050	1,150	5,325	10–215	80–1,950	940–23,400	0–5	400–750	650–1,150	1,050–1,550	0–350
275	1,225	675	625	1,175	1,025	1,250	3,925	2,050	1,150	5,300	15–260	100–2,350	1,130–28,200	0–10	450–800	650–1,150	1,050–1,550	0–400
250	1,250	700	650	1,200	1,025	1,250	3,850	2,025	1,150	5,275	15–310	110–2,750	1,320–33,000	0–10	450–800	700–1,150	1,050–1,550	0–400
225	1,250	725	650	1,200	1,050	1,250	3,700	1,950	1,125	5,225	15–360	130–3,250	1,560–39,000	0–10	450–800	700–1,150	1,050–1,550	0–400
200	1,250	725	675	1,225	1,050	1,250	3,550	1,850	1,075	5,200	20–500	180–4,500	2,160–54,000	0–15	500–800	700–1,150	1,050–1,550	0–450
175	1,250	750	675	1,225	1,075	1,250	3,400	1,775	1,025	5,175	25–610	220–5,500	2,640–66,000	0–15	500–800	700–1,150	1,050–1,550	0–450
150	1,225	750	700	1,225	1,075	1,225	3,275	1,700	975	5,125	35–770	280–7,000	3,360–84,000	0–20	500–800	700–1,150	1,050–1,550	0–450
125	1,225	750	700	1,200	1,050	1,225	3,125	1,600	950	5,100	45–1,020	370–9,250	4,440–111,000	5–25	500–800	700–1,150	1,050–1,550	0–450
100	1,200	725	675	1,175	1,025	1,200	2,975	1,525	900	5,050	FALLOUT GOVERNS							
75	1,150	725	650	1,150	975	1,150	2,825	1,450	850	5,025								
50	1,075	675	600	1,100	925	1,125	2,675	1,375	800	5,000								
25	975	650	525	1,025	875	1,075	2,525	1,275	750	4,950								
0	825	550	450	950	800	975	2,375	1,200	725	4,925								

Figure 5.6d continued.

[1]Large Free Rocket.

LFR 1

CASUALTY and DAMAGE Tables
Large Free Rocket
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		975	0	0		800			2,650	2,650	4,600	4,600	11,325	8,900	7,575	7,100	4,475	3,400	4,625	3,150	1,350
1,300		1,025	125	125	0	875			2,700	2,700	4,550	4,550	11,325	8,900	7,600	7,100	4,475	3,425	4,575	3,125	1,475
1,250		1,100	250	375	200	950			2,700	2,700	4,500	4,500	11,350	8,900	7,600	7,125	4,500	3,425	4,525	3,100	1,600
1,200		1,150	375	500	400	1,000			2,700	2,700	4,450	4,450	11,350	8,925	7,600	7,125	4,500	3,450	4,475	3,075	1,725
1,150	0	1,200	475	625	525	1,075		0	2,675	2,675	4,400	4,400	11,350	8,925	7,625	7,125	4,525	3,475	4,400	3,025	1,825
1,100	1,950	1,950	550	700	625	1,125		175	2,650	2,650	4,300	4,300	11,350	8,925	7,625	7,125	4,525	3,475	4,325	2,975	1,875
1,050	2,100	2,100	625	775	700	1,175		375	2,600	2,600	4,250	4,250	11,350	8,950	7,625	7,150	4,550	3,500	4,250	2,925	1,850
1,000	2,150	2,150	675	825	775	1,200		500	2,600	2,600	4,150	4,150	11,350	8,950	7,625	7,150	4,550	3,525	4,175	2,875	1,825
950	2,175	2,175	725	900	825	1,250		575	2,575	2,575	4,050	4,050	11,350	8,950	7,650	7,150	4,575	3,525	4,100	2,825	1,800
900	2,175	2,175	775	950	900	1,275	0	650	2,525	2,525	4,000	4,000	11,375	8,950	7,650	7,175	4,575	3,550	4,025	2,775	1,775
850	2,175	2,175	800	1,000	950	1,325	175	725	2,475	2,475	3,900	3,900	11,375	8,950	7,650	7,175	4,575	3,550	3,950	2,725	1,725
800	2,175	2,175	825	1,025	975	1,350	350	775	2,450	2,450	3,800	3,800	11,375	8,950	7,650	7,175	4,600	3,575	3,850	2,675	1,675
775	2,175	2,175	825	1,050	1,000	1,350	400	800	2,425	2,425	3,800	3,800	11,375	8,975	7,650	7,175	4,600	3,575	3,800	2,650	1,650
750	2,175	2,175	825	1,075	1,025	1,375	450	825	2,400	2,400	3,750	3,750	11,375	8,975	7,675	7,175	4,600	3,575	3,775	2,625	1,625
725	2,175	2,175	850	1,075	1,050	1,400	475	850	2,375	2,375	3,700	3,700	11,375	8,975	7,675	7,175	4,600	3,575	3,725	2,600	1,600
700	2,175	2,175	850	1,100	1,050	1,400	525	875	2,350	2,350	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,675	2,600	1,575
675	2,175	2,175	850	1,100	1,075	1,425	550	875	2,325	2,325	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,625	2,575	1,500
650	2,175	2,175	850	1,125	1,075	1,425	575	900	2,300	2,300	3,600	3,600	11,400	8,975	7,675	7,200	4,625	3,600	3,575	2,550	1,525
625	2,175	2,175	850	1,150	1,100	1,450	600	925	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,550	2,525	1,525
600	2,175	2,175	850	1,150	1,125	1,450	625	950	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,525	2,525	1,550
575	2,175	2,175	875	1,175	1,125	1,450	650	950	2,250	2,250	3,500	3,500	11,400	9,000	7,675	7,200	4,625	3,625	3,475	2,500	1,550
550	2,175	2,175	900	1,175	1,150	1,475	675	975	2,225	2,225	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,450	2,475	1,550
525	2,175	2,175	900	1,200	1,150	1,475	700	975	2,200	2,200	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,425	2,475	1,575
500	2,175	2,175	925	1,200	1,150	1,475	725	1,000	2,175	2,175	3,400	3,400	11,400	9,000	7,675	7,200	4,650	3,625	3,375	2,450	1,575
475	2,175	2,175	925	1,225	1,175	1,500	725	1,000	2,175	2,175	3,350	3,350	11,400	9,000	7,675	7,200	4,650	3,625	3,350	2,425	1,600
450	2,175	2,175	950	1,225	1,175	1,500	750	1,025	2,150	2,150	3,350	3,350	11,400	9,000	7,675	7,225	4,650	3,625	3,325	2,425	1,600
425	2,175	2,175	950	1,225	1,200	1,500	750	1,025	2,125	2,125	3,300	3,300	11,400	9,000	7,675	7,225	4,650	3,625	3,300	2,400	1,600
400	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,100	2,100	3,250	3,250	11,400	9,000	7,675	7,225	4,650	3,625	3,275	2,375	1,600
375	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,075	2,075	3,250	3,250	11,400	9,000	7,700	7,225	4,650	3,625	3,250	2,375	1,625
350	2,175	2,175	975	1,250	1,225	1,525	800	1,050	2,075	2,075	3,200	3,200	11,400	9,000	7,700	7,225	4,650	3,650	3,225	2,350	1,625
325	2,175	2,175	1,000	1,250	1,225	1,525	800	1,075	2,050	2,050	3,200	3,200	11,200	8,650	7,525	7,050	4,550	3,550	3,200	2,350	1,625
300	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,050	2,050	3,150	3,150	10,850	8,400	7,275	6,825	4,400	3,450	3,150	2,325	1,625
275	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,025	2,025	3,150	3,150	10,400	8,125	7,025	6,600	4,275	3,350	3,125	2,325	1,625
250	2,125	2,125	1,025	1,275	1,250	1,550	825	1,075	2,025	2,025	3,100	3,100	10,100	7,850	6,775	6,375	4,125	3,250	3,125	2,300	1,650
225	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,100	3,100	9,800	7,550	6,550	6,150	3,975	3,125	3,100	2,300	1,650
200	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,050	3,050	9,400	7,250	6,300	5,925	3,825	3,025	3,075	2,275	1,650
175	2,075	2,075	1,025	1,300	1,250	1,550	850	1,100	1,975	1,975	3,050	3,050	9,050	6,950	6,050	5,700	3,675	2,900	3,050	2,275	1,650
150	2,025	2,025	1,025	1,300	1,250	1,550	850	1,100	1,950	1,950	3,000	3,000	8,700	6,650	5,800	5,475	3,525	2,800	3,025	2,250	1,650
125	2,000	2,000	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	3,000	3,000	8,350	6,375	5,550	5,225	3,375	2,700	3,000	2,250	1,650
100	1,950	1,950	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	2,950	2,950	7,975	6,100	5,300	5,000	3,250	2,600	2,975	2,225	1,650
75	1,900	1,900	1,050	1,300	1,275	1,575	875	1,100	1,900	1,900	2,950	2,950	7,600	5,825	5,050	4,750	3,125	2,500	2,950	2,225	1,650
50	1,850	1,850	1,050	1,300	1,275	1,575	875	1,125	1,900	1,900	2,900	2,900	7,250	5,550	4,825	4,525	2,950	2,375	2,950	2,225	1,650
25	1,775	1,775	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,825	5,275	4,600	4,325	2,825	2,250	2,925	2,200	1,650
0	1,700	1,700	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,400	5,000	4,350	4,125	2,700	2,150	2,900	2,200	1,650

HOB_{fs} = 140 m

Low HOB_{min} = 246 m

High HOB_{min} = 557 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 5.6e.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod Dom tks and orty	Severe dam sup deps	Severe dom radios and elec equip	Severe dom hwy and RR brgs	Severe dam floot brgs	2d-degree burns			1 PSI over-pressure	Induced Contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr rodius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350				0			5,500	2,425	725	7,600			0–15				0–950	
1,300				100			5,525	2,450	825	7,575		0	0–20			0	0–1,050	
1,250				250			5,525	2,475	900	7,550		0–5	0–25			0–50	0–1,100	
1,200				400		0	5,550	2,500	950	7,500		0–5	0–30			0–400	0–1,150	
1,150				525		1,550	5,550	2,525	1,025	7,475		0–5	5–45			0–550	50–1,200	
1,100	0			650		1,650	5,550	2,550	1,075	7,425		0–5	5–60			0–600	350–1,250	
1,050	50			775		1,675	5,575	2,575	1,125	7,400		0–10	5–80			0–700	500–1,300	
1,000	200			875		1,675	5,575	2,600	1,175	7,350		0–10	5–120			0–800	600–1,350	
950	350			950	0	1,675	5,600	2,625	1,200	7,325	0	0–15	10–160		0	0–850	650–1,400	
900	475		0	1,050	1,175	1,675	5,600	2,625	1,250	7,275	0–5	0–20	10–220		0–50	0–900	750–1,400	
850	650		75	1,125	1,200	1,675	5,600	2,650	1,275	7,225	0–5	0–30	15–320		0–350	0–950	800–1,450	
800	950	0	200	1,175	1,225	1,675	5,625	2,650	1,300	7,175	0–5	5–40	20–450		0–450	50–1,000	850–1,450	
775	1,150	25	275	1,200	1,250	1,675	5,625	2,675	1,325	7,150	0–5	5–45	25–530		0–500	200–1,000	850–1,500	
750	1,200	75	325	1,225	1,250	1,675	5,625	2,675	1,350	7,125	0–10	5–55	30–660		0–550	300–1,050	900–1,500	
725	1,250	125	400	1,250	1,250	1,675	5,625	2,675	1,350	7,100	0–10	5–70	35–810		0–550	350–1,050	900–1,500	
700	1,300	175	450	1,275	1,275	1,675	5,625	2,700	1,375	7,075	0–10	5–90	40–990		0–600	400–1,050	950–1,500	
675	1,325	225	475	1,300	1,275	1,675	5,625	2,700	1,375	7,050	0–15	5–110	50–1,230		0–600	450–1,100	950–1,550	
650	1,350	275	525	1,325	1,275	1,675	5,625	2,700	1,400	7,025	0–15	10–130	65–1,560		0–650	500–1,100	950–1,550	
625	1,375	325	575	1,325	1,275	1,675	5,625	2,700	1,400	7,000	0–20	10–160	80–1,920		0–700	500–1,100	1,000–1,550	
600	1,400	350	600	1,350	1,275	1,675	5,650	2,725	1,425	6,975	0–25	10–200	100–2,400		0–700	550–1,100	1,000–1,550	
575	1,425	400	625	1,375	1,275	1,675	5,650	2,725	1,425	6,950	0–30	10–245	120–2,940		0–700	600–1,150	1,000–1,550	
550	1,450	450	650	1,400	1,300	1,675	5,650	2,725	1,425	6,925	5–35	15–310	150–3,720		50–750	600–1,150	1,050–1,600	
525	1,475	500	675	1,425	1,300	1,675	5,650	2,725	1,450	6,875	5–50	20–410	200–4,920	0	100–750	650–1,150	1,050–1,600	0
500	1,500	550	700	1,450	1,300	1,675	5,650	2,725	1,450	6,850	5–55	20–500	240–6,000	0–5	250–800	650–1,150	1,050–1,600	0–50
475	1,525	600	725	1,450	1,300	1,675	5,650	2,750	1,450	6,825	5–85	30–750	360–9,000	0–5	300–800	650–1,150	1,050–1,600	0–150
450	1,550	650	750	1,475	1,300	1,675	5,650	2,750	1,475	6,800	5–105	40–950	460–11,400	0–5	350–800	700–1,150	1,100–1,600	0–250
425	1,575	700	775	1,500	1,300	1,675	5,650	2,750	1,475	6,775	10–140	50–1,250	600–15,000	0–5	350–800	700–1,200	1,100–1,600	0–300
400	1,600	775	800	1,525	1,325	1,675	5,650	2,750	1,475	6,750	10–190	70–1,650	800–19,800	0–10	400–850	700–1,200	1,100–1,650	0–300
375	1,600	850	800	1,550	1,325	1,650	5,650	2,750	1,500	6,700	10–240	90–2,150	1,040–25,800	0–10	450–850	750–1,200	1,100–1,650	0–350
350	1,625	900	825	1,550	1,325	1,650	5,650	2,750	1,500	6,675	15–300	110–2,650	1,280–31,800	0–10	450–850	750–1,250	1,100–1,650	0–400
325	1,650	925	850	1,575	1,325	1,650	5,500	2,700	1,500	6,650	15–370	140–3,300	1,600–39,600	0–10	450–850	750–1,250	1,150–1,650	0–400
300	1,650	950	850	1,575	1,350	1,650	5,325	2,625	1,450	6,625	20–430	160–3,900	1,880–46,800	0–15	500–850	750–1,250	1,150–1,650	0–400
275	1,650	950	875	1,600	1,350	1,650	5,150	2,525	1,400	6,575	25–520	190–4,700	2,260–56,400	0–15	500–900	800–1,250	1,150–1,650	0–450
250	1,650	950	900	1,600	1,350	1,650	4,950	2,450	1,375	6,550	25–610	220–5,500	2,640–66,000	0–15	500–900	800–1,250	1,150–1,650	0–450
225	1,650	975	900	1,600	1,375	1,650	4,775	2,350	1,325	6,525	30–720	260–6,500	3,120–78,000	0–20	550–900	800–1,250	1,150–1,650	0–450
200	1,625	975	925	1,600	1,375	1,650	4,600	2,275	1,275	6,475	40–990	360–9,000	4,320–108,000	0–25	550–900	800–1,250	1,150–1,650	0–500
175	1,625	975	925	1,600	1,375	1,625	4,400	2,175	1,225	6,450	50–1,210	440–11,000	5,280–132,000	0–30	550–900	800–1,250	1,150–1,650	0–500
150	1,600	975	925	1,575	1,350	1,600	4,225	2,100	1,175	6,400	65–1,540	560–14,000	6,720–168,000	5–40	550–900	800–1,250	1,150–1,650	50–500
125	1,575	975	900	1,550	1,325	1,575	4,025	2,025	1,150	6,375								
100	1,525	950	850	1,500	1,300	1,525	3,850	1,925	1,100	6,350	FALLOUT GOVERNS							
75	1,450	925	825	1,475	1,250	1,475	3,675	1,850	1,050	6,300								
50	1,350	875	750	1,400	1,175	1,425	3,475	1,750	1,000	6,275								
25	1,225	825	675	1,325	1,100	1,375	3,300	1,675	950	6,225								
0	1,100	750	600	1,250	1,075	1,325	3,100	1,575	925	6,200								

Figure 5.6e continued.

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[1] Large Free Rocket.

CONTINGENT EFFECTS Tables
Large Free Rocket

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.
Impact burst not tabulated, fallout governs.

Yield KT	HOB	Estimated radii in meters of 2 rad/hr contour of induced radiation, one hour after burst.				Estimated induced radiation intensity, one hour after burst, at GZ. In rad/hr.			
		Soil type I (Liberia, Africa)	Soil type II (Nevada desert)	Soil type III (lava clay, Hawaii)	Soil type IV (beach sand, Pensacola, Fla)	Soil type I	Soil type II	Soil type III	Soil type IV
DELTA/5	Low	200–550	450–800	700–1,150	0–150	5–125	50–1,140	540–13,500	0–5
	High	0–550	400–800	700–1,150	0	0–35	15–325	160–3,900	0
ECHO/10	Low	300–600	500–900	800–1,350	0–250	10–250	90–2,250	1,080–27,000	0–10
	High	150–550	450–900	800–1,350	0	5–55	20–470	230–5,640	0
FOXTROT/20	Low	350–750	600–1,000	900–1,400	0–300	20–410	150–3,700	1,780–44,000	0–10
	High	150–700	500–950	850–1,400	0	5–75	30–660	320–7,920	0
GOLF/50	Low	450–800	700–1,150	1,050–1,550	0–400	15–310	110–2,750	1,320–33,000	0–10
	High	250–700	550–1,100	1,000–1,500	0–50	5–55	20–475	230–5,700	0–5
HOTEL/100	Low	550–900	800–1,250	1,150–1,650	0–500	40–990	360–9,000	4,320–108,000	0–25
	High	100–750	650–1,150	1,050–1,650	0	5–50	20–410	200–4,920	0

NOTE: For description of chemical composition and effects of variations in chemical composition in soil types, see FM 101-31-1, app III, annex F.

Figure 5.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	OBSTACLES TO MOVEMENT							CASUALTIES TO EXPOSED PERSONNEL		
	Foot and wheeled vehicle movement				Tracked vehicle movement					
	Type I	Type II	Type III	Type IV	Type I	Types II, IVa(d)	Types III, IVa(f)	Type I	Types II, IVa(d)	Types III, IVa(f)
DELTA/5	600	800	900	1,400	600	800	900	400	600	600
ECHO/10	750	1,000	1,100	1,900	750	1,000	1,100	600	800	900
FOXTROT/20	1,050	1,300	1,500	2,400	1,050	1,300	1,500	750	1,000	1,150
GOLF/50	1,650	2,100	2,500	3,900	1,650	2,100	2,100	1,200	1,550	1,700
HOTEL/100	2,000	2,600	3,100	5,000	2,000	2,600	3,100	1,700	2,000	2,250

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 5.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	AIRCRAFT SAFETY RADII—meters (See note 2.)		
	Light fixed wing	Recon and obsn hel	Transport and util hel
DELTA/5	9,000	9,000	7,000
ECHO/10	10,000	10,000	9,000
FOXTROT/20	13,000	13,000	11,000
GOLF/50	17,000	17,000	15,000
HOTEL/100	22,000	21,000	18,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of safety.

Figure 5.7c.

FIRE AREAS (See note.)

Yield KT	HOB	Expected radii for ignition of wildland fuels during fire season—meters							
		Dry climate (25 percent relative humidity)				Damp climate (75 percent relative humidity)			
		Class I	Class II	Class III	Class IV	Class I	Class II	Class III	Class IV
DELTA/5	Air	2,000	1,800	1,700	1,400	1,800	1,800	1,500	1,100
	Impact	1,200	1,100	1,000	800	1,100	1,100	900	700
ECHO/10	Air	2,600	2,400	2,200	1,800	2,400	2,400	2,100	1,500
	Impact	1,500	1,400	1,300	1,100	1,400	1,400	1,200	900
FOXTROT/20	Air	3,400	3,200	2,900	2,400	3,200	3,200	2,700	2,000
	Impact	2,000	1,900	1,700	1,400	1,900	1,900	1,500	1,200
GOLF/50	Air	4,900	4,500	4,100	3,300	4,500	4,500	3,800	2,900
	Impact	2,800	2,600	2,300	2,000	2,600	2,600	2,200	1,600
HOTEL/100	Air	6,400	5,900	5,400	4,400	5,900	5,900	4,800	3,700
	Impact	3,500	3,200	3,000	2,500	3,200	3,200	2,800	2,100

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 5.7d.

CRATER DIMENSIONS (See note.)

Yield KT	Approx crater dimensions for various soil types—meters							
	Hard rock (granite and sandstone)		Soft rock (dry soil or soft rock)		Saturated soil (water slowly fills crater)		Saturated soil (water rapidly fills crater)	
	Radius	Depth	Radius	Depth	Radius	Depth	Radius	Depth
DELTA/5	27	8	34	10	50	15	67	7
ECHO/10	34	10	42	12	63	18	84	8
FOXTROT/20	43	11	53	14	80	21	106	10
GOLF/50	58	14	72	17	108	26	144	12
HOTEL/100	73	17	91	21	136	31	182	15

NOTE: Based on contact surface burst, for more detailed analysis, see engineer element.

Figure 5.7e.

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TACTICAL SYSTEM ACCURACY DATA
Large Free Rocket

All distances in meters

Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)	Range	Equivalent CEP[1]	Probable errors			Offset distance (d_o)
		PE_R	PE_d	PE_h				PE_R	PE_d	PE_h	
7,000	97	35	70	35	190	24,000	332	120	240	120	650
8,000	111	40	80	40	220	25,000	345	125	250	125	675
9,000	125	45	90	45	245	26,000	359	130	260	130	705
10,000	138	50	100	50	270	27,000	373	135	270	135	730
11,000	152	55	110	55	300	28,000	387	140	280	140	760
12,000	166	60	120	60	325	29,000	401	145	290	145	785
13,000	180	65	130	65	355	30,000	414	150	300	150	810
14,000	194	70	140	70	380	31,000	428	155	310	155	840
15,000	207	75	150	75	405	32,000	442	160	320	160	865
16,000	221	80	160	80	435	33,000	456	165	330	165	895
17,000	235	85	170	85	460	34,000	470	170	340	170	920
18,000	249	90	180	90	490	35,000	483	175	350	175	945
19,000	263	95	190	95	515	36,000	497	180	360	180	975
20,000	276	100	200	100	540	37,000	511	185	370	185	1,000
21,000	290	105	210	105	570	38,000	525	190	380	190	1,030
22,000	304	110	220	110	595	39,000	539	195	390	195	1,055
23,000	318	115	230	115	625	40,000	552	200	400	200	1,080

[1]Equivalent CEP= $1.2345\ (PE_R^2 + PE_d^2)^{1/2}$.

Figure 5.8.

[1]Large Free Rocket.

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CHAPTER 6
LIGHT GUIDED MISSILE

6.1 GENERAL

a. Orientation. This chapter contains employment data for the light guided missile with its associated warhead sections fired from a mobile launcher.

b. Weapon characteristics.

(1) *Yield.* The warhead sections for the light guided missile have yields of Alfa/0.5 KT, Bravo/1 KT, Charlie/2 KT, Delta/5 KT, Echo/10 KT, and Foxtrot/20 KT.

(2) *Fuzing.*

(*a*) The fuzing for the light guided missile provides airburst and impact fuzing options. The airburst option is radar-fuzed and can be set for either high or low airburst; these are the only heights of burst available. When the fuze is set for an airburst, the system provides for an option of either contact backup or contact preclusion.

(*b*) The fuzes are preset at the following heights of burst:

Warhead section	*HOB option*	*HOB (meters)*	*PE_h (meters)*
Alfa/0.5 KT	low	129	30
	high	189	
Bravo/1 KT	low	135	30
	high	210	
Charlie/2 KT	low	143	30
	high	238	
Delta/5 KT	low	157	30
	high	285	
Echo/10 KT	low	170	30
	high	332	
Foxtrot/20 KT	low	187	30
	high	391	

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the light guided missile are 10,000 meters and 50,000 meters.

(2) *Tactical system accuracy.* The tactical system errors for the light guided missile are independent of range. A circular error probable (CEP) of 100 meters has been used in the computation of the weapon selection tables. The vertical probable error (PE_h) is 30 meters. LGM 1

(3) *Unit carrying capacity.* A light guided missile unit can draw, transport, and store at any one time a total of 12 complete rounds per battalion.

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are considered to be applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

Situation	*Time (minutes)*	*Remarks*
I[1]	30	For situation I, add 20 minutes if warhead section must be removed and a new warhead section with required yield mated to missile.
II[2]	10	

[1]Situation I (high readiness)—the complete round and launcher are in a firing position and survey is completed. Preliminary firing data for a specific target are not available. Prefire checkouts which can be performed prior to the receipt of a fire mission have been completed. (May be used to engage targets of opportunity.)

[2]Situation II (maximum readiness)—firing data for a specific target have been computed and applied to the weapon system. The unit is awaiting an order to fire. (Typical of readiness to engage on-call target).

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. For an airburst fuzing option, the fire mission to the unit includes the radar height of burst (HOB) setting, high or low; it also includes whether contact backup or contact preclusion is desired. When contact backup is chosen, a fallout prediction is made. When an impact fuzing option is selected, the fire mission specifies HOB impact.

[1]Light Guided Missile.

EXPOSED Personnel Targets
Light Guided Missile

Yield	HOB option (HOB-meters)	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)								(meters)		
KT	(See note)	(meters)	200	300	400	500	600	700	800	900	400	600	800	1,000	1,200	1,400	1,600	1,800	Prompt	Delayed	(meters)
.5	High (189)	1,700	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	350	625	185
	Low (129)	1,700	.9/.9	.8/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	375	650	(all
	Impact	*1,700	.9/.9	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	425	675	yields)
			Target radius (meters)								Target radius (meters)										
			400	600	800	1,000	1,200	1,400	1,600		800	1,000	1,200	1,400	1,600	1,800	2,000	2,200			
1	High (210)	1,900	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		500	750	
	Low (135)	1,900	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	750	
	Impact	*1,900	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.7/.8	.5/.6	.4/.4	.3/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	775	
			Target radius (meters)								Target radius (meters)										
			400	600	800	1,000	1,200	1,400	1,600	1,800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400			
2	High (238)	2,400	.9/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	550	850	
	Low (143)	2,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	575	875	
	Impact	*2,000	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.7	.5/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	625	900	
			Target radius (meters)								Target radius (meters)										
			600	800	1,000	1,200	1,400	1,600	1,800	2,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600			
5	High (285)	3,400	.8/.9	.6/.8	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	725	975	
	Low (157)	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	775	1,025	
	Impact	*2,300	.9/.9	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	800	1,050	
			Target radius (meters)								Target radius (meters)										
			800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	800	1,200	1,600	2,000	2,400	2,800	3,200				
10	High (332)	4,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		875	1,100	
	Low (170)	4,300	.8/.9	.6/.7	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		875	1,150	
	Impact	*2,800	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		900	1,175	
			Target radius (meters)								Target radius (meters)										
			1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600			
20	High (391)	6,100	.7/.8	.6/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		1,150	1,175	
	Low (187)	6,100	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,100	1,225	
	Impact	*3,600	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst –Precludes fallout.
Impact burst –Produces fallout.

*Initial effects only. Fallout governs.

Figure 6.1.

Yield KT	HOB option (HOB-meters) (See note)	Minimum safe distance (negligible risk, Unit Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o (meters)
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
			100	200	300	400	500	600	700	800	500	600	700	800	900	1,000	1,100	1,200	Prompt	Delayed	
.5	High (189)	1,700	.6/.9	.4/.7	.3/.5	.1/.3	.1/.2	.0/.2	.0/.1		.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	175	425	185 (all yields)
	Low (129)	1,700	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	225	475	
	Impact	*1,700	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	300	500	
			Target radius (meters)								Target radius (meters)										
			300	400	500	600	700	800	900	1,000	400	600	800	1,000	1,200	1,400	1,600				
1	High (210)	1,900	.7/.8	.5/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		300	525	
	Low (135)	1,900	.8/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.9/.9	.7/.8	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		350	550	
	Impact	*1,900	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1		400	600	
			Target radius (meters)								Target radius (meters)										
			300	400	500	600	700	800	900	1,000	600	800	1,000	1,200	1,400	1,600	1,800	2,000			
2	High (238)	2,400	.8/.9	.6/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2		350	625	
	Low (143)	2,400	.8/.9	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		375	650	
	Impact	*2,000	.9/.9	.8/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.2	.1/.1	475	675	
			Target radius (meters)								Target radius (meters)										
			400	600	800	1,000	1,200	1,400	1,600		800	1,000	1,200	1,400	1,600	1,800	2,000	2,200			
5	High (285)	3,400	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	
	Low (157)	3,400	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1		.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	575	800	
	Impact	*2,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2		.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	625	825	
			Target radius (meters)								Target radius (meters)										
			600	800	1,000	1,200	1,400	1,600	1,800	2,000	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400			
10	High (332)	4,300	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	600	825	
	Low (170)	4,300	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		.6/.8	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	675	900	
	Impact	*2,800	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	700	925	
			Target radius (meters)								Target radius (meters)										
			800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	800	1,200	1,600	2,000	2,400	2,800					
20	High (391)	6,100	.6/.7	.4/.5	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1		.8/.9	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1			675	925	
	Low (187)	6,100	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			750	1,000	
	Impact	*3,600	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.9/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			800	1,025	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 6.2.

LGM 1

[1]Light Guided Missile.

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Yield KT	HOB option (HOB–meters) (See note)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																		Offset distance d_o (meters)
			WHEELED VEHICLES									TANKS AND ARTILLERY									
			Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
			50	100	150	200	250	300	350			50	100	150	200	250					
.5	High (189)	1,700	.0/.1								0	.0/.0								0	185 (all yields)
	Low (129)	1,700	.0/.7	.0/.6	.0/.5	.0/.3	.0/.2	.0/.2	.0/.1		0	.0/.2	.0/.1							0	
	Impact	*1,700	.1/.6	.2/.6	.2/.5	.2/.4	.2/.3	.1/.2	.1/.1		125	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				100	
			Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
			100	150	200	250	300	350	400	450		50	100	150	200	250	300	350			
	High (210)	1,900	.0/.3	.0/.2	.0/.2	.0/.1					0	.0/.0								0	
1	Low (135)	1,900	.3/.7	.2/.7	.1/.6	.1/.5	.0/.4	.0/.3	.0/.2	.0/.2	75	.0/.2	.0/.1							0	
	Impact	*1,900	.4/.8	.4/.7	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	175	.0/.5	.1/.5	.1/.4	.2/.3	.1/.2	.1/.2	.1/.1		125	
			Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
			100	200	300	400	500	600	700	800		50	100	150	200	250	300	350	400		
	High (238)	2,400	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				0	.0/.0								0	
2	Low (143)	2,400	.8/.9	.7/.9	.5/.7	.4/.5	.2/.4	.1/.3	.1/.2	.1/.1	250	.0/.5	.0/.2	.0/.1						25	
	Impact	*2,000	.7/.9	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		225	.3/.7	.3/.7	.3/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	150	
			Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
			300	400	500	600	700	800	900	1,000		150	200	250	300	350	400	450	500		
	High (285)	3,400	.2/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1		125	.0/.1								0	
5	Low (157)	3,400	.9/.9	.7/.9	.6/.7	.4/.6	.3/.4	.2/.4	.2/.3	.1/.2	425	.3/.7	.3/.6	.2/.5	.1/.4	.1/.4	.0/.3	.0/.2	.0/.2	125	LGM 1
	Impact	*2,300	.6/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1		325	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	225	
			Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
			400	600	800	1,000	1,200	1,400	1,600	1,800		200	300	400	500	600	700	800	900		
	High (332)	4,300	.5/.8	.2/.6	.1/.4	.0/.2	.0/.2	.0/.1			275	.0/.1								0	
10	Low (170)	4,300	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	600	.7/.9	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1	225	
	Impact	*2,800	.7/.8	.4/.5	.2/.3	.1/.2	.1/.1				450	.7/.9	.6/.7	.4/.5	.3/.3	.2/.3	.1/.2	.1/.1		300	
			Target radius (meters)								Prob min R_D (meters)	Target radius (meters)								Prob min R_D (meters)	
			600	800	1,000	1,200	1,400	1,600	1,800	2,000		300	400	500	600	700	800	900	1,000		
	High (391)	6,100	.8/.9	.5/.7	.3/.5	.2/.3	.1/.2	.1/.2	.1/.2	.0/.1	625	.0/.2	.0/.1							25	
20	Low (187)	6,100	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	825	.8/.9	.7/.9	.5/.7	.4/.6	.3/.4	.2/.4	.1/.3	.1/.2	375	
	Impact	*3,600	.7/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1			575	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	400	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

Figure 6.3.

*Initial effects only. Fallout governs.

[1]Light Guided Missile.

Troop Safety Distances—Meters
Light Guided Missile

Range	*Yield*	*Height of burst option*	*Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown*								
			Unwarned Exposed			*Warned Exposed*			*Warned Protected*		
			NEG Risk	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*
All ranges from 10,000 through 50,000 meters	ALFA/ .5 KT	High	1,700	1,500	1,200	1,700	1,500	1,200	1,400	1,200	1,000
		Low	1,700	1,500	1,200	1,700	1,500	1,200	1,400	1,200	1,000
		Impact[1]	1,700	1,500	1,200	1,700	1,500	1,200	1,400	1,200	1,000
	BRAVO/ 1 KT	High	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
		Low	1,900	1,600	1,400	1,900	1,600	1,400	1,600	1,400	1,200
		Impact[1]	1,900	1,600	1,400	2,000	1,600	1,400	1,600	1,500	1,200
	CHARLIE/ 2 KT	High	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,400	1,200
		Low	2,400	1,800	1,500	2,000	1,700	1,500	1,700	1,500	1,200
		Impact[1]	2,000	1,700	1,500	2,000	1,700	1,500	1,700	1,500	1,200
	DELTA/ 5 KT	High	3,400	2,600	2,200	2,300	1,900	1,600	1,800	1,600	1,300
		Low	3,400	2,600	2,200	2,300	1,900	1,600	1,900	1,600	1,300
		Impact[1]	2,300	1,900	1,600	2,300	1,900	1,600	1,900	1,600	1,400
	ECHO/ 10 KT	High	4,300	3,400	3,200	2,900	2,000	1,700	2,000	1,700	1,400
		Low	4,300	3,400	3,200	2,900	2,100	1,800	2,000	1,700	1,400
		Impact[1]	2,800	2,100	1,800	2,400	2,100	1,800	2,000	1,700	1,500
	FOXTROT/ 20 KT	High	6,100	4,300	3,700	3,800	2,500	2,000	2,400	1,800	1,500
		Low	6,100	4,300	3,700	3,800	2,500	2,100	2,200	1,900	1,600
		Impact[1]	3,600	2,700	2,300	2,500	2,200	1,900	2,100	1,900	1,600

NOTE: The troop safety distances include the safety radius for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly disposition. See figure 6.5 for special friendly troop orientations.

[1]Initial effects only. Fallout governs.

Figure 6.4.

SUPPLEMENTARY TROOP SAFETY Tables
Light Guided Missile

The troop aafety distances in figure 6.4 are based on the friendly troop orientation ahown in figure 1 below. The circular delivery pattern of the light guided missile may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ- Desired ground zero.
R_S – Safety rodius.
d_b – Buffer distonce.
-Friendly troops.
Direction of fire.

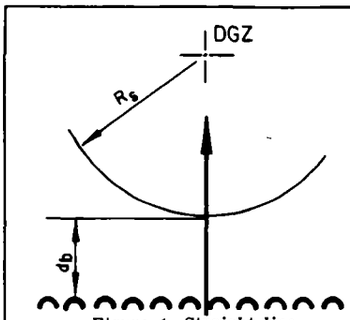

Figure 1. Straight line, perpendicular delivery.

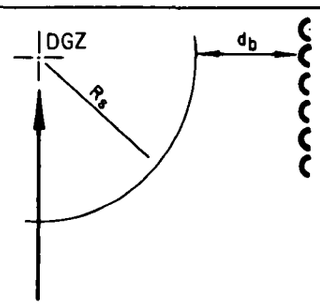

Figure 2. Straight line, parallel delivery.

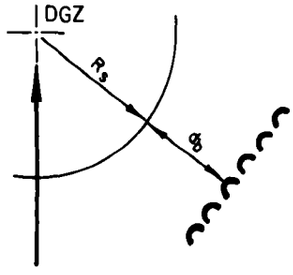

Figure 3. Straight line, 45° delivery.

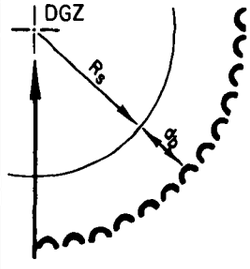

Figure 4. Quarter circle.

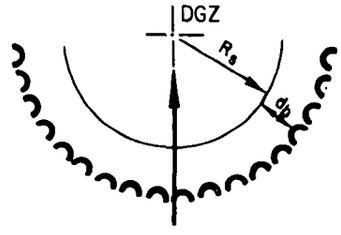

Figure 5. Half circle.

LGM 1

When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figure 6.4 must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

All Height of Burst Options–All Yields				
Range (meters)	*Straight line, parallel delivery (fig 2)*	*Straight line, 45° delivery (fig 3)*	*Quarter circle (fig 4)*	*Half circle (fig 5)*
All ranges	0	0	+100	+100

Figure 6.5.

[1]Light Guided Missile.

CASUALTY and DAMAGE Tables
Light Guided Missile
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shetler		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
675		0										0	1,300	1,000	675	1,300	1,000	675	1,000	725	325
650		125				0						150	1,325	1,025	700	1,325	1,025	700	1,025	750	375
625		225				150				0		225	1,325	1,050	725	1,325	1,050	725	1,050	775	425
600		275				225				100		275	1,350	1,050	750	1,350	1,050	750	1,050	775	450
575		325				275				200		325	1,350	1,075	775	1,350	1,075	775	1,075	800	500
550		375				325				250		375	1,350	1,075	800	1,350	1,075	800	1,075	825	525
525		400				375				300		400	1,375	1,100	800	1,375	1,100	800	1,100	850	550
500		425		0		400				350		450	1,375	1,100	825	1,375	1,100	825	1,100	850	575
475		450		150		425				375	0	475	1,375	1,125	825	1,375	1,125	825	1,125	875	600
450		475		225	0	450				400	300	500	1,400	1,125	850	1,400	1,125	850	1,125	875	600
425	0	500		275	150	475			0	425	375	500	1,400	1,125	850	1,400	1,125	850	1,125	900	625
400	150	525		300	200	500		0	150	450	450	525	1,400	1,150	875	1,400	1,150	875	1,150	900	650
375	200	550		325	250	525		50	200	475	575	575	1,425	1,150	875	1,425	1,150	875	1,150	925	650
350	250	550		350	275	525		150	250	500	750	750	1,425	1,150	900	1,425	1,150	900	1,150	925	675
325	275	575		375	300	550		200	275	525	800	800	1,425	1,175	900	1,425	1,175	900	1,175	950	700
300	300	600	0	400	325	575		225	300	525	800	800	1,425	1,175	900	1,425	1,175	900	1,175	950	700
275	325	600	125	425	350	575		275	325	550	800	800	1,450	1,175	925	1,450	1,175	925	1,175	950	700
250	350	600	175	425	375	600	0	275	350	550	775	775	1,450	1,175	925	1,450	1,175	925	1,175	950	725
225	350	625	200	450	400	600	75	300	400	575	725	725	1,450	1,200	925	1,450	1,200	925	1,200	975	725
200	375	625	225	450	400	600	125	325	425	575	700	700	1,450	1,200	950	1,450	1,200	950	1,200	975	725
175	400	650	250	475	425	625	175	350	425	575	650	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
150	400	650	250	475	425	625	200	350	400	600	625	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
125	400	650	275	475	425	625	200	350	400	600	600	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
100	425	650	275	500	450	625	225	375	400	600	575	650	1,450	1,200	950	1,450	1,200	950	1,200	975	750
75	425	650	300	500	450	625	225	375	425	600	550	650	1,475	1,200	950	1,475	1,200	950	1,200	975	750
50	425	675	300	500	450	650	225	375	425	600	550	650	1,475	1,200	950	1,475	1,200	950	1,200	975	750
25	425	675	300	500	450	650	250	375	425	600	525	675	1,475	1,200	950	1,475	1,200	950	1,200	975	750
0	425	675	300	500	450	650	250	375	425	600	525	675	1,475	1,200	950	1,475	1,200	950	1,200	975	750

HOB_{fs} = 24 m

Low HOB_{min} = 42 m

High HOB_{min} = 96 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 6.6a.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dom wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam ltwg and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI Over-pressure	Induced contominotion							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at G2 (Rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
675										1,225			0–10				0–550	
650										1,250			0–10				0–550	
625										1,275			0–10				0–600	
600										1,275			0–15				0–600	
575										1,300		0	0–15			0	0–650	
550							0			1,325		0–5	0–20			0–50	0–650	
525							125			1,325		0–5	0–25			0–100	0–650	
500							200			1,325		0–5	0–30			0–250	0–700	
475							250			1,325		0–5	0–45			0–300	0–750	
450							300			1,350		0–5	5–60			0–350	50–750	
425							325			1,350		0–10	5–75			0–350	150–750	
400							375			1,350		0–10	5–100			0–400	200–750	
375							400			1,350	0	0–15	10–130		0	0–450	250–800	
350							400			1,350	0–5	0–15	10–160		0–50	0–450	300–800	
325							425	0		1,350	0–5	0–20	10–200		0–150	0–450	350–800	
300							450	75		1,325	0–5	0–20	10–240		0–200	0–500	350–800	
275							475	150		1,325	0–5	0–25	15–290		0–250	0–500	400–850	
250							475	175		1,300	0–5	0–30	15–330		0–250	0–500	400–850	
225				0			500	225		1,300	0–5	0–35	20–390		0–300	0–550	400–850	
200	0			50			500	225		1,275	0–5	0–45	25–540		0–300	0–550	450–850	
175	25			100			500	250		1,250	0–10	0–55	30–660		0–350	0–550	450–850	
150	75	0	0	125		0	525	275	0	1,250	0–10	5–70	35–840		0–350	50–550	450–850	
125	150	25	50	150		175	525	275	50	1,225	0–10	5–100	45–1,150		0–350	100–550	450–850	
100	175	50	75	175		200	525	300	100	1,200	0–15	5–120	55–1,350		0–350	150–550	450–850	
75	200	75	100	175	0	200	525	300	100	1,150	0–20	10–145	70–1,750		0–350	150–550	450–850	
50	200	100	100	200	175	200	550	300	125	1,125	0–20	10–175	85–2,100		0–350	150–550	450–850	
25	200	125	100	200	150	175	450	250	125	1,100	0–25	10–250	120–2,900	0	0–350	150–550	450–850	0
0	125	100	75	150	100	125	325	150	75	1,050	FALLOUT GOVERNS							

Figure 6.6a continued.

LGM 1

[1]Light Guided Missile.

CASUALTY and DAMAGE Tables
Light Guided Missile
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
825													1,450	1,125	850	1,450	1,125	850	1,075	850	475
800		0											1,475	1,150	875	1,475	1,150	875	1,100	875	525
775		125										0	1,475	1,150	900	1,475	1,150	900	1,100	900	550
750		225				0						150	1,500	1,175	925	1,500	1,175	925	1,125	925	600
725		300				125				0		250	1,500	1,200	950	1,500	1,200	950	1,150	950	625
700		350				225				100		300	1,525	1,200	950	1,525	1,200	950	1,150	950	650
675		400				300				200		350	1,525	1,225	975	1,525	1,225	975	1,175	975	675
650		450				350				275		400	1,550	1,225	1,000	1,550	1,225	1,000	1,200	1,000	700
625		475				400				325		450	1,550	1,250	1,000	1,550	1,250	1,000	1,200	1,000	725
600		500		0		425				375		475	1,550	1,250	1,025	1,550	1,250	1,025	1,225	1,025	750
575	0	550		125		450				400	0	500	1,575	1,275	1,050	1,575	1,275	1,050	1,225	1,050	775
550	125	550		225	0	500				450	325	525	1,575	1,275	1,050	1,575	1,275	1,050	1,250	1,050	800
525	200	575		275	75	525			0	475	400	550	1,575	1,300	1,075	1,575	1,300	1,075	1,250	1,075	800
500	275	600		300	175	550			75	500	475	575	1,600	1,300	1,075	1,600	1,300	1,075	1,250	1,075	825
475	300	625		350	225	550		0	175	525	550	600	1,600	1,300	1,100	1,600	1,300	1,100	1,275	1,100	825
450	350	650		375	275	575		50	225	550	600	625	1,600	1,325	1,100	1,600	1,325	1,100	1,275	1,100	850
425	375	650	0	400	325	600		150	275	550	700	700	1,625	1,325	1,100	1,625	1,325	1,100	1,300	1,100	850
400	400	675	100	425	350	625		225	300	575	950	950	1,625	1,325	1,125	1,625	1,325	1,125	1,300	1,125	875
875	425	700	175	450	375	625		250	350	600	975	975	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	875
350	450	700	225	475	400	650		300	375	600	1,000	1,000	1,625	1,350	1,125	1,625	1,350	1,125	1,300	1,125	900
325	475	725	250	500	425	650		325	400	625	1,000	1,000	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
300	475	725	275	500	425	675	0	350	550	625	975	975	1,650	1,350	1,150	1,650	1,350	1,150	1,325	1,150	900
275	500	725	300	525	450	675	125	375	575	650	950	950	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
250	500	750	325	525	475	700	175	375	575	650	925	925	1,650	1,375	1,150	1,650	1,375	1,150	1,325	1,150	925
225	525	750	350	550	475	700	200	400	575	675	875	875	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	925
200	525	750	350	550	500	700	225	400	575	675	850	850	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
175	550	775	375	575	500	725	250	425	525	675	800	800	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
150	550	775	375	575	500	725	250	425	500	700	775	775	1,650	1,375	1,175	1,650	1,375	1,175	1,350	1,175	950
125	550	775	400	575	525	725	275	450	500	700	750	750	1,675	1,375	1,175	1,675	1,375	1,175	1,350	1,175	950
100	550	775	400	575	525	725	275	450	500	700	725	750	1,675	1,400	1,175	1,675	1,400	1,175	1,350	1,175	950
75	550	775	400	575	525	725	300	450	500	700	700	750	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,175	950
50	550	775	400	600	525	725	300	450	500	700	675	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
25	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950
0	550	775	400	600	525	725	300	450	500	700	650	775	1,675	1,400	1,200	1,675	1,400	1,200	1,350	1,200	950

HOB_{fs} = 30 m

Low HOB_{min} = 53 m

High HOB_{min} = 120 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 6.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float bridge	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
825										1,550			0–5				0–500	
800										1,575			0–5				0–550	
775										1,600			0–10				0–550	
750							0			1,625			0–10				0–600	
725							200			1,650			0–10				0–650	
700							275			1,650			0–10				0–650	
675							325			1,675			0–15				0–700	
650							375			1,675			0–20				0–700	
625							425			1,675		0	0–20			0	0–750	
600							450			1,675		0–5	0–25			0–50	0–750	
575							475			1,700		0–5	0–30			0–200	0–800	
550							500			1,700		0–5	0–40			0–250	0–800	
525							525			1,700		0–5	0–50			0–300	0–800	
500							550			1,700		0–5	0–60			0–350	0–800	
475							575			1,700		0–10	0–90			0–400	0–850	
450							600			1,700		0–10	5–120			0–400	50–850	
425							625			1,700	0	0–15	10–150		0	0–450	150–900	
400							625			1,700	0–5	0–20	10–200		0–50	0–450	200–900	
375							650			1,675	0–5	0–25	15–260		0–150	0–500	250–900	
350							675	0		1,675	0–5	0–30	15–320		0–200	0–500	300–900	
325							675	125		1,650	0–5	0–35	20–400		0–250	0–500	350–900	
300				0			675	175		1,650	0–5	5–40	20–480		0–300	50–550	350–950	
275				25			700	200		1,625	0–10	5–50	25–580		0–300	150–550	400–950	
250				75			700	250		1,600	0–10	5–55	30–660		0–350	200–550	400–950	
225	0			125			725	250		1,600	0–10	5–65	35–780		0–350	200–600	400–950	
200	50		0	150		0	725	275	0	1,575	0–10	5–90	50–1,080		0–350	250–600	450–950	
175	150	0	25	175		250	725	300	50	1,550	0–15	5–110	60–1,320		0–400	250–600	450–950	
150	200	25	75	200		250	725	300	100	1,525	0–15	10–140	70–1,680		0–400	300–600	450–950	
125	225	50	100	225		250	750	325	125	1,500	0–20	10–185	90–2,220		0–400	300–600	450–950	
100	250	100	125	225	0	275	750	325	150	1,475	0–25	10–225	110–2,700		0–400	300–600	450–950	
75	250	150	125	250	225	275	750	325	175	1,450	0–35	15–290	140–3,500		0–400	300–600	450–950	
50	250	150	150	250	250	275	725	325	175	1,400	5–40	15–350	170–4,200	0	50–400	300–600	450–950	0
25	250	150	150	250	225	250	575	350	150	1,375	FALLOUT GOVERNS							
0	175	125	100	200	150	200	450	250	125	1,325								

Figure 6.6b continued.

LGM 1

[1]Light Guided Missile.

CASUALTY and DAMAGE Tables
Light Guided Missile
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
900		0											1,975	1,300	950	1,525	1,200	950	1,125	800	325
875		175										0	1,975	1,300	950	1,525	1,200	950	1,150	825	400
850		275				0						175	2,000	1,325	975	1,550	1,225	975	1,150	850	450
825		350				175				0		275	2,000	1,350	1,000	1,550	1,250	1,000	1,175	875	500
800		400				250				100		350	2,025	1,350	1,025	1,575	1,275	1,025	1,200	900	525
775		450				325				225		400	2,025	1,375	1,050	1,575	1,275	1,050	1,225	925	575
750		475				375				300		450	2,025	1,400	1,075	1,600	1,300	1,075	1,225	950	600
725		525				425				350		475	2,050	1,400	1,075	1,600	1,300	1,075	1,250	975	625
700		550		0		475				400		525	2,050	1,400	1,100	1,625	1,325	1,100	1,250	1,000	650
675		575		125		500				450	0	550	2,050	1,425	1,100	1,625	1,325	1,100	1,275	1,000	675
650		600		225		525				475	300	575	2,075	1,425	1,125	1,650	1,350	1,125	1,275	1,025	700
625	0	625		275	0	550				500	375	600	2,075	1,450	1,150	1,650	1,350	1,150	1,300	1,050	725
600	150	650		325	150	600			0	525	450	625	2,075	1,450	1,150	1,650	1,375	1,150	1,300	1,050	750
575	250	675		375	225	625			150	550	525	650	2,100	1,475	1,175	1,675	1,375	1,175	1,325	1,075	775
550	300	700		400	275	625		0	225	575	600	675	2,100	1,475	1,175	1,675	1,400	1,175	1,325	1,075	800
525	325	725		450	325	650		100	275	600	750	750	2,100	1,500	1,200	1,675	1,400	1,200	1,350	1,100	800
500	375	725		475	375	675		200	325	625	900	900	2,100	1,500	1,200	1,700	1,400	1,200	1,350	1,100	825
475	400	750	0	500	400	700		250	350	650	1,075	1,075	2,125	1,500	1,200	1,700	1,425	1,200	1,350	1,125	825
450	425	775	125	525	425	700		275	400	675	1,175	1,175	2,125	1,500	1,225	1,700	1,425	1,225	1,375	1,125	850
425	450	775	200	550	450	725		325	425	675	1,175	1,175	2,125	1,525	1,225	1,700	1,425	1,225	1,375	1,125	850
400	475	800	250	550	475	750		350	450	700	1,200	1,200	2,125	1,525	1,250	1,725	1,450	1,250	1,375	1,150	875
375	500	800	275	575	500	750	0	375	625	700	1,200	1,200	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	875
350	525	825	300	600	500	775	100	400	675	725	1,175	1,175	2,150	1,525	1,250	1,725	1,450	1,250	1,400	1,150	900
325	525	825	325	600	525	775	175	425	675	725	1,175	1,175	2,150	1,550	1,250	1,725	1,450	1,250	1,400	1,175	900
300	550	825	350	625	550	775	200	450	675	750	1,125	1,125	2,150	1,550	1,275	1,725	1,475	1,275	1,400	1,175	900
275	550	850	375	625	550	800	250	450	675	750	1,100	1,100	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
250	575	850	400	625	575	800	275	475	650	750	1,050	1,050	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,175	925
225	575	850	400	650	575	800	300	475	650	775	1,025	1,025	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	925
200	575	875	425	650	600	825	300	500	625	775	975	975	2,150	1,550	1,275	1,750	1,475	1,275	1,425	1,200	950
175	600	875	425	675	600	825	325	500	600	775	950	950	2,175	1,575	1,300	1,750	1,475	1,300	1,425	1,200	950
150	600	875	450	675	600	825	325	525	575	800	925	925	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
125	600	875	450	675	600	825	350	525	575	800	900	900	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
100	600	875	450	675	625	825	350	525	575	800	850	850	2,175	1,575	1,300	1,750	1,500	1,300	1,425	1,200	950
75	625	875	450	675	625	850	350	525	600	800	825	875	2,175	1,575	1,300	1,750	1,500	1,300	1,450	1,200	950
50	625	900	450	675	625	850	350	525	600	800	800	875	2,025	1,550	1,300	1,750	1,500	1,300	1,450	1,200	950
25	625	900	475	675	625	850	375	525	600	800	775	875	1,900	1,525	1,300	1,750	1,500	1,300	1,450	1,200	950
0	625	900	475	675	625	850	375	525	600	800	775	875	1,750	1,500	1,300	1,750	1,500	1,300	1,450	1,200	950

HOB_{fs} = 38 m

Low HOB_{min} = 67 m

High HOB_{min} = 152 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 6.6c.

23	24	25	26	27	28	27	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehicles	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brge	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
900							550			2,075			0–5				0–500	
875							575			2,100			0–10				0–600	
850							625			2,100			0–10				0–650	
825							650			2,100			0–10				0–700	
800							675			2,100			0–10				0–700	
775							700			2,125			0–15				0–750	
750							725			2,125			0–15				0–750	
725							750			2,125		0	0–20			0	0–800	
700							775			2,125		0–5	0–20			0–50	0–800	
675							800			2,150		0–5	0–25			0–200	0–850	
650							825			2,150		0–5	0–35			0–300	0–850	
625							850			2,150		0–5	0–40			0–350	0–850	
600							850			2,150		0–5	5–50			0–400	50–900	
575							875			2,150		0–5	5–60			0–400	200–900	
550							900			2,150		0–10	5–75			0–450	250–900	
525							900			2,125	0	0–10	5–100		0	0–450	300–950	
500							925			2,125	0–5	0–10	5–120		0–50	0–500	350–950	
475							925	0		2,125	0–5	0–15	10–180		0–150	0–550	400–950	
450							950	150		2,100	0–5	0–20	10–230		0–250	0–550	400–1,000	
425							950	200		2,100	0–5	0–25	15–300		0–300	0–600	450–1,000	
400							975	250		2,075	0–5	0–35	20–400		0–300	0–600	450–1,000	
375				0			975	300		2,075	0–5	0–50	20–520		0–350	0–600	500–1,000	
350				25			1,000	325		2,050	0–10	5–60	25–640		0–400	50–650	500–1,000	
325				75			1,000	350		2,025	0–10	5–70	35–800		0–400	150–650	500–1,000	
300	0			125			1,000	375		2,025	0–10	5–80	40–940		0–400	200–650	550–1,050	
275	25			175		0	1,025	375	0	2,000	0–15	5–100	50–1,140		0–450	250–650	550–1,050	
250	100		0	200		250	1,025	400	50	1,975	0–15	5–110	60–1,320		0–450	250–700	550–1,050	
225	150	0	25	250		300	1,025	425	125	1,950	0–15	10–130	70–1,560		0–450	300–700	600–1,050	
200	250	25	75	250		325	1,025	425	150	1,925	0–20	10–180	90–2,160		0–500	300–700	600–1,050	
175	275	50	100	275		325	1,025	450	175	1,900	0–25	10–220	110–2,700		0–500	350–700	600–1,050	
150	300	100	125	300		350	1,050	450	200	1,875	0–35	15–280	140–3,400		0–500	350–700	600–1,050	
125	325	125	150	300	0	350	1,050	450	225	1,850	0–40	15–370	180–4,500		0–500	350–700	600–1,050	
100	350	175	175	325	275	350	1,050	475	225	1,825	5–50	20–450	220–5,400		50–500	350–700	600–1,050	
75	350	200	175	325	300	375	1,050	475	250	1,775	5–70	25–580	280–7,000	0	100–500	350–700	600–1,050	0
50	350	200	200	325	300	375	925	425	225	1,750	5–80	30–700	340–8,400	0–5	100–500	350–700	600–1,050	0–50
25	300	200	175	325	275	350	775	350	200	1,725	FALLOUT GOVERNS							
0	225	150	125	275	250	300	625	300	150	1,675								

Figure 6.6c continued.

[1]Light Guided Missile.

CASUALTY and DAMAGE Tables
Light Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in in APC's		Personnel in l-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,050		0											3,025	2,150	1,700	1,750	1,350	875	1,225	875	350
1,025		225										0	3,025	2,150	1,700	1,750	1,350	900	1,250	900	425
1,000		325				0						175	3,025	2,150	1,725	1,775	1,375	925	1,275	925	475
975		400				150						275	3,025	2,175	1,750	1,775	1,400	950	1,300	950	525
950		450				250				0		350	3,050	2,175	1,750	1,800	1,400	1,000	1,300	975	575
925		500				350				200		425	3,050	2,200	1,775	1,800	1,425	1,000	1,325	1,000	600
900		550				400				300	0	475	3,050	2,200	1,775	1,825	1,450	1,025	1,350	1,025	650
875		575				450				350	650	650	3,075	2,225	1,800	1,825	1,450	1,050	1,350	1,050	675
850		625				500				400	750	750	3,075	2,225	1,800	1,850	1,475	1,075	1,375	1,075	700
825		650		0		550				450	850	850	3,075	2,225	1,800	1,850	1,500	1,100	1,400	1,075	725
800	0	675		200		575				500	925	925	3,100	2,250	1,825	1,875	1,500	1,100	1,400	1,100	750
775	175	700		275		600				550	975	975	3,100	2,250	1,825	1,875	1,525	1,125	1,425	1,125	800
750	275	725		350	0	650				775	1,050	1,050	3,100	2,275	1,850	1,900	1,525	1,150	1,425	1,150	800
725	325	750		400	175	675			0	600	1,150	1,150	3,100	2,275	1,850	1,900	1,550	1,150	1,550	1,150	825
700	375	775		425	250	700			150	625	1,300	1,300	3,125	2,275	1,875	1,900	1,550	1,175	1,700	1,175	850
675	425	800		475	300	725			225	650	1,500	1,500	3,125	2,275	1,875	1,925	1,550	1,200	1,725	1,175	875
650	450	825		500	350	750		0	300	675	1,600	1,600	3,125	2,300	1,875	1,925	1,575	1,200	1,725	1,200	900
625	500	850	0	525	400	750		175	350	700	1,625	1,625	3,125	2,300	1,900	1,925	1,575	1,225	1,725	1,200	925
600	525	850	150	550	450	775		250	375	725	1,650	1,650	3,125	2,300	1,900	1,950	1,600	1,225	1,725	1,225	925
575	550	875	225	575	475	800		300	425	750	1,650	1,650	3,150	2,300	1,900	1,950	1,600	1,250	1,725	1,225	950
550	575	900	300	600	500	825		350	450	775	1,625	1,625	3,150	2,325	1,900	1,950	1,600	1,250	1,750	1,250	950
525	600	900	325	625	525	825		375	525	775	1,625	1,625	3,150	2,325	1,925	1,950	1,625	1,275	1,725	1,250	975
500	625	925	375	650	550	850		425	825	825	1,600	1,600	3,150	2,325	1,925	1,975	1,625	1,275	1,700	1,275	975
475	650	925	400	675	575	875	0	450	875	875	1,550	1,550	3,150	2,325	1,925	1,975	1,625	1,275	1,675	1,275	1,000
450	650	950	425	700	600	875	100	475	925	925	1,525	1,525	3,150	2,350	1,950	1,975	1,650	1,300	1,650	1,300	1,000
425	675	950	450	700	600	875	175	500	925	925	1,475	1,475	3,175	2,350	1,950	2,000	1,650	1,300	1,625	1,300	1,025
400	700	975	475	725	625	900	225	525	925	925	1,450	1,450	3,175	2,350	1,950	2,000	1,650	1,300	1,600	1,300	1,025
375	700	975	500	725	650	900	275	525	925	925	1,425	1,425	3,175	2,350	1,950	2,000	1,650	1,325	1,575	1,300	1,050
350	725	975	500	750	650	925	300	550	900	900	1,400	1,400	3,175	2,350	1,950	2,000	1,675	1,325	1,575	1,325	1,050
325	725	1,000	525	750	675	925	325	575	875	875	1,375	1,375	3,175	2,350	1,975	2,000	1,675	1,325	1,575	1,325	1,050
300	750	1,000	550	775	675	950	350	575	850	900	1,350	1,350	3,175	2,350	1,975	2,000	1,675	1,350	1,600	1,325	1,075
275	750	1,000	550	775	700	950	375	600	850	900	1,300	1,300	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,325	1,075
250	750	1,025	575	775	700	950	400	600	825	900	1,275	1,275	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,350	1,075
225	775	1,025	575	800	700	950	400	600	800	925	1,250	1,250	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,075
200	775	1,025	600	800	725	975	425	625	800	925	1,225	1,225	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
175	775	1,025	600	800	725	975	425	625	775	925	1,200	1,200	3,200	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
150	775	1,025	600	800	725	975	425	625	750	925	1,175	1,175	3,200	2,375	2,000	2,025	1,700	1,350	1,600	1,350	1,100
125	775	1,050	600	800	725	975	450	650	750	925	1,150	1,150	3,200	2,375	2,000	2,025	1,700	1,375	1,625	1,350	1,100
100	800	1,050	625	825	750	975	450	650	725	950	1,125	1,125	3,150	2,375	1,950	2,025	1,700	1,375	1,625	1,350	1,100
75	800	1,050	625	825	750	975	450	650	700	950	1,125	1,125	2,800	2,200	1,800	2,025	1,700	1,375	1,625	1,350	1,100
50	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,550	2,025	1,650	2,025	1,700	1,375	1,625	1,375	1,100
25	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,275	1,850	1,525	2,025	1,700	1,375	1,625	1,375	1,100
0	800	1,050	625	825	750	975	450	650	725	950	1,050	1,050	2,125	1,700	1,375	2,025	1,700	1,375	1,625	1,375	1,100

HOB_{fs} = 52 m

Low HOB_{min} = 91 m

High HOB_{min} = 206 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 6.6d.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d Degree Burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,050							1,175			2,875			0–5				0–500	
1,025							1,200			2,875			0–5				0–550	
1,000							1,225			2,875			0–10				0–600	
975							1,225			2,900			0–10				0–600	
950							1,250			2,900			0–10				0–650	
925							1,275			2,900			0–10				0–700	
900							1,300			2,900			0–15				0–750	
875							1,300			2,925			0–15				0–750	
850							1,325			2,925			0–20				0–800	
825							1,350			2,925		0	0–20			0	0–800	
800							1,350			2,925		0–5	0–25			0–50	0–850	
775							1,375			2,900		0–5	0–30			0–200	0–850	
750							1,375	0		2,900		0–5	0–35			0–300	0–900	
725							1,400	75		2,900		0–5	0–45			0–350	0–900	
700							1,400	200		2,900		0–5	5–50			0–400	50–950	
675							1,425	275		2,875		0–10	5–65			0–450	200–950	
650							1,425	325		2,875		0–10	5–80			0–500	300–950	
625							1,450	375		2,850		0–10	5–100			0–500	350–1,000	
600							1,450	425		2,850		0–10	5–120			0–550	400–1,000	
575							1,475	450		2,850	0	0–15	10–150		0	0–600	400–1,000	
550							1,475	475		2,825	0–5	0–20	10–190		0–50	0–600	450–1,050	
525							1,475	500		2,825	0–5	0–25	10–250		0–200	0–650	450–1,050	
500				0			1,500	525		2,800	0–5	0–25	15–300		0–250	0–650	500–1,050	
475				50			1,500	550		2,800	0–5	0–40	20–450		0–300	0–650	550–1,050	
450				100			1,500	575		2,775	0–5	5–50	25–570		0–300	50–700	550–1,100	
425				150			1,525	600		2,750	0–10	5–70	30–750		0–350	150–700	600–1,100	
400	0			200		0	1,525	600	0	2,725	0–10	5–90	40–1,000		0–400	200–700	600–1,100	
375	50			250		400	1,525	625	125	2,725	0–15	5–110	50–1,300		0–400	250–750	600–1,100	
350	100			300		425	1,525	650	175	2,700	0–15	10–140	70–1,600		0–400	300–750	650–1,100	
325	150		0	325		425	1,550	650	225	2,675	0–20	10–165	80–1,980		0–400	350–750	650–1,100	
300	250	0	50	350		425	1,550	675	250	2,650	0–25	10–200	100–2,340		0–450	350–750	650–1,150	
275	375	25	100	375		450	1,550	675	275	2,625	0–25	10–240	120–2,820		0–500	400–800	650–1,150	
250	400	75	150	400		450	1,550	675	300	2,600	0–35	15–275	140–3,300		0–500	400–800	700–1,150	
225	425	100	175	400		450	1,550	700	325	2,575	0–35	15–325	160–3,900		0–550	400–800	700–1,150	
200	450	125	200	425		475	1,550	700	350	2,550	5–50	20–450	220–5,400		50–550	450–800	700–1,150	
175	450	175	225	450	0	475	1,575	700	350	2,525	5–60	25–550	280–6,600	0	100–550	450–800	700–1,150	0
150	475	225	225	450	400	500	1,575	725	375	2,475	5–80	30–700	340–8,400	0–5	150–550	450–800	700–1,150	0–50
125	500	275	250	475	425	500	1,575	725	375	2,450	5–100	40–940	450–11,000	0–5	200–550	450–800	700–1,150	0–100
100	500	300	250	475	425	525	1,550	725	400	2,425	5–125	50–1,140	540–13,500	0–5	200–550	450–800	700–1,150	0–150
75	500	300	275	475	425	525	1,400	650	350	2,400	10–160	60–1,450	700–17,400	0–5	200–550	450–800	700–1,150	0–150
50	475	300	275	475	400	500	1,250	575	325	2,350	FALLOUT GOVERNS							
25	450	275	250	425	350	475	1,100	500	275	2,325								
0	325	225	175	375	300	400	925	450	250	2,275								

Figure 6.6d continued.

[1]Light Guided Missile.

LGM 1

CASUALTY and DAMAGE Tables
Light Guided Missile
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		0									600	600	3,850	2,975	2,700	2,375	1,375	925	1,275	900	100
1,150		250									850	850	3,850	3,000	2,725	2,400	1,400	1,000	1,325	950	350
1,100		400				0				0	1,000	1,000	3,875	3,000	2,750	2,425	1,450	1,050	1,375	1,025	500
1,050		525				325				150	1,150	1,150	3,875	3,025	2,750	2,425	1,500	1,100	1,400	1,075	600
1,000		625				450				350	1,300	1,300	3,900	3,050	2,775	2,450	1,525	1,150	1,500	1,125	675
950		700		0		550				475	1,500	1,500	3,900	3,050	2,800	2,475	1,550	1,200	1,650	1,150	750
900	0	750		200		625				550	1,750	1,750	3,925	3,075	2,800	2,500	1,575	1,225	2,100	1,200	800
850	275	800		350	0	700			0	625	2,125	2,125	3,925	3,075	2,825	2,500	1,600	1,250	2,175	1,250	850
800	400	850		450	300	750			175	700	2,175	2,175	3,950	3,100	2,850	2,525	1,625	1,300	2,175	1,275	900
775	450	875		500	350	775			475	725	2,200	2,200	3,950	3,100	2,850	2,525	1,650	1,300	2,175	1,275	925
750	500	900		550	400	800		0	550	750	2,200	2,200	3,950	3,100	2,850	2,550	1,650	1,325	2,175	1,325	950
725	525	925	0	575	450	825		175	625	775	2,200	2,200	3,950	3,125	2,850	2,550	1,675	1,350	2,175	1,400	950
700	550	950	100	600	475	850		250	675	800	2,175	2,175	3,975	3,125	2,875	2,550	1,675	1,350	2,225	1,475	975
675	600	950	200	625	525	875		325	725	825	2,175	2,175	3,975	3,125	2,875	2,550	1,700	1,350	2,200	1,500	1,000
650	625	975	275	650	550	875		375	1,200	1,200	2,150	2,150	3,975	3,150	2,875	2,575	1,700	1,375	2,175	1,475	1,000
625	650	1,000	325	675	575	900		400	1,225	1,225	2,125	2,125	3,975	3,150	2,875	2,575	1,700	1,400	2,150	1,475	1,025
600	650	1,000	375	700	600	925		450	1,250	1,250	2,100	2,100	3,975	3,150	2,900	2,575	1,725	1,400	2,125	1,450	1,050
575	675	1,025	400	725	625	950		475	1,275	1,275	2,075	2,075	3,975	3,150	2,900	2,600	1,725	1,400	2,100	1,425	1,050
550	700	1,025	450	750	650	950	0	500	1,275	1,275	2,050	2,050	3,975	3,150	2,900	2,600	1,725	1,425	2,075	1,425	1,075
525	725	1,050	475	750	675	975	150	525	1,250	1,250	2,000	2,000	4,000	3,150	2,900	2,600	1,750	1,425	2,025	1,425	1,075
500	825	1,050	500	775	675	975	225	550	1,250	1,250	1,975	1,975	4,000	3,175	2,900	2,600	1,750	1,450	2,000	1,425	1,100
475	850	1,075	525	800	700	1,000	275	575	1,225	1,225	1,950	1,950	4,000	3,175	2,925	2,600	1,750	1,450	1,950	1,425	1,100
450	850	1,075	550	800	725	1,000	300	600	1,200	1,200	1,900	1,900	4,000	3,175	2,925	2,600	1,750	1,450	1,925	1,425	1,125
425	850	1,100	575	825	725	1,025	350	625	1,175	1,175	1,850	1,850	4,000	3,175	2,925	2,625	1,775	1,450	1,875	1,450	1,125
400	850	1,100	575	825	750	1,025	375	625	1,175	1,175	1,825	1,825	4,000	3,175	2,925	2,625	1,775	1,475	1,850	1,450	1,125
375	875	1,100	600	850	750	1,025	400	650	1,150	1,150	1,775	1,775	4,000	3,175	2,925	2,625	1,775	1,475	1,800	1,450	1,150
350	875	1,125	625	850	775	1,050	425	650	1,125	1,125	1,750	1,750	4,000	3,175	2,925	2,625	1,800	1,475	1,750	1,450	1,150
325	875	1,125	650	850	775	1,050	450	675	1,100	1,100	1,700	1,700	4,025	3,175	2,950	2,625	1,800	1,475	1,725	1,475	1,150
300	875	1,125	650	875	800	1,050	450	675	1,075	1,075	1,650	1,650	4,025	3,175	2,950	2,625	1,800	1,500	1,725	1,475	1,175
275	875	1,150	650	875	800	1,075	475	700	1,075	1,075	1,625	1,625	4,025	3,200	2,950	2,650	1,800	1,500	1,725	1,475	1,175
250	875	1,150	650	900	800	1,075	475	700	1,050	1,050	1,600	1,600	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
225	875	1,150	675	900	825	1,075	500	700	1,025	1,025	1,575	1,575	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
200	875	1,150	675	900	825	1,075	500	725	1,025	1,050	1,550	1,550	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
175	875	1,150	700	900	825	1,075	525	725	1,000	1,050	1,500	1,500	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
150	875	1,150	700	900	825	1,100	525	725	975	1,050	1,475	1,475	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
125	875	1,175	700	900	850	1,100	525	725	975	1,050	1,450	1,450	3,800	3,050	2,850	2,600	1,825	1,525	1,750	1,500	1,200
100	900	1,175	700	925	850	1,100	525	750	950	1,050	1,425	1,425	3,575	2,825	2,600	2,525	1,825	1,525	1,750	1,500	1,200
75	900	1,175	700	925	850	1,100	550	750	925	1,050	1,400	1,400	3,325	2,600	2,350	2,450	1,825	1,525	1,750	1,500	1,200
50	900	1,175	700	925	850	1,100	550	750	900	1,050	1,375	1,375	3,075	2,350	2,100	2,350	1,825	1,525	1,750	1,500	1,200
25	900	1,175	700	925	850	1,100	550	750	900	1,050	1,350	1,350	2,850	2,125	1,850	2,275	1,825	1,525	1,750	1,500	1,200
0	900	1,175	700	925	850	1,100	550	750	875	1,050	1,325	1,325	2,575	1,875	1,600	2,175	1,825	1,525	1,750	1,500	1,200

HOB_{fs} = 65 m
Low HOB_{min} = 115 m
High HOB_{min} = 259 m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 6.6e.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							1,775			3,650			0–5				0–650	
1,150							1,825			3,675			0–5				0–750	
1,100							1,850			3,675			0–10				0–800	
1,050							1,875	0		3,675			0–10				0–850	
1,000							1,900	150		3,675			0–15				0–950	
950							1,925	350		3,675		0	0–20			0	0–1,000	
900							1,950	450		3,650		0–5	0–25			0–50	0–1,050	
850							1,975	550		3,625		0–5	0–35			0–350	0–1,050	
800							2,000	625		3,600		0–5	5–45			0–450	50–1,100	
775							2,000	650		3,600		0–5	5–55			0–500	200–1,150	
750							2,025	675		3,600		0–10	5–70			0–550	300–1,150	
725							2,025	700		3,575		0–10	5–85			0–550	350–1,150	
700							2,025	725		3,575		0–10	5–100			0–600	400–1,200	
675							2,050	750		3,550		0–15	5–125			0–600	450–1,200	
650							2,050	775		3,550		0–15	10–160			0–650	500–1,200	
625				0			2,050	800		3,525	0	0–20	10–200		0	0–700	500–1,200	
600				50			2,075	800		3,525	0–5	0–20	10–240		0–50	0–700	550–1,250	
575				125			2,075	825		3,500	0–5	0–25	15–300		0–200	0–700	600–1,250	
550				175			2,075	850	0	3,475	0–5	0–35	15–380		0–250	0–750	600–1,250	
525				225			2,075	875	125	3,450	0–5	0–45	20–500		0–300	0–750	650–1,250	
500	0			275			2,100	875	200	3,450	0–10	5–50	25–600		0–350	50–800	650–1,300	
475	50			325		0	2,100	900	250	3,425	0–10	5–75	40–900		0–400	150–800	650–1,300	
450	125			375		575	2,100	900	300	3,400	0–15	5–100	50–1,140		0–400	250–800	700–1,300	
425	175		0	400		600	2,100	925	325	3,375	0–15	5–125	60–1,500		0–450	300–800	700–1,300	
400	225		25	425		600	2,125	925	375	3,350	0–20	10–170	80–1,980		0–450	300–850	700–1,300	
375	350	0	75	475		600	2,125	950	400	3,325	0–25	10–220	120–2,600		0–500	350–850	750–1,300	
350	475	25	125	475		625	2,125	950	400	3,300	0–30	15–270	140–3,200		0–500	400–850	750–1,350	
325	500	75	175	500		625	2,125	950	425	3,275	0–40	15–330	160–3,960		0–500	400–850	750–1,350	
300	550	100	200	525		625	2,125	975	450	3,250	5–45	20–390	200–4,680		50–550	400–850	750–1,350	
275	575	150	250	550		625	2,125	975	475	3,225	5–55	20–470	230–5,650	0	150–550	450–900	800–1,350	0
250	575	175	275	550		625	2,125	975	475	3,200	5–65	25–550	270–6,600	0–5	200–550	450–900	800–1,350	0–50
225	600	225	275	575	0	650	2,150	975	500	3,175	5–75	30–650	320–7,800	0–5	200–600	450–900	800–1,350	0–150
200	625	275	300	600	450	650	2,150	1,000	500	3,150	5–100	40–900	440–10,800	0–5	250–600	500–900	800–1,350	0–150
175	650	350	325	600	525	650	2,150	1,000	500	3,125	5–125	50–1,100	540–13,200	0–5	250–600	500–900	800–1,350	0–200
150	650	375	325	625	550	650	2,150	1,000	525	3,075	10–160	60–1,400	680–16,800	0–5	300–600	500–900	800–1,350	0–200
125	650	375	350	625	575	650	2,075	975	525	3,050	10–200	75–1,850	900–22,200	0–5	300–600	500–900	800–1,350	0–250
100	650	375	350	650	575	650	1,900	900	475	3,025	10–250	90–2,250	1,080–27,000	0–10	300–600	500–900	800–1,350	0–250
75	650	400	375	625	575	650	1,750	825	450	2,975	15–320	120–2,900	1,400–34,800	0–10	300–600	500–900	800–1,350	0–250
50	625	375	350	600	525	625	1,575	750	400	2,950	FALLOUT GOVERNS							
25	550	350	300	575	500	575	1,425	675	375	2,900								
0	450	300	250	500	425	500	1,250	600	325	2,875								

LGM 1

Figure 6.6e continued.

[1]Light Guded Missile.

CASUALTY and DAMAGE Tables
Light Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		400				250				0	1,600	1,600	5,725	3,850	3,275	3,350	1,950	1,375	2,050	1,075	575
1,150		525				425				250	1,750	1,750	5,725	3,875	3,300	3,375	1,975	1,425	2,475	1,125	675
1,100		625				550				425	1,950	1,950	5,750	3,875	3,325	3,400	2,000	1,450	2,700	1,150	750
1,050		700		0		625				525	2,350	2,350	5,750	3,900	3,350	3,400	2,025	1,500	2,750	1,275	825
1,000	0	775		225	0	700			0	625	2,625	2,625	5,750	3,900	3,350	3,425	2,050	1,525	2,750	1,400	875
950	300	825		400	175	775			475	700	2,675	2,675	5,775	3,925	3,375	3,425	2,075	1,550	2,750	1,650	925
900	425	875		500	350	825			625	750	2,700	2,700	5,775	3,925	3,375	3,450	2,100	1,600	2,750	1,800	975
850	525	925		575	450	875		0	800	825	2,700	2,700	5,775	3,950	3,400	3,475	2,125	1,625	2,775	1,875	1,025
800	600	975	0	650	550	925		275	1,150	1,150	2,650	2,650	5,800	3,950	3,400	3,475	2,150	1,650	2,725	1,850	1,075
775	625	1,000	200	675	575	950		350	1,450	1,450	2,650	2,650	5,800	3,950	3,425	3,475	2,150	1,650	2,700	1,850	1,075
750	650	1,025	275	700	600	975		400	1,525	1,525	2,625	2,625	5,800	3,950	3,425	3,475	2,150	1,675	2,675	1,825	1,100
725	675	1,025	325	725	625	975		450	1,550	1,550	2,575	2,575	5,800	3,975	3,425	3,500	2,175	1,675	2,650	1,800	1,125
700	700	1,050	400	750	675	1,000		475	1,550	1,550	2,525	2,525	5,800	3,975	3,425	3,500	2,175	1,700	2,600	1,800	1,125
675	725	1,075	425	775	700	1,025		525	1,525	1,525	2,475	2,475	5,800	3,975	3,425	3,500	2,175	1,700	2,575	1,775	1,150
650	1,000	1,075	475	800	725	1,050	0	550	1,525	1,525	2,450	2,450	5,825	3,975	3,450	3,500	2,200	1,700	2,550	1,750	1,150
625	1,100	1,100	500	825	725	1,050	125	575	1,525	1,525	2,400	2,400	5,825	3,975	3,450	3,500	2,200	1,725	2,500	1,725	1,175
600	1,125	1,125	525	825	750	1,075	200	600	1,500	1,500	2,350	2,350	5,825	3,975	3,450	3,525	2,200	1,725	2,475	1,700	1,200
575	1,125	1,125	550	850	775	1,075	275	625	1,500	1,500	2,325	2,325	5,825	4,000	3,450	3,525	2,225	1,750	2,425	1,675	1,200
550	1,150	1,150	575	875	800	1,100	325	650	1,475	1,475	2,275	2,275	5,825	4,000	3,450	3,525	2,225	1,750	2,400	1,650	1,225
525	1,150	1,150	600	875	800	1,100	350	675	1,450	1,450	2,250	2,250	5,825	4,000	3,450	3,525	2,225	1,750	2,350	1,625	1,225
500	1,150	1,150	625	900	825	1,125	400	700	1,425	1,425	2,200	2,200	5,825	4,000	3,475	3,525	2,225	1,750	2,300	1,600	1,225
475	1,150	1,175	650	900	850	1,125	425	700	1,400	1,400	2,175	2,175	5,825	4,000	3,475	3,525	2,250	1,775	2,275	1,575	1,250
450	1,150	1,175	650	925	850	1,150	450	725	1,375	1,375	2,150	2,150	5,825	4,000	3,475	3,525	2,250	1,775	2,225	1,550	1,250
425	1,150	1,175	675	925	875	1,150	475	750	1,350	1,350	2,100	2,100	5,825	4,000	3,475	3,525	2,250	1,775	2,175	1,550	1,275
400	1,150	1,200	700	950	875	1,150	500	750	1,350	1,350	2,075	2,075	5,825	4,000	3,475	3,550	2,250	1,775	2,125	1,550	1,275
375	1,150	1,200	700	950	875	1,175	525	775	1,325	1,325	2,050	2,050	5,850	4,025	3,475	3,550	2,250	1,800	2,100	1,575	1,275
350	1,150	1,200	725	975	900	1,175	525	775	1,300	1,300	2,025	2,025	5,850	4,025	3,475	3,550	2,250	1,800	2,050	1,575	1,275
325	1,150	1,225	725	975	900	1,175	550	775	1,275	1,275	1,975	1,975	5,850	4,025	3,475	3,550	2,275	1,800	2,025	1,575	1,300
300	1,150	1,225	750	975	925	1,175	550	800	1,275	1,275	1,950	1,950	5,850	4,025	3,500	3,550	2,275	1,800	2,000	1,575	1,300
275	1,150	1,225	750	1,000	925	1,200	575	800	1,250	1,250	1,925	1,925	5,850	4,025	3,500	3,550	2,275	1,800	1,950	1,575	1,300
250	1,150	1,225	750	1,000	925	1,200	575	825	1,225	1,225	1,900	1,900	5,850	4,025	3,500	3,550	2,275	1,800	1,925	1,600	1,300
225	1,150	1,250	775	1,000	950	1,200	600	825	1,225	1,225	1,875	1,875	5,850	4,025	3,500	3,500	2,275	1,825	1,900	1,600	1,325
200	1,150	1,250	775	1,000	950	1,200	600	825	1,200	1,200	1,850	1,850	5,850	4,025	3,500	3,550	2,275	1,825	1,875	1,600	1,325
175	1,125	1,250	775	1,000	950	1,200	625	825	1,175	1,175	1,825	1,825	5,725	3,925	3,400	3,500	2,200	1,800	1,825	1,600	1,325
150	1,125	1,250	800	1,000	950	1,225	625	850	1,175	1,175	1,800	1,800	5,400	3,725	3,200	3,325	2,225	1,775	1,850	1,600	1,325
125	1,100	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,775	1,775	5,100	3,525	3,000	3,150	2,175	1,750	1,850	1,600	1,325
100	1,075	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,750	1,750	4,750	3,300	2,800	2,975	2,150	1,725	1,850	1,600	1,325
75	1,050	1,250	800	1,025	950	1,225	625	850	1,125	1,175	1,725	1,725	4,500	3,100	2,625	2,750	2,100	1,700	1,875	1,600	1,325
50	1,025	1,250	800	1,025	975	1,225	625	850	1,125	1,175	1,700	1,700	4,100	2,875	2,425	2,600	2,050	1,675	1,875	1,600	1,325
25	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,750	2,675	2,250	2,425	2,025	1,650	1,875	1,600	1,325
0	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,375	2,475	2,050	2,275	1,975	1,625	1,875	1,600	1,325

HOB_{fs} = 82 m
Low HOB_{min} = 144 m
High HOB_{min} = 326 m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ *m*

Figure 6.6f.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam Hwy and RR brgs	Severe dam float brgs	2d -degree burns			1 PSI over-pressure	Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							2,625	650		4,625			0–10				0–750	
1,150							2,650	750		4,600			0–10				0–800	
1,100							2,675	825		4,600			0–15				0–900	
1,050							2,700	875		4,575		0	0–20			0	0–950	
1,000							2,700	925		4,550		0–5	0–25			0–50	0–1,000	
950							2,725	975		4,525		0–5	0–35			0–300	0–1,050	
900							2,750	1,025		4,500		0–5	5–45			0–450	50–1,100	
850							2,750	1,075		4,475		0–10	5–65			0–550	350–1,150	
800				0			2,775	1,100		4,450		0–10	5–90			0–600	450–1,150	
775				25			2,775	1,125		4,450	0	0–10	5–110		0	0–650	500–1,200	
750				75			2,800	1,150	0	4,425	0–5	0–15	10–140		0–50	0–700	550–1,200	
725				150			2,800	1,150	75	4,400	0–5	0–15	10–170		0–200	0–700	550–1,200	
700				225			2,800	1,175	200	4,400	0–5	0–20	10–200		0–300	0–750	600–1,250	
675				275			2,800	1,200	275	4,375	0–5	0–25	10–250		0–350	0–750	600–1,250	
650				325			2,825	1,200	325	4,350	0–5	0–30	15–320		0–400	0–800	650–1,250	
625	0			375		0	2,825	1,225	375	4,325	0–5	0–35	20–390		0–450	0–800	700–1,300	
600	75			425		750	2,825	1,225	425	4,325	0–5	5–40	20–480		0–450	50–800	700–1,300	
575	125			475		775	2,825	1,250	450	4,300	0–10	5–50	25–590		0–500	200–850	700–1,300	
550	200			525		775	2,825	1,250	475	4,275	0–10	5–65	30–750		0–550	250–850	750–1,300	
525	250		0	550		775	2,850	1,275	500	4,250	0–10	5–85	40–990		0–600	300–900	750–1,350	
500	325		25	575		775	2,850	1,275	525	4,225	0–15	5–100	50–1,200		0–600	350–900	800–1,350	
475	425	0	100	600		775	2,850	1,275	550	4,200	0–20	10–150	75–1,800		0–600	400–900	800–1,350	
450	600	25	150	625	0	800	2,850	1,300	575	4,175	0–25	10–190	100–2,280		0–600	400–900	800–1,350	
425	675	75	200	650	550	800	2,850	1,300	600	4,150	0–30	10–250	120–3,000		0–650	450–950	800–1,350	
400	700	100	250	675	650	800	2,850	1,300	600	4,125	0–40	15–330	160–3,960		0–650	450–950	850–1,350	
375	725	150	275	700	675	800	2,875	1,325	625	4,100	0–50	20–430	210–5,160		0–650	500–950	850–1,400	
350	750	200	325	725	675	825	2,875	1,325	650	4,075	5–60	25–530	260–6,360		50–700	500–950	850–1,400	
325	775	225	350	725	700	825	2,875	1,325	650	4,050	5–75	30–660	320–7,920	0	150–700	500–950	850–1,400	0
300	800	275	350	750	700	825	2,875	1,325	675	4,025	5–90	35–780	380–9,360	0–5	200–700	550–1,000	850–1,400	0–50
275	800	325	375	775	700	825	2,875	1,350	675	4,000	5–105	40–940	460–11,300	0–5	250–700	550–1,000	900–1,400	0–150
250	825	375	400	775	700	850	2,875	1,350	675	3,950	5–125	45–1,100	530–13,200	0–5	250–750	550–1,000	900–1,400	0–200
225	850	425	425	800	725	850	2,875	1,350	700	3,925	10–150	60–1,300	630–15,600	0–5	300–750	600–1,000	900–1,400	0–200
200	850	475	450	825	725	850	2,875	1,350	700	3,900	10–200	75–1,800	870–21,600	0–5	300–750	600–1,000	900–1,400	0–250
175	875	500	450	825	725	850	2,850	1,350	725	3,875	10–250	90–2,200	1,060–26,400	0–10	350–750	600–1,000	900–1,400	0–250
150	875	500	475	850	725	850	2,675	1,275	675	3,825	15–310	120–2,800	1,350–33,600	0–10	350–750	600–1,000	900–1,400	0–300
125	850	500	475	850	725	850	2,500	1,200	650	3,800	20–410	150–3,700	1,780–44,000	0–10	350–750	600–1,000	900–1,400	0–300
100	850	525	475	850	700	825	2,350	1,125	600	3,775	20–500	180–4,500	2,160–54,000	0–15	350–750	600–1,000	900–1,400	0–300
75	825	500	475	825	675	800	2,175	1,050	550	3,725	FALLOUT GOVERNS							
50	775	500	450	775	750	750	2,000	975	525	3,700								
25	700	450	375	725	600	725	1,850	900	475	3,650								
0	600	400	325	650	550	650	1,675	825	450	3,625								

Figure 6.6f continued.

LGM 1

[1]Light Guided Missile.

CONTINGENT EFFECTS Tables
Light Guided Missile

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.
Impact burst not tabulated, fallout governs.

Yield KT	*HOB*	*Estimated radii in meters of 2 rad/hr contour of induced radiation, 1 hour after burst.*				*Estimated induced radiation intensity, 1 hour after burst, at GZ. In rad/hr.*			
		Soil type I (Liberia, Africa)	*Soil type II (Nevada desert)*	*Soil type III (lava clay, Hawaii)*	*Soil type IV (beach sand, Pensacola, Fla)*	*Soil type I*	*Soil type II*	*Soil type III*	*Soil type IV*
ALFA/.5	Low	0–350	150–550	450–850	0	0–20	10–145	70–1,750	0
	High	0–350	100–550	450–850	0	0–10	5–100	45–1,150	0
BRAVO/1	Low	0–400	300–600	450–950	0	0–35	15–290	140–3,500	0
	High	0–400	300–600	450–950	0	0–15	10–140	70–1,680	0
CHARLIE/2	Low	100–500	350–700	600–1,050	0	5–70	25–580	280–7,000	0
	High	0–500	350–700	600–1,050	0	0–35	15–280	140–3,400	0
DELTA/5	Low	200–550	450–800	700–1,150	0–150	5–125	50–1,140	540–13,500	0–5
	High	0–550	400–800	700–1,150	0	0–35	15–325	160–3,900	0
ECHO/10	Low	300–600	500–900	800–1,350	0–250	10–250	90–2,250	1,080–27,000	0–10
	High	200–550	450–900	800–1,350	0–50	5–65	25–550	270–6,600	0–5
FOXTROT/20	Low	350–750	600–1,000	900–1,400	0–300	20–410	150–3,700	1,780–44,000	0–10
	High	150–700	500–950	850–1,400	0	5–75	30–660	320–7,920	0
	Low								
	High								
	Low								
	High								

NOTE: For description, chemical composition and effects of variations in chemical composition in soil types, see FM 101-31-1, app III, annex F.

Figure 6.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	*OBSTACLES TO MOVEMENT*							*CASUALTIES TO EXPOSED PERSONNEL*		
	Foot and wheeled vehicle movement				*Tracked vehicle movement*					
	Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*
ALFA/.5	250	300	300	450	250	300	300	150	200	200
BRAVO/1	300	400	400	700	300	400	400	200	300	300
CHARLIE/2	350	500	550	900	350	500	550	250	400	400
DELTA/5	600	800	900	1,400	600	800	900	400	600	600
ECHO/10	750	1,000	1,100	1,900	750	1,000	1,100	600	800	900
FOXTROT/20	1,050	1,300	1,500	2,400	1,050	1,300	1,500	750	1,000	1,150

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 6.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	*AIRCRAFT SAFETY RADII—meters (See note 2.)*		
	Light fixed wing	*Recon and obsn hel*	*Transport and util hel*
ALFA/.5	4,000	4,000	4,000
BRAVO/1	5,000	5,000	5,000
CHARLIE/2	6,000	6,000	5,000
DELTA/5	9,000	9,000	7,000
ECHO/10	10,000	10,000	9,000
FOXTROT/20	13,000	13,000	11,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of safety.

Figure 6.7c.

FIRE AREAS (See note.)

Yield KT	*HOB*	*Expected radii for ignition of wildland fuels during fire season–meters*							
		Dry climate (25 percent relative humidity)				*Damp climate (75 percent relative humidity)*			
		Class I	*Class II*	*Class II*	*Class IV*	*Class I*	*Class II*	*Class III*	*Class IV*
ALFA/.5	Air	800	700	700	600	700	700	600	400
	Impact	500	500	400	400	500	500	400	400
BRAVO/1	Air	1,100	1,000	900	700	1,000	1,000	800	600
	Impact	700	600	500	500	600	600	500	400
CHARLIE/2	Air	1,400	1,300	1,000	800	1,300	1,300	1,100	800
	Impact	900	800	700	600	800	800	700	500
DELTA/5	Air	2,000	1,800	1,700	1,400	1,800	1,800	1,500	1,100
	Impact	1,200	1,100	1,000	800	1,100	1,100	900	700
ECHO/10	Air	2,600	2,400	2,200	1,800	2,400	2,400	2,100	1,500
	Impact	1,500	1,400	1,300	1,100	1,400	1,400	1,200	900
FOXTROT/20	Air	3,400	3,200	2,900	2,400	3,200	3,200	2,700	2,000
	Impact	2,000	1,900	1,700	1,400	1,900	1,900	1,500	1,200

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 6.7d.

CRATER DIMENSIONS (See note.)

Yield KT	*Approx crater dimensions for various soil types–meters*							
	Hard rock (granite and sandstone)		*Soft rock (dry soil or soft rock)*		*Saturated soil (water slowly fills crater)*		*Saturated soil (water rapidly fills crater)*	
	Radius	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*
ALFA/.5	13	5	16	6	24	8	31	4
BRAVO/1	16	6	20	7	30	10	39	5
CHARLIE/2	20	6	25	8	37	12	50	6
DELTA/5	27	8	34	10	50	15	67	7
ECHO/10	34	10	42	12	63	18	84	8
FOXTROT/20	43	11	53	14	80	21	106	10

NOTE: Baaed on contact aurface burst, for more detailed analysia, aee engineer element.

Figure 6.7e.

LGM 1

[1]Light Guided Missile.

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CHAPTER 7
MEDIUM GUIDED MISSILE

7.1 GENERAL

a. Orientation. This chapter contains employment data for the medium guided missile with its associated warhead sections fired from a mobile launcher.

b. Weapon characteristics.

(1) *Yield.* The warhead sections for the medium guided missile have yields of Delta/5 KT, Echo/10 KT, Foxtrot/20 KT, Golf/50 KT, Hotel/100 KT, India/200 KT, and Juliett/500 KT.

(2) *Fuzing.*

(*a*) The fuzing for the medium guided missile provides airburst and impact fuzing options. The airburst option is radar-fuzed and can be set for either high or low airburst; these are the only heights of burst available. When the fuze is set for an airburst, the system provides for an option of either contact backup or contact preclusion.

(*b*) The fuzes are preset at the following heights of burst:

Warhead section	*HOB option*	*HOB (meters)*	PE_h *(meters)*
Delta/5 KT	low	227	50
	high	335	
Echo/10 KT	low	240	50
	high	402	
Foxtrot/20 KT	low	257	50
	high	461	
Golf/50 KT	low	286	50
	high	562	
Hotel/100 KT	low	315	50
	high	663	
India/200 KT	low	502	50
	high	790	
Juliett/500 KT	low	620	50
	high	1,009	

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the medium guided missile are 50,000 meters and 150,000 meters.

(2) *Tactical system accuracy.* The tactical system errors for the medium guided missile are independent of range. A CEP of 500 meters has been used in the computation of the weapon selection tables. The vertical probable error is 50 meters.

(3) *Unit carrying capacity.* A medium guided missile unit can draw, transport, and store at any one time a total of 8 complete rounds per battalion.

MGM 1

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are considered to be applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

Situation	*Time (minutes)*	*Remarks*
I[1]	60	For situation I, add 25 minutes if warhead section must be removed and a new warhead section with required yield mated to missile.
II[2]	20	

[1]Situation I (high readiness)—the complete round and launcher are in a firing position and survey is completed. Preliminary firing data for a specific target are *not* available. Prefire checkouts which can be performed prior to the receipt of a fire mission have been completed. (May be used to engage targets of opportunity.)

[2]Situation II (maximum readiness)—firing data for a specific target have been computed and applied to the weapon system. The unit is awaiting an order to fire. (Typical of readiness to engage on-call target).

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes, for an airburst fuzing option, the radar HOB setting, high or low; it also includes whether contact backup or contact preclusion is desired. When contact backup is chosen, a fallout prediction is made. When an impact fuzing option is selected, the fire mission specifies HOB impact.

[1]Medium Guided Missile.

EXPOSED Personnel Targets
Medium Guided Missile

Yield KT	HOB option (HOB-meters) (See note)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o (meters)
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
			600	800	1,000	1,200	1,400	1,600	1,800	2,000	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Prompt	Delayed	
5	High (355)	4,200	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.4/.7	.4/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	650	950	915
	Low (227)	4,200	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	.5/.7	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	725	1,000	(all
	Impact	*3,100	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.5/.8	.4/.7	.4/.6	.3/.5	.3/.4	.3/.3	.2/.3	.2/.2	800	1,050	yields)
			Target radius (meters)								Target radius (meters)										
			600	800	1,000	1,200	1,400	1,600	1,800	2,000	800	1,200	1,600	2,000	2,400	2,800	3,200				
10	High (402)	5,100	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		825	1,050	
	Low (240)	5,100	.4/.7	.4/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.6/.8	.4/.6	.3/.5	.2/.3	.2/.2	.1/.2	.1/.1		875	1,125	
	Impact	*3,600	.4/.7	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		900	1,175	
			Target radius (meters)								Target radius (meters)										
			1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600			
20	High (461)	6,900	.5/.7	.4/.6	.4/.5	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		1,125	1,125	
	Low (257)	6,900	.5/.7	.4/.6	.4/.5	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	
	Impact	*4,400	.4/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	
			Target radius (meters)								Target radius (meters)										
			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
50	High (562)	9,700	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	
	Low (286)	9,700	.7/.9	.6/.8	.5/.6	.4/.5	.3/.3	.1/.2	.1/.2	.1/.2	.7/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	1,600	1,600	
	Impact	*5,900	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	
			Target radius (meters)								Target radius (meters)										
			2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800	2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800			
100	High (663)	12,400	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	2,175	2,175	
	Low (315)	12,400	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.7/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	2,100	2,100	
	Impact	*7,400	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	
			Target radius (meters)								Target radius (meters)										
			2,400	3,200	4,000	4,800	5,600	6,400	7,200	8,000	2,400	3,200	4,000	4,800	5,600	6,400	7,200	8,000			
200	High (790)	16,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	2,875	2,875	
	Low (502)	16,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	2,850	2,850	
	Impact	*9,300	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			2,275	2,275	
			Target radius (meters)								Target radius (meters)										
			3,600	4,400	5,200	6,000	6,800	7,600	8,400	9,200	3,600	4,400	5,200	6,000	6,800	7,600	8,400	9,200			
500	High (1,009)	22,800	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.7/.9	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	4,150	4,150	
	Low (620)	22,800	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	4,100	4,100	
	Impact	*12,500	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	3,300	3,300	

NOTE: High airburst—Reduces intensity of induced contamination. Precludes fallout.
Low airburst—Precludes fallout.
Impact burst—Produces fallout.

*Initial effects only. Fallout governs.

Figure 7.1.

Yield	HOB option (HOB-meters)	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
KT	(See note)	(meters)	300	400	500	600	700	800	900	1,000	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Prompt	Delayed	(meters)
5	High (355)	4,200	.0/.4	.0/.4	.0/.4	.1/.4	.1/.3	.1/.3	.1/.2	.1/.2	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1		425	675	915
	Low (227)	4,200	.0/.5	.0/.5	.1/.5	.1/.4	.1/.4	.1/.4	.1/.3	.1/.3	.3/.6	.3/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	(all
	Impact	*3,100	.1/.6	.1/.5	.1/.5	.1/.5	.2/.4	.2/.4	.2/.4	.2/.3	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	625	825	yields)
			Target radius (meters)								Target radius (meters)										
			400	600	800	1,000	1,200	1,400	1,600	1,800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400			
10	High (402)	5,100	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.0/.1		.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1		500	775	
	Low (240)	5,100	.1/.6	.1/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	625	850	
	Impact	*3,600	.2/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/:2	700	925	
			Target radius (meters)								Target radius (meters)										
			400	600	800	1,000	1,200	1,400	1,600	1,800	800	1,200	1,600	2,000	2,400	2,800					
20	High (461)	6,900	.1/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.4/.7	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			575	850	
	Low (257)	6,900	.2/.7	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.4/.7	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1			725	975	
	Impact	*4,400	.3/.7	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.2	.1/.2	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1				800	1,025	
			Target radius (meters)								Target radius (meters)										
			800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	800	1,200	1,600	2,000	2,400	2,800	3,200				
50	High (562)	9,700	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1		.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			650	975	
	Low (286)	9,700	.4/.6	.3/.5	.3/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.8	.5/.6	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		850	1,125	
	Impact	*5,900	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		925	1,175	
			Target radius (meters)								Target radius (meters)										
			800	1,200	1,600	2,000	2,400	2,800	3,200		800	1,200	1,600	2,000	2,400	2,800	3,200	3,600			
100	High (663)	12,400	.3/.6	.3/.4	.2/.3	.1/.2	.1/.1				.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		850	1,050	
	Low (315)	12,400	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	975	1,250	
	Impact	*7,400	.5/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2		.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	
			Target radius (meters)								Target radius (meters)										
			1,200	1,600	2,000	2,400	2,800	3,200			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
200	High (791)	16,300	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1				.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1			1,050	1,150	
	Low (502)	16,300	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1				.6/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		1,000	1,350	
	Impact	*9,300	.5/.6	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,150	1,450	
			Target radius (meters)								Target radius (meters)										
			1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400			
500	High (1,009)	22,800	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		1,400	1,400	
	Low (620)	22,800	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1			.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,350	1,475	
	Impact	*12,500	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,675	1,675	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst –Precludes fallout.
Impact burst –Produces fallout.

Figure 7.2.

*Initial effects only. Fallout governs.

MGM 1

[1] Medium Guided Missile.

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Yield KT	HOB option (HOB–meters) (See note)	Minimum safe distance (negligible risk, UnW Ex) meters	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage, the second figure is the average coverage.																	Offset distance d_o (meters)
			WHEELED VEHICLES									TANKS AND ARTILLERY								
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			200	300	400	500	600	700	800		(meters)	100	150							(meters)
	High (355)	4,200	.0/.1								0	.0/.0								0
5	Low (227)	4,200	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.1			175	.0/.2	.0/.1							0
	Impact	*3,100	.0/.3	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		325	.0/.1								225
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			300	400	500	600	700	800	900	1,000	(meters)	200	300	400	500	600				(meters)
	High (402)	5,100	.0/:2	.0/.2	.0/.2	.0/.2	.0/.1				0	.0/.0								0
10	Low (240)	5,100	.0/.5	.0/.5	.0/.5	.0/.4	.0/.4	.0/.4	.0/.3	.0/.3	500	.0 .2	.0/.2	.0/.1						50
	Impact	*3,600	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.1/.2	450	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				300
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			400	600	800	1,000	1,200	1,400	1,600	1,800	(meters)	300	400	500	600	700	800	900	1,000	(meters)
	High (461)	6,900	.0/.5	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1			175	.0/.0								0
20	Low (257)	6,900	.3/.7	.3/.7	.3/.6	.3/.5	.2/.4	.2/.3	.2/.3	.1/.2	750	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1				175
	Impact	*4,400	.1/.5	.1/.4	.1/.4	.2/.3	.1/.2	.1/.2	.1/.1		575	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	.0/.2	.1/.2	.1/.1	400
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			800	1,200	1,600	2,000	2,400	2,800	3,200		(meters)	500	600	700	800	900	1,000	1,100	1,200	(meters)
	High (562)	9,700	.3/.6	.2/.5	.1/.3	.0/.2	.0/.2	.0/.1			575	.0/.1								0
50	Low (286)	9,700	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.1		1,150	.1/.5	.1/.5	.1/.4	.1/.4	.1/.4	.1/.3	.1/.3	.1/.3	450
	Impact	*5,900	.3/.6	.3/.4	.2/.3	.1/.2	.1/.1				850	.1/.5	.1/.4	.1/.4	.1/.3	.1/.3	.1/.3	.1/.2	.1/.2	550
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	(meters)
	High (663)	12,400	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		1,200	.0/.1								75
100	Low (315)	12,400	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	1,575	.4/.7	.4/.6	.3/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	750
	Impact	*7,400	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1			1,100	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	725
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			1,200	2,000	2,800	3,600	4,400	5,200	6,000		(meters)	800	1,200	1,600	2,000	2,400	2,800			(meters)
	High (791)	16,300	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			1,700	.0/.2	.0/.1							225
200	Low (502)	16,300	.9/.9	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		2,025	.4/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1			775
	Impact	*9,300	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1				1,450	.4/.7	.3/.5	.3/.4	.2/.2	.1/.2	.1/.1			975
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			1,600	2,400	3,200	4,000	4,800	5,600	6,400	7,200	(meters)	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	(meters)
	High (1,009)	22,800	.9/.9	.8/.9	.5/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1	2,575	.1/.3	.1/.2	.0/.1						525
500	Low (620)	22,800	.9/.9	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	3,000	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.3	.1/.2	.1/.2	1,400
	Impact	*12,500	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.1			2,100	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,400

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 7.3.

MGM 1

[1]Medium Guided Missile.

Troop Safety Distances—Meters
Medium Guided Missile

Range	*Yield*	*Height of burst option*	*Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown*								
			Unwarned Exposed			*Warned Exposed*			*Warned Protected*		
			NEG Risk	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*
All ranges from 50 km through 150 km	DELTA/ 5 KT	High	4,200	3,400	3,000	3,100	2,700	2,400	2,700	2,400	2,100
		Low	4,200	3,400	3,000	3,100	2,700	2,400	2,700	2,400	2,100
		Impact[1]	3,100	2,700	2,400	3,100	2,700	2,400	2,700	2,400	2,200
	ECHO/ 10 KT	High	5,100	4,200	4,000	3,700	2,800	2,500	3,000	2,500	2,200
		Low	5,100	4,200	4,000	3,700	2,900	2,600	2,800	2,500	2,200
		Impact[1]	3,600	2,900	2,600	3,200	2,900	2,600	2,800	2,500	2,300
	FOXTROT/ 20 KT	High	6,900	5,100	4,500	4,600	3,300	2,800	3,400	2,700	2,300
		Low	6,900	5,100	4,500	4,600	3,300	2,900	3,100	2,700	2,400
		Impact[1]	4,400	3,500	3,100	3,300	3,000	2,700	2,900	2,700	2,400
	GOLF/ 50 KT	High	9,700	7,600	6,800	6,400	4,400	3,700	4,100	3,200	2,300
		Low	9,700	7,600	6,800	6,400	4,400	3,700	3,700	3,000	2,500
		Impact[1]	5,900	4,800	4,300	4,200	3,300	2,900	3,400	2,800	2,600
	HOTEL/ 100 KT	High	12,400	10,000	8,300	8,300	5,700	4,700	4,800	3,700	2,700
		Low	12,400	10,000	8,300	8,300	5,700	4,700	4,300	3,400	2,700
		Impact[1]	7,400	6,000	5,200	5,200	3,700	3,200	4,000	3,200	2,700
	INDIA/ 200 KT	High	16,300	12,900	11,500	10,900	7,500	6,100	5,700	4,300	3,000
		Low	16,300	12,900	11,500	10,900	7,500	6,100	5,300	4,100	2,800
		Impact[1]	9,300	7,700	6,700	6,500	4,700	3,900	4,700	3,800	2,800
	JULIETT/ 500 KT	High	22,800	18,800	16,600	15,400	10,400	8,400	7,200	5,400	3,600
		Low	22,800	18,800	16,600	15,400	10,400	8,400	6,700	5,100	3,300
		Impact[1]	12,500	10,700	9,500	8,900	6,300	5,200	6,000	4,800	3,400

NOTE: The troop safety distances include the safety radius for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly disposition. See figure 7.5 for special friendly troop orientations.

[1]Initial effects only. Fallout governs.

Figure 7.4.

The troop safety distances in figure 7.4 are based on the friendly troop orientation shown in figure 1, below. The circular delivery pattern of the medium guided missile may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Speciol Troop Safety Orientotions

LEGEND
DGZ- Desired ground zero.
R_S – Safety radius
d_b – Buffer distance.
~~~-Friendly troops.
►-Direction of fire.

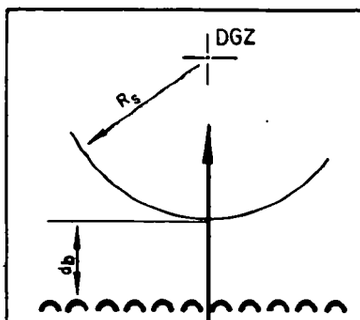

Figure 1. Straight line, perpendiculor delivery.

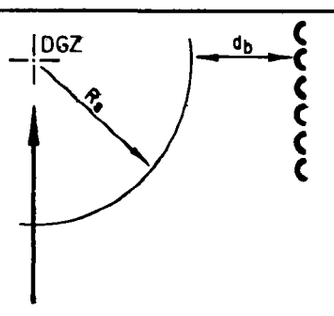

Figure 2. Straight line, porollel delivery.

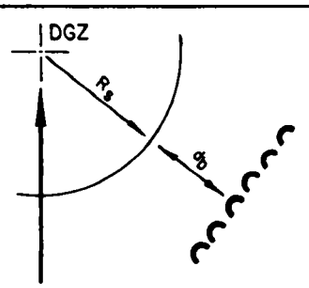

Figure 3. Straight line, 45° delivery.

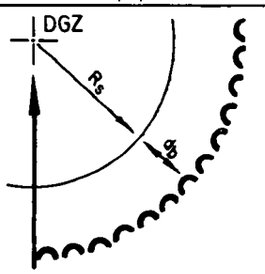

Figure 4. Quarter circle.

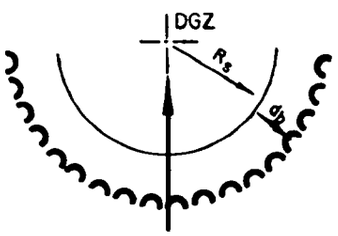

Figure 5. Half circle.

When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figure 7.4 must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

MGM 1

All Height of Burst Options–All Yields				
Range (meters)	*Straight line, parallel delivery (fig 2)*	*Straight line, 45° delivery (fig 3)*	*Quarter circle (fig 4)*	*Half circle (fig 5)*
All ranges	0	0	+200	+300

Figure 7.5.

[1]Medium Guided Missile.
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CASUALTY and DAMAGE Tables
Medium Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,050		0											3,025	2,150	1,700	1,750	1,350	875	1,225	875	350
1,025		225										0	3,025	2,150	1,700	1,750	1,350	900	1,250	900	425
1,000		325				0						175	3,025	2,150	1,725	1,775	1,375	925	1,275	925	475
975		400				150						275	3,025	2,175	1,750	1,775	1,400	950	1,300	950	525
950		450				250				0		350	3,050	2,175	1,750	1,800	1,400	1,000	1,300	975	575
925		500				350				200		425	3,050	2,200	1,775	1,800	1,425	1,000	1,325	1,000	600
900		550				400				300	0	475	3,050	2,200	1,775	1,825	1,450	1,025	1,350	1,025	650
875		575				450				350	650	650	3,075	2,225	1,800	1,825	1,450	1,050	1,350	1,050	675
850		625				500				400	750	750	3,075	2,225	1,800	1,850	1,475	1,075	1,375	1,075	700
825		650		0		550				450	850	850	3,075	2,225	1,800	1,850	1,500	1,100	1,400	1,075	725
800	0	675		200		575				500	925	925	3,100	2,250	1,825	1,875	1,500	1,100	1,400	1,100	750
775	175	700		275		600				550	975	975	3,100	2,250	1,825	1,875	1,525	1,125	1,425	1,125	800
750	275	725		350	0	650				775	1,050	1,050	3,100	2,275	1,850	1,900	1,525	1,150	1,425	1,150	800
725	325	750		400	175	675			0	600	1,150	1,150	3,100	2,275	1,850	1,900	1,550	1,150	1,550	1,150	825
700	375	775		425	250	700			150	625	1,300	1,300	3,125	2,275	1,875	1,900	1,550	1,175	1,700	1,175	850
675	425	800		475	300	725			225	650	1,500	1,500	3,125	2,275	1,875	1,925	1,550	1,200	1,725	1,175	875
650	450	825		500	350	750		0	300	675	1,600	1,600	3,125	2,300	1,875	1,925	1,575	1,200	1,725	1,200	900
625	500	850	0	525	400	750		175	350	700	1,625	1,625	3,125	2,300	1,900	1,925	1,575	1,225	1,725	1,200	925
600	525	850	150	550	450	775		250	375	725	1,650	1,650	3,125	2,300	1,900	1,950	1,600	1,225	1,725	1,225	925
575	550	875	225	575	475	800		300	425	750	1,650	1,650	3,150	2,300	1,900	1,950	1,600	1,250	1,725	1,225	950
550	575	900	300	600	500	825		350	450	775	1,625	1,625	3,150	2,325	1,900	1,950	1,600	1,250	1,750	1,250	950
525	600	900	325	625	525	825		375	525	775	1,625	1,625	3,150	2,325	1,925	1,950	1,625	1,275	1,725	1,250	975
500	625	925	375	650	550	850		425	825	825	1,600	1,600	3,150	2,325	1,925	1,975	1,625	1,275	1,700	1,275	975
475	650	925	400	675	575	875	0	450	875	875	1,550	1,550	3,150	2,325	1,925	1,975	1,625	1,275	1,675	1,275	1,000
450	650	950	425	700	600	875	100	475	925	925	1,525	1,525	3,150	2,350	1,950	1,975	1,650	1,300	1,650	1,300	1,000
425	675	950	450	700	600	875	175	500	925	925	1,475	1,475	3,175	2,350	1,950	2,000	1,650	1,300	1,625	1,300	1,025
400	700	975	475	725	625	900	225	525	925	925	1,450	1,450	3,175	2,350	1,950	2,000	1,650	1,300	1,600	1,300	1,025
375	700	975	500	725	650	900	275	525	925	925	1,425	1,425	3,175	2,350	1,950	2,000	1,650	1,325	1,575	1,300	1,050
350	725	975	500	750	650	925	300	550	900	900	1,400	1,400	3,175	2,350	1,950	2,000	1,675	1,325	1,575	1,325	1,050
325	725	1,000	525	750	675	925	325	575	875	875	1,375	1,375	3,175	2,350	1,975	2,000	1,675	1,325	1,575	1,325	1,050
300	750	1,000	550	775	675	950	350	575	850	900	1,350	1,350	3,175	2,350	1,975	2,000	1,675	1,350	1,600	1,325	1,075
275	750	1,000	550	775	700	950	375	600	850	900	1,300	1,300	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,325	1,075
250	750	1,025	575	775	700	950	400	600	825	900	1,275	1,275	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,350	1,075
225	775	1,025	575	800	700	950	400	600	800	925	1,250	1,250	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,075
200	775	1,025	600	800	725	975	425	625	800	925	1,225	1,225	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
175	775	1,025	600	800	725	975	425	625	775	925	1,200	1,200	3,200	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
150	775	1,025	600	800	725	975	425	625	750	925	1,175	1,175	3,200	2,375	2,000	2,025	1,700	1,350	1,600	1,350	1,100
125	775	1,050	600	800	725	975	450	650	750	925	1,150	1,150	3,200	2,375	2,000	2,025	1,700	1,375	1,625	1,350	1,100
100	800	1,050	625	825	750	975	450	650	725	950	1,125	1,125	3,150	2,375	1,950	2,025	1,700	1,375	1,625	1,350	1,100
75	800	1,050	625	825	750	975	450	650	700	950	1,125	1,125	2,800	2,200	1,800	2,025	1,700	1,375	1,625	1,350	1,100
50	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,550	2,025	1,650	2,025	1,700	1,375	1,625	1,375	1,100
25	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,275	1,850	1,525	2,025	1,700	1,375	1,625	1,375	1,100
0	800	1,050	625	825	750	975	450	650	725	950	1,050	1,050	2,125	1,700	1,375	2,025	1,700	1,375	1,625	1,375	1,100

HOB_{fs} = 52 m

Low HOB_{min} = 91 m

High HOB_{min} = 206 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 7.6a.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d Degree Burns			1 PSI over-pressure	Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,050							1,175			2,875			0–5				0–500	
1,025							1,200			2,875			0–5				0–550	
1,000							1,225			2,875			0–10				0–600	
975							1,225			2,900			0–10				0–600	
950							1,250			2,900			0–10				0–650	
925							1,275			2,900			0–10				0–700	
900							1,300			2,900			0–15				0–750	
875							1,300			2,925			0–15				0–750	
850							1,325			2,925			0–20				0–800	
825							1,350			2,925		0	0–20			0	0–800	
800							1,350			2,925		0–5	0–25			0–50	0–850	
775							1,375			2,900		0–5	0–30			0–200	0–850	
750							1,375	0		2,900		0–5	0–35			0–300	0–900	
725							1,400	75		2,900		0–5	0–45			0–350	0–900	
700							1,400	200		2,900		0–5	5–50			0–400	50–950	
675							1,425	275		2,875		0–10	5–65			0–450	200–950	
650							1,425	325		2,875		0–10	5–80			0–500	300–950	
625							1,450	375		2,850		0–10	5–100			0–500	350–1,000	
600							1,450	425		2,850		0–10	5–120			0–550	400–1,000	
575							1,475	450		2,850	0	0–15	10–150		0	0–600	400–1,000	
550							1,475	475		2,825	0–5	0–20	10–190		0–50	0–600	450–1,050	
525							1,475	500		2,825	0–5	0–25	10–250		0–200	0–650	450–1,050	
500				0			1,500	525		2,800	0–5	0–25	15–300		0–250	0–650	500–1,050	
475				50			1,500	550		2,800	0–5	0–40	20–450		0–300	0–650	550–1,050	
450				100			1,500	575		2,775	0–5	5–50	25–570		0–300	50–700	550–1,100	
425				150			1,525	600		2,750	0–10	5–70	30–750		0–350	150–700	600–1,100	
400	0			200		0	1,525	600	0	2,725	0–10	5–90	40–1,000		0–400	200–700	600–1,100	
375	50			250		400	1,525	625	125	2,725	0–15	5–110	50–1,300		0–400	250–750	600–1,100	
350	100			300		425	1,525	650	175	2,700	0–15	10–140	70–1,600		0–400	300–750	650–1,100	
325	150		0	325		425	1,550	650	225	2,675	0–20	10–165	80–1,980		0–400	350–750	650–1,100	
300	250	0	50	350		425	1,550	675	250	2,650	0–25	10–200	100–2,340		0–450	350–750	650–1,150	
275	375	25	100	375		450	1,550	675	275	2,625	0–25	10–240	120–2,820		0–500	400–800	650–1,150	
250	400	75	150	400		450	1,550	675	300	2,600	0–35	15–275	140–3,300		0–500	400–800	700–1,150	
225	425	100	175	400		450	1,550	700	325	2,575	0–35	15–325	160–3,900		0–550	400–800	700–1,150	
200	450	125	200	425		475	1,550	700	350	2,550	5–50	20–450	220–5,400		50–550	450–800	700–1,150	
175	450	175	225	450	0	475	1,575	700	350	2,525	5–60	25–550	280–6,600	0	100–550	450–800	700–1,150	0
150	475	225	225	450	400	500	1,575	725	375	2,475	5–80	30–700	340–8,400	0–5	150–550	450–800	700–1,150	0–50
125	500	275	250	475	425	500	1,575	725	375	2,450	5–100	40–940	450–11,000	0–5	200–550	450–800	700–1,150	0–100
100	500	300	250	475	425	525	1,550	725	400	2,425	5–125	50–1,140	540–13,500	0–5	200–550	450–800	700–1,150	0–150
75	500	300	275	475	425	525	1,400	650	350	2,400	10–160	60–1,450	700–17,400	0–5	200–550	450–800	700–1,150	0–150
50	475	300	275	475	400	500	1,250	575	325	2,350	FALLOUT GOVERNS							
25	450	275	250	425	350	475	1,100	500	275	2,325								
0	325	225	175	375	300	400	925	450	250	2,275								

Figure 7.6a continued.

[1]Medium Guided Missile.

MGM 1

CASUALTY and DAMAGE Tables
Medium Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		0									600	600	3,850	2,975	2,700	2,375	1,375	925	1,275	900	100
1,150		250									850	850	3,850	3,000	2,725	2,400	1,400	1,000	1,325	950	350
1,100		400				0				0	1,000	1,000	3,875	3,000	2,750	2,425	1,450	1,050	1,375	1,025	500
1,050		525				325				150	1,150	1,150	3,875	3,025	2,750	2,425	1,500	1,100	1,400	1,075	600
1,000		625				450				350	1,300	1,300	3,900	3,050	2,775	2,450	1,525	1,150	1,500	1,125	675
950		700		0		550				475	1,500	1,500	3,900	3,050	2,800	2,475	1,550	1,200	1,650	1,150	750
900	0	750		200		625				550	1,750	1,750	3,925	3,075	2,800	2,500	1,575	1,225	2,100	1,200	800
850	275	800		350	0	700			0	625	2,125	2,125	3,925	3,075	2,825	2,500	1,600	1,250	2,175	1,250	850
800	400	850		450	300	750			175	700	2,175	2,175	3,950	3,100	2,850	2,525	1,625	1,300	2,175	1,275	900
775	450	875		500	350	775			475	725	2,200	2,200	3,950	3,100	2,850	2,525	1,650	1,300	2,175	1,275	925
750	500	900		550	400	800		0	550	750	2,200	2,200	3,950	3,100	2,850	2,550	1,650	1,325	2,175	1,325	950
725	525	925	0	575	450	825		175	625	775	2,200	2,200	3,950	3,125	2,850	2,550	1,675	1,350	2,175	1,400	950
700	550	950	100	600	475	850		250	675	800	2,175	2,175	3,975	3,125	2,875	2,550	1,675	1,350	2,225	1,475	975
675	600	950	200	625	525	875		325	725	825	2,175	2,175	3,975	3,125	2,875	2,550	1,700	1,350	2,200	1,500	1,000
650	625	975	275	650	550	875		375	1,200	1,200	2,150	2,150	3,975	3,150	2,875	2,575	1,700	1,375	2,175	1,475	1,000
625	650	1,000	325	675	575	900		400	1,225	1,225	2,125	2,125	3,975	3,150	2,875	2,575	1,700	1,400	2,150	1,475	1,025
600	650	1,000	375	700	600	925		450	1,250	1,250	2,100	2,100	3,975	3,150	2,900	2,575	1,725	1,400	2,125	1,450	1,050
575	675	1,025	400	725	625	950		475	1,275	1,275	2,075	2,075	3,975	3,150	2,900	2,600	1,725	1,400	2,100	1,425	1,050
550	700	1,025	450	750	650	950	0	500	1,275	1,275	2,050	2,050	3,975	3,150	2,900	2,600	1,725	1,425	2,075	1,425	1,075
525	725	1,050	475	750	675	975	150	525	1,250	1,250	2,000	2,000	4,000	3,150	2,900	2,600	1,750	1,425	2,025	1,425	1,075
500	825	1,050	500	775	675	975	225	550	1,250	1,250	1,975	1,975	4,000	3,175	2,900	2,600	1,750	1,450	2,000	1,425	1,100
475	850	1,075	525	800	700	1,000	275	575	1,225	1,225	1,950	1,950	4,000	3,175	2,925	2,600	1,750	1,450	1,950	1,425	1,100
450	850	1,075	550	800	725	1,000	300	600	1,200	1,200	1,900	1,900	4,000	3,175	2,925	2,600	1,750	1,450	1,925	1,425	1,125
425	850	1,100	575	825	725	1,025	350	625	1,175	1,175	1,850	1,850	4,000	3,175	2,925	2,625	1,775	1,450	1,875	1,450	1,125
400	850	1,100	575	825	750	1,025	375	625	1,175	1,175	1,825	1,825	4,000	3,175	2,925	2,625	1,775	1,475	1,850	1,450	1,125
375	875	1,100	600	850	750	1,025	400	650	1,150	1,150	1,775	1,775	4,000	3,175	2,925	2,625	1,775	1,475	1,800	1,450	1,150
350	875	1,125	625	850	775	1,050	425	650	1,125	1,125	1,750	1,750	4,000	3,175	2,925	2,625	1,800	1,475	1,750	1,450	1,150
325	875	1,125	650	850	775	1,050	450	675	1,100	1,100	1,700	1,700	4,025	3,175	2,950	2,625	1,800	1,475	1,725	1,475	1,150
300	875	1,125	650	875	800	1,050	450	675	1,075	1,075	1,650	1,650	4,025	3,175	2,950	2,625	1,800	1,500	1,725	1,475	1,175
275	875	1,150	650	875	800	1,075	475	700	1,075	1,075	1,625	1,625	4,025	3,200	2,950	2,650	1,800	1,500	1,725	1,475	1,175
250	875	1,150	650	900	800	1,075	475	700	1,050	1,050	1,600	1,600	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
225	875	1,150	675	900	825	1,075	500	700	1,025	1,025	1,575	1,575	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
200	875	1,150	675	900	825	1,075	500	725	1,025	1,050	1,550	1,550	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
175	875	1,150	700	900	825	1,075	525	725	1,000	1,050	1,500	1,500	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
150	875	1,150	700	900	825	1,100	525	725	975	1,050	1,475	1,475	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
125	875	1,175	700	900	850	1,100	525	725	975	1,050	1,450	1,450	3,800	3,050	2,850	2,600	1,825	1,525	1,750	1,500	1,200
100	900	1,175	700	925	850	1,100	525	750	950	1,050	1,425	1,425	3,575	2,825	2,600	2,525	1,825	1,525	1,750	1,500	1,200
75	900	1,175	700	925	850	1,100	550	750	925	1,050	1,400	1,400	3,325	2,600	2,350	2,450	1,825	1,525	1,750	1,500	1,200
50	900	1,175	700	925	850	1,100	550	750	900	1,050	1,375	1,375	3,075	2,350	2,180	2,350	1,825	1,525	1,750	1,500	1,200
25	900	1,175	700	925	850	1,100	550	750	900	1,050	1,350	1,350	2,850	2,125	1,850	2,275	1,825	1,525	1,750	1,500	1,200
0	900	1,175	700	925	850	1,100	550	750	875	1,050	1,325	1,325	2,575	1,875	1,600	2,175	1,825	1,525	1,750	1,500	1,200

HOB_{fs} = 65 m
Low HOB_{min} = 115 m
High HOB_{min} = 259 m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 7.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							1,775			3,650			0–5				0–650	
1,150							1,825			3,675			0–5				0–750	
1,100							1,850			3,675			0–10				0–800	
1,050							1,875	0		3,675			0–10				0–850	
1,000							1,900	150		3,675			0–15				0–950	
950							1,925	350		3,675		0	0–20			0	0–1,000	
900							1,950	450		3,650		0–5	0–25			0–50	0–1,050	
850							1,975	550		3,625		0–5	0–35			0–350	0–1,050	
800							2,000	625		3,600		0–5	5–45			0–450	50–1,100	
775							2,000	650		3,600		0–5	5–55			0–500	200–1,150	
750							2,025	675		3,600		0–10	5–70			0–550	300–1,150	
725							2,025	700		3,575		0–10	5–85			0–550	350–1,150	
700							2,025	725		3,575		0–10	5–100			0–600	400–1,200	
675							2,050	750		3,550		0–15	5–125			0–600	450–1,200	
650							2,050	775		3,550		0–15	10–160			0–650	500–1,200	
625				0			2,050	800		3,525	0	0–20	10–200		0	0–700	500–1,200	
600				50			2,075	800		3,525	0–5	0–20	10–240		0–50	0–700	550–1,250	
575				125			2,075	825		3,500	0–5	0–25	15–300		0–200	0–700	600–1,250	
550				175			2,075	850	0	3,475	0–5	0–35	15–380		0–250	0–750	600–1,250	
525				225			2,075	875	125	3,450	0–5	0–45	20–500		0–300	0–750	650–1,250	
500	0			275			2,100	875	200	3,450	0–10	5–50	25–600		0–350	50–800	650–1,300	
475	50			325		0	2,100	900	250	3,425	0–10	5–75	40–900		0–400	150–800	650–1,300	
450	125			375		575	2,100	900	300	3,400	0–15	5–100	50–1,140		0–400	250–800	700–1,300	
425	175		0	400		600	2,100	925	325	3,375	0–15	5–125	60–1,500		0–450	300–800	700–1,300	
400	225		25	425		600	2,125	925	375	3,350	0–20	10–170	80–1,980		0–450	300–850	700–1,300	
375	350	0	75	475		600	2,125	950	400	3,325	0–25	10–220	120–2,600		0–500	350–850	750–1,300	
350	475	25	125	475		625	2,125	950	400	3,300	0–30	15–270	140–3,200		0–500	400–850	750–1,350	
325	500	75	175	500		625	2,125	950	425	3,275	0–40	15–330	160–3,960		0–500	400–850	750–1,350	
300	550	100	200	525		625	2,125	975	450	3,250	5–45	20–390	200–4,680		50–550	400–850	750–1,350	
275	575	150	250	550		625	2,125	975	475	3,225	5–55	20–470	230–5,650	0	150–550	450–900	800–1,350	0
250	575	175	275	550		625	2,125	975	475	3,200	5–65	25–550	270–6,600	0–5	200–550	450–900	800–1,350	0–50
225	600	225	275	575	0	650	2,150	975	500	3,175	5–75	30–650	320–7,800	0–5	200–600	450–900	800–1,350	0–150
200	625	275	300	600	450	650	2,150	1,000	500	3,150	5–100	40–900	440–10,800	0–5	250–600	500–900	800–1,350	0–150
175	650	350	325	600	525	650	2,150	1,000	500	3,125	5–125	50–1,100	540–13,200	0–5	250–600	500–900	800–1,350	0–200
150	650	375	325	625	550	650	2,150	1,000	525	3,075	10–160	60–1,400	680–16,800	0–5	300–600	500–900	800–1,350	0–200
125	650	375	350	625	575	650	2,075	975	525	3,050	10–200	75–1,850	900–22,200	0–5	300–600	500–900	800–1,350	0–250
100	650	375	350	650	575	650	1,900	900	475	3,025	10–250	90–2,250	1,080–27,000	0–10	300–600	500–900	800–1,350	0–250
75	650	400	375	625	575	650	1,750	825	450	2,975	15–320	120–2,900	1,400–34,800	0–10	300–600	500–900	800–1,350	0–250
50	625	375	350	600	525	625	1,575	750	400	2,950	FALLOUT GOVERNS							
25	550	350	300	575	500	575	1,425	675	375	2,900								
0	450	300	250	500	425	500	1,250	600	325	2,875								

Figure 7.6b continued.

MGM 1

[1]Medium Guided Missile.

CASUALTY and DAMAGE Tables
Medium Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		400				250				0	1,600	1,600	5,725	3,850	3,275	3,350	1,950	1,375	2,050	1,075	575
1,150		525				425				250	1,750	1,750	5,725	3,875	3,300	3,375	1,975	1,425	2,475	1,125	675
1,100		625				550				425	1,950	1,950	5,750	3,875	3,325	3,400	2,000	1,450	2,700	1,150	750
1,050		700		0		625				525	2,350	2,350	5,750	3,900	3,350	3,400	2,025	1,500	2,750	1,275	825
1,000	0	775		225	0	700			0	625	2,625	2,625	5,750	3,900	3,350	3,425	2,050	1,525	2,750	1,400	875
950	300	825		400	175	775			475	700	2,675	2,675	5,775	3,925	3,375	3,425	2,075	1,550	2,750	1,650	925
900	425	875		500	350	825			625	750	2,700	2,700	5,775	3,925	3,375	3,450	2,100	1,600	2,750	1,800	975
850	525	925		575	450	875		0	800	825	2,700	2,700	5,775	3,950	3,400	3,475	2,125	1,625	2,775	1,875	1,025
800	600	975	0	650	550	925		275	1,150	1,150	2,650	2,650	5,800	3,950	3,400	3,475	2,150	1,650	2,725	1,850	1,075
775	625	1,000	200	675	575	950		350	1,450	1,450	2,650	2,650	5,800	3,950	3,425	3,475	2,150	1,650	2,700	1,850	1,075
750	650	1,025	275	700	600	975		400	1,525	1,525	2,625	2,625	5,800	3,950	3,425	3,475	2,150	1,675	2,675	1,825	1,100
725	675	1,025	325	725	625	975		450	1,550	1,550	2,575	2,575	5,800	3,975	3,425	3,500	2,175	1,675	2,650	1,800	1,125
700	700	1,050	400	750	675	1,000		475	1,550	1,550	2,525	2,525	5,800	3,975	3,425	3,500	2,175	1,700	2,600	1,800	1,125
675	725	1,075	425	775	700	1,025		525	1,525	1,525	2,475	2,475	5,800	3,975	3,425	3,500	2,175	1,700	2,575	1,775	1,150
650	1,000	1,075	475	800	725	1,050	0	550	1,525	1,525	2,450	2,450	5,825	3,975	3,450	3,500	2,200	1,700	2,550	1,750	1,150
625	1,100	1,100	500	825	725	1,050	125	575	1,525	1,525	2,400	2,400	5,825	3,975	3,450	3,500	2,200	1,725	2,500	1,725	1,175
600	1,125	1,125	525	825	750	1,075	200	600	1,500	1,500	2,350	2,350	5,825	3,975	3,450	3,525	2,200	1,725	2,475	1,700	1,200
575	1,125	1,125	550	850	775	1,075	275	625	1,500	1,500	2,325	2,325	5,825	4,000	3,450	3,525	2,225	1,750	2,425	1,675	1,200
550	1,150	1,150	575	875	800	1,100	325	650	1,475	1,475	2,275	2,275	5,825	4,000	3,450	3,525	2,225	1,750	2,400	1,650	1,225
525	1,150	1,150	600	875	800	1,100	350	675	1,450	1,450	2,250	2,250	5,825	4,000	3,450	3,525	2,225	1,750	2,350	1,625	1,225
500	1,150	1,150	625	900	825	1,125	400	700	1,425	1,425	2,200	2,200	5,825	4,000	3,475	3,525	2,225	1,750	2,300	1,600	1,225
475	1,150	1,175	650	900	850	1,125	425	700	1,400	1,400	2,175	2,175	5,825	4,000	3,475	3,525	2,250	1,775	2,275	1,575	1,250
450	1,150	1,175	650	925	850	1,150	450	725	1,375	1,375	2,150	2,150	5,825	4,000	3,475	3,525	2,250	1,775	2,225	1,550	1,250
425	1,150	1,175	675	925	875	1,150	475	750	1,350	1,350	2,100	2,100	5,825	4,000	3,475	3,525	2,250	1,775	2,175	1,550	1,275
400	1,150	1,200	700	950	875	1,150	500	750	1,350	1,350	2,075	2,075	5,825	4,000	3,475	3,550	2,250	1,775	2,125	1,550	1,275
375	1,150	1,200	700	950	875	1,175	525	775	1,325	1,325	2,050	2,050	5,850	4,025	3,475	3,550	2,250	1,800	2,100	1,575	1,275
350	1,150	1,200	725	975	900	1,175	525	775	1,300	1,300	2,025	2,025	5,850	4,025	3,475	3,550	2,250	1,800	2,050	1,575	1,275
325	1,150	1,225	725	975	900	1,175	550	775	1,275	1,275	1,975	1,975	5,850	4,025	3,475	3,550	2,275	1,800	2,025	1,575	1,300
300	1,150	1,225	750	975	925	1,175	550	800	1,275	1,275	1,950	1,950	5,850	4,025	3,500	3,550	2,275	1,800	2,000	1,575	1,300
275	1,150	1,225	750	1,000	925	1,200	575	800	1,250	1,250	1,925	1,925	5,850	4,025	3,500	3,550	2,275	1,800	1,950	1,575	1,300
250	1,150	1,225	750	1,000	925	1,200	575	825	1,225	1,225	1,900	1,900	5,850	4,025	3,500	3,550	2,275	1,800	1,925	1,600	1,300
225	1,150	1,250	775	1,000	950	1,200	600	825	1,225	1,225	1,875	1,875	5,850	4,025	3,500	3,500	2,275	1,825	1,900	1,600	1,325
200	1,150	1,250	775	1,000	950	1,200	600	825	1,200	1,200	1,850	1,850	5,850	4,025	3,500	3,550	2,275	1,825	1,875	1,600	1,325
175	1,125	1,250	775	1,000	950	1,200	625	825	1,175	1,175	1,825	1,825	5,725	3,925	3,400	3,500	2,200	1,800	1,825	1,600	1,325
150	1,125	1,250	800	1,000	950	1,225	625	850	1,175	1,175	1,800	1,800	5,400	3,725	3,200	3,325	2,225	1,775	1,850	1,600	1,325
125	1,100	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,775	1,775	5,100	3,525	3,000	3,150	2,175	1,750	1,850	1,600	1,325
100	1,075	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,750	1,750	4,750	3,300	2,800	2,975	2,150	1,725	1,850	1,600	1,325
75	1,050	1,250	800	1,025	950	1,225	625	850	1,125	1,175	1,725	1,725	4,500	3,100	2,625	2,750	2,100	1,700	1,875	1,600	1,325
50	1,025	1,250	800	1,025	975	1,225	625	850	1,125	1,175	1,700	1,700	4,100	2,875	2,425	2,600	2,050	1,675	1,875	1,600	1,325
25	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,750	2,675	2,250	2,425	2,025	1,650	1,875	1,600	1,325
0	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,375	2,475	2,050	2,275	1,975	1,625	1,875	1,600	1,325

HOB_{fs} = 82 m
Low HOB_{min} = 144 m
High HOB_{min} = 326 m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 7.6c.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
							2d degree burns				Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam Hwy and RR brgs	Severe dam float brgs	Exposed skin	2-layer summer uniform	4-layer winter uniform	1 PSI over-pressure	Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							2,625	650		4,625			0–10				0–750	
1,150							2,650	750		4,600			0–10				0–800	
1,100							2,675	825		4,600			0–15				0–900	
1,050							2,700	875		4,575		0	0–20			0	0–950	
1,000							2,700	925		4,550		0–5	0–25			0–50	0–1,000	
950							2,725	975		4,525		0–5	0–35			0–300	0–1,050	
900							2,750	1,025		4,500		0–5	5–45			0–450	50–1,100	
850							2,750	1,075		4,475		0–10	5–65			0–550	350–1,150	
800				0			2,775	1,100		4,450		0–10	5–90			0–600	450–1,150	
775				25			2,775	1,125		4,450	0	0–10	5–110		0	0–650	500–1,200	
750				75			2,800	1,150	0	4,425	0–5	0–15	10–140		0–50	0–700	550–1,200	
725				150			2,800	1,150	75	4,400	0–5	0–15	10–170		0–200	0–700	550–1,200	
700				225			2,800	1,175	200	4,400	0–5	0–20	10–200		0–300	0–750	600–1,250	
675				275			2,800	1,200	275	4,375	0–5	0–25	10–250		0–350	0–750	600–1,250	
650				325			2,825	1,200	325	4,350	0–5	0–30	15–320		0–400	0–800	650–1,250	
625	0			375		0	2,825	1,225	375	4,325	0–5	0–35	20–390		0–450	0–800	700–1,300	
600	75			425		750	2,825	1,225	425	4,325	0–5	5–40	20–480		0–450	50–800	700–1,300	
575	125			475		775	2,825	1,250	450	4,300	0–10	5–50	25–590		0–500	200–850	700–1,300	
550	200			525		775	2,825	1,250	475	4,275	0–10	5–65	30–750		0–550	250–850	750–1,300	
525	250		0	550		775	2,850	1,275	500	4,250	0–10	5–85	40–990		0–600	300–900	750–1,350	
500	325		25	575		775	2,850	1,275	525	4,225	0–15	5–100	50–1,200		0–600	350–900	800–1,350	
475	425	0	100	600		775	2,850	1,275	550	4,200	0–20	10–150	75–1,800		0–600	400–900	800–1,350	
450	600	25	150	625	0	800	2,850	1,300	575	4,175	0–25	10–190	100–2,280		0–600	400–900	800–1,350	
425	675	75	200	650	550	800	2,850	1,300	600	4,150	0–30	10–250	120–3,000		0–650	450–950	800–1,350	
400	700	100	250	675	650	800	2,850	1,300	600	4,125	0–40	15–330	160–3,960		0–650	450–950	850–1,350	
375	725	150	275	700	675	800	2,875	1,325	625	4,100	0–50	20–430	210–5,160		0–650	500–950	850–1,400	
350	750	200	325	725	675	825	2,875	1,325	650	4,075	5–60	25–530	260–6,360		50–700	500–950	850–1,400	
325	775	225	350	725	700	825	2,875	1,325	650	4,050	5–75	30–660	320–7,920	0	150–700	500–950	850–1,400	0
300	800	275	350	750	700	825	2,875	1,325	675	4,025	5–90	35–780	380–9,360	0–5	200–700	550–1,000	850–1,400	0–50
275	800	325	375	775	700	825	2,875	1,350	675	4,000	5–105	40–940	460–11,300	0–5	250–700	550–1,000	900–1,400	0–150
250	825	375	400	775	700	850	2,875	1,350	675	3,950	5–125	45–1,100	530–13,200	0–5	250–750	550–1,000	900–1,400	0–200
225	850	425	425	800	725	850	2,875	1,350	700	3,925	10–150	60–1,300	630–15,600	0–5	300–750	600–1,000	900–1,400	0–200
200	850	475	450	825	725	850	2,875	1,350	700	3,900	10–200	75–1,800	870–21,600	0–5	300–750	600–1,000	900–1,400	0–250
175	875	500	450	825	725	850	2,850	1,350	725	3,875	10–250	90–2,200	1,060–26,400	0–10	350–750	600–1,000	900–1,400	0–250
150	875	500	475	850	725	850	2,675	1,275	675	3,825	15–310	120–2,800	1,350–33,600	0–10	350–750	600–1,000	900–1,400	0–300
125	850	500	475	850	725	850	2,500	1,200	650	3,800	20–410	150–3,700	1,780–44,000	0–10	350–750	600–1,000	900–1,400	0–300
100	850	525	475	850	700	825	2,350	1,125	600	3,775	20–500	180–4,500	2,160–54,000	0–15	350–750	600–1,000	900–1,400	0–300
75	825	500	475	825	675	800	2,175	1,050	550	3,725	FALLOUT GOVERNS							
50	775	500	450	775	750	750	2,000	975	525	3,700								
25	700	450	375	725	600	725	1,850	900	475	3,650								
0	600	400	325	650	550	650	1,675	825	450	3,625								

Figure 7.6c continued.

MGM 1

[1]Medium Guided Missile.

CASUALTY and DAMAGE Tables
Medium Guided Missile
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in l-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		600				400			0	125	3,750	3,750	8,575	6,450	5,600	5,225	3,100	2,350	3,750	2,000	675
1,300		700				550			900	900	3,750	3,750	8,575	6,450	5,600	5,225	3,125	2,375	3,750	2,175	750
1,250		800				650			1,125	1,125	3,750	3,750	8,600	6,475	5,625	5,250	3,150	2,400	3,750	2,375	825
1,200	0	875		0		750			1,300	1,300	3,750	3,750	8,600	6,475	5,625	5,250	3,175	2,425	3,750	2,500	925
1,150	250	925		250	0	800			1,425	1,425	3,750	3,750	8,600	6,475	5,625	5,275	3,175	2,450	3,750	2,550	975
1,100	425	975	0	425	250	875			2,125	2,125	3,700	3,700	8,600	6,500	5,650	5,275	3,200	2,475	3,700	2,525	1,025
1,050	550	1,025	150	550	400	950			2,150	2,150	3,700	3,700	8,625	6,500	5,650	5,300	3,225	2,500	3,650	2,500	1,125
1,000	625	1,075	350	625	525	1,000		0	2,175	2,175	3,650	3,650	8,625	6,500	5,675	5,300	3,225	2,500	3,600	2,475	1,225
950	700	1,125	475	700	600	1,050		300	2,175	2,175	3,600	3,600	8,625	6,500	5,675	5,300	3,250	2,525	3,550	2,425	1,375
900	1,350	1,350	550	775	675	1,075		425	2,150	2,150	3,500	3,500	8,625	6,525	5,675	5,325	3,250	2,550	3,475	2,400	1,450
850	1,575	1,575	650	825	750	1,125		525	2,125	2,125	3,400	3,400	8,650	6,525	5,675	5,325	3,275	2,550	3,400	2,350	1,475
800	1,625	1,625	700	875	800	1,150		600	2,100	2,100	3,300	3,300	8,650	6,525	5,700	5,325	3,300	2,575	3,325	2,300	1,450
775	1,625	1,625	725	900	825	1,175	0	625	2,100	2,100	3,250	3,250	8,650	6,525	5,700	5,325	3,300	2,575	3,300	2,275	1,450
750	1,625	1,625	750	925	850	1,200	125	650	2,075	2,075	3,250	3,250	8,650	6,525	5,700	5,350	3,300	2,600	3,250	2,250	1,425
725	1,650	1,650	775	925	850	1,200	225	675	2,050	2,050	3,200	3,200	8,650	6,525	5,700	5,350	3,300	2,600	3,225	2,225	1,425
700	1,650	1,650	800	950	875	1,225	300	700	2,050	2,050	3,150	3,150	8,650	6,525	5,700	5,350	3,325	2,600	3,175	2,175	1,400
675	1,650	1,650	825	975	900	1,250	350	725	2,025	2,025	3,100	3,100	8,650	6,550	5,725	5,350	3,325	2,625	3,125	2,150	1,375
650	1,650	1,650	850	1,000	925	1,250	400	750	2,000	2,000	3,050	3,050	8,650	6,550	5,725	5,350	3,325	2,625	3,075	2,125	1,350
625	1,650	1,650	850	1,000	925	1,250	425	775	1,975	1,975	3,000	3,000	8,675	6,550	5,725	5,350	3,325	2,625	3,050	2,100	1,375
600	1,650	1,650	875	1,025	950	1,275	475	800	1,950	1,950	3,000	3,000	8,675	6,550	5,725	5,375	3,325	2,625	3,000	2,100	1,375
575	1,650	1,650	900	1,025	975	1,275	500	825	1,925	1,925	2,950	2,950	8,675	6,550	5,725	5,375	3,350	2,650	2,950	2,075	1,400
550	1,650	1,650	900	1,050	975	1,300	525	825	1,900	1,900	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,900	2,050	1,400
525	1,650	1,650	925	1,050	1,000	1,300	550	850	1,875	1,875	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,850	2,025	1,425
500	1,650	1,650	950	1,075	1,000	1,325	575	850	1,850	1,850	2,850	2,850	8,675	6,575	5,725	5,375	3,350	2,650	2,825	2,025	1,425
475	1,650	1,650	950	1,075	1,025	1,325	600	875	1,825	1,825	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,775	2,000	1,425
450	1,650	1,650	975	1,100	1,025	1,325	625	875	1,800	1,800	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,750	1,975	1,425
425	1,650	1,650	975	1,100	1,050	1,350	625	900	1,775	1,775	2,750	2,750	8,675	6,575	5,725	5,375	3,350	2,675	2,725	1,950	1,450
400	1,650	1,650	975	1,125	1,050	1,350	650	900	1,750	1,750	2,700	2,700	8,675	6,575	5,725	5,375	3,350	2,675	2,700	1,950	1,450
375	1,650	1,650	1,000	1,125	1,050	1,350	650	925	1,725	1,725	2,700	2,700	8,675	6,575	5,800	5,375	3,350	2,675	2,650	1,925	1,450
350	1,650	1,650	1,000	1,125	1,075	1,375	675	925	1,700	1,700	2,650	2,650	8,675	6,575	5,800	5,375	3,375	2,675	2,625	1,900	1,475
325	1,650	1,650	1,025	1,150	1,075	1,375	675	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,600	1,900	1,475
300	1,650	1,650	1,025	1,150	1,075	1,375	700	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,575	1,875	1,475
275	1,650	1,650	1,025	1,150	1,100	1,375	700	950	1,650	1,650	2,550	2,550	8,675	6,575	5,800	5,375	3,375	2,675	2,550	1,875	1,475
250	1,650	1,650	1,025	1,150	1,100	1,400	725	975	1,625	1,625	2,550	2,550	8,600	6,500	5,675	5,350	3,300	2,650	2,525	1,850	1,475
225	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,625	1,625	2,500	2,500	8,000	6,225	5,425	5,100	3,200	2,575	2,500	1,850	1,500
200	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,600	1,600	2,500	2,500	7,750	5,950	5,175	4,875	3,100	2,500	2,475	1,825	1,500
175	1,600	1,600	1,050	1,175	1,100	1,400	750	975	1,600	1,600	2,450	2,450	7,500	5,675	4,925	4,650	2,975	2,400	2,450	1,825	1,500
150	1,575	1,575	1,050	1,175	1,125	1,400	750	975	1,575	1,575	2,450	2,450	7,100	5,400	4,700	4,425	2,875	2,325	2,425	1,800	1,500
125	1,550	1,550	1,050	1,175	1,125	1,400	750	975	1,550	1,550	2,400	2,400	6,750	5,100	4,450	4,200	2,775	2,250	2,400	1,800	1,500
100	1,525	1,525	1,050	1,175	1,125	1,400	750	1,000	1,550	1,550	2,400	2,400	6,400	4,825	4,200	3,975	2,675	2,175	2,375	1,800	1,500
75	1,475	1,475	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,350	2,350	6,050	4,550	3,950	3,725	2,550	2,100	2,350	1,800	1,500
50	1,425	1,425	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,300	2,300	5,600	4,275	3,700	3,500	2,450	2,025	2,350	1,800	1,500
25	1,350	1,350	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	5,300	4,025	3,475	3,300	2,350	1,950	2,325	1,800	1,500
0	1,300	1,300	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	4,850	3,750	3,250	3,100	2,250	1,875	2,300	1,800	1,500

HOB_{fs} = 111 m

Low HOB_{min} = 196 m

High HOB_{min} = 442 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 7.6d.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350							3,700	1,550		6,175			0–10				0–800	
1,300							3,700	1,600		6,150			0–10				0–850	
1,250							3,725	1,625		6,125			0–15				0–950	
1,200							3,750	1,675	0	6,100		0	0–15			0	0–1,000	
1,150							3,750	1,700	300	6,075		0–5	0–25			0–50	0–1,050	
1,100				0			3,775	1,750	450	6,050		0–5	0–30			0–350	0–1,100	
1,050				25			3,775	1,775	550	6,025		0–5	5–40			0–500	50–1,150	
1,000				175			3,800	1,800	650	6,000		0–5	5–60			0–600	350–1,200	
950				300			3,825	1,825	725	5,950		0–10	5–80			0–650	500–1,250	
900				425		0	3,825	1,850	775	5,925		0–10	5–110			0–750	550–1,300	
850	0			550		1,175	3,825	1,875	825	5,875	0	0–15	10–160		0	0–800	650–1,300	
800	150			650		1,225	3,850	1,900	875	5,850	0–5	0–20	10–230		0–50	0–850	700–1,350	
775	225			700		1,225	3,850	1,900	900	5,825	0–5	0–25	15–270		0–200	0–850	750–1,350	
750	275			725	0	1,225	3,850	1,925	925	5,800	0–5	0–30	15–330		0–300	0–900	750–1,400	
725	350			775	800	1,225	3,875	1,925	950	5,775	0–5	0–35	20–410		0–350	0–900	800–1,400	
700	400		0	800	875	1,225	3,875	1,925	950	5,750	0–5	5–45	20–500		0–400	50–950	800–1,400	
675	475		50	850	900	1,225	3,875	1,950	975	5,725	0–10	5–55	25–620		0–450	200–950	850–1,400	
650	600	0	125	875	900	1,225	3,875	1,950	975	5,700	0–10	5–65	35–780		0–500	300–950	850–1,450	
625	825	25	175	900	925	1,250	3,875	1,975	1,025	5,675	0–10	5–80	40–960		0–500	350–1,000	850–1,450	
600	900	50	250	925	925	1,250	3,875	1,975	1,025	5,650	0–15	5–100	50–1,200		0–550	400–1,000	900–1,450	
575	950	100	300	950	925	1,250	3,900	1,975	1,050	5,625	0–15	5–125	60–1,470		0–600	400–1,000	900–1,450	
550	975	150	350	975	950	1,250	3,900	1,975	1,050	5,600	0–20	10–155	75–1,860		0–600	450–1,050	900–1,450	
525	1,000	200	375	1,000	950	1,250	3,900	2,000	1,075	5,575	0–25	10–205	100–2,460		0–600	450–1,050	950–1,500	
500	1,025	225	425	1,000	950	1,250	3,900	2,000	1,075	5,550	5–30	10–250	120–3,000		50–650	500–1,050	950–1,500	
475	1,075	275	450	1,025	950	1,250	3,900	2,000	1,100	5,525	5–45	15–375	180–4,500	0	150–650	550–1,050	950–1,500	0
450	1,100	325	475	1,050	950	1,250	3,900	2,000	1,100	5,500	5–55	20–475	230–5,700	0–5	250–700	550–1,100	1,000–1,500	0–50
425	1,100	350	500	1,075	975	1,250	3,900	2,025	1,100	5,475	5–70	25–625	300–7,500	0–5	300–700	600–1,100	1,000–1,500	0–150
400	1,125	400	525	1,100	975	1,250	3,900	2,025	1,125	5,450	5–90	35–825	400–9,900	0–5	300–700	600–1,100	1,000–1,500	0–200
375	1,150	450	550	1,100	1,000	1,250	3,900	2,025	1,125	5,425	5–120	45–1,080	520–12,900	0–5	350–750	600–1,100	1,000–1,550	0–250
350	1,175	500	575	1,125	1,000	1,250	3,925	2,025	1,125	5,400	10–150	55–1,330	640–15,900	0–5	400–750	650–1,100	1,000–1,550	0–300
325	1,200	575	600	1,150	1,000	1,250	3,925	2,025	1,150	5,350	10–190	70–1,650	800–19,800	0–5	400–750	650–1,150	1,000–1,550	0–350
300	1,225	650	600	1,175	1,025	1,250	3,925	2,050	1,150	5,325	10–215	80–1,950	940–23,400	0–5	400–750	650–1,150	1,050–1,550	0–350
275	1,225	675	625	1,175	1,025	1,250	3,925	2,050	1,150	5,300	15–260	100–2,350	1,130–28,200	0–10	450–800	650–1,150	1,050–1,550	0–400
250	1,250	700	650	1,200	1,025	1,250	3,850	2,025	1,150	5,275	15–310	110–2,750	1,320–33,000	0–10	450–800	700–1,150	1,050–1,550	0–400
225	1,250	725	650	1,200	1,050	1,250	3,700	1,950	1,125	5,225	15–360	130–3,250	1,560–39,000	0–10	450–800	700–1,150	1,050–1,550	0–400
200	1,250	725	675	1,225	1,050	1,250	3,550	1,850	1,075	5,200	20–500	180–4,500	2,160–54,000	0–15	500–800	700–1,150	1,050–1,550	0–450
175	1,250	750	675	1,225	1,075	1,250	3,400	1,775	1,025	5,175	25–610	220–5,500	2,640–66,000	0–15	500–800	700–1,150	1,050–1,550	0–450
150	1,225	750	700	1,225	1,075	1,225	3,275	1,700	975	5,125	35–770	280–7,000	3,360–84,000	0–20	500–800	700–1,150	1,050–1,550	0–450
125	1,225	750	700	1,200	1,050	1,225	3,125	1,600	950	5,100	45–1,020	370–9,250	4,440–111,000	5–25	500–800	700–1,150	1,050–1,550	0–450
100	1,200	725	675	1,175	1,025	1,200	2,975	1,525	900	5,050	FALLOUT GOVERNS							
75	1,150	725	650	1,150	975	1,150	2,825	1,450	850	5,025								
50	1,075	675	600	1,100	925	1,125	2,675	1,375	800	5,000								
25	975	650	525	1,025	875	1,075	2,525	1,275	750	4,950								
0	825	550	450	950	800	975	2,375	1,200	725	4,925								

Figure 7.6d continued.

MGM 1

[1]Medium Guided Missile.

CASUALTY and DAMAGE Tables
Medium Guided Missile
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		975	0	0		800			2,650	2,650	4,600	4,600	11,325	8,900	7,575	7,100	4,475	3,400	4,625	3,150	1,350
1,300		1,025	125	125	0	875			2,700	2,700	4,550	4,550	11,325	8,900	7,600	7,100	4,475	3,425	4,575	3,125	1,475
1,250		1,100	250	375	200	950			2,700	2,700	4,500	4,500	11,350	8,900	7,600	7,125	4,500	3,425	4,525	3,100	1,600
1,200		1,150	375	500	400	1,000			2,700	2,700	4,450	4,450	11,350	8,925	7,600	7,125	4,500	3,450	4,475	3,075	1,725
1,150	0	1,200	475	625	525	1,075		0	2,675	2,675	4,400	4,400	11,350	8,925	7,625	7,125	4,525	3,475	4,400	3,025	1,825
1,100	1,950	1,950	550	700	625	1,125		175	2,650	2,650	4,300	4,300	11,350	8,925	7,625	7,125	4,525	3,475	4,325	2,975	1,875
1,050	2,100	2,100	625	775	700	1,175		375	2,600	2,600	4,250	4,250	11,350	8,950	7,625	7,150	4,550	3,500	4,250	2,925	1,850
1,000	2,150	2,150	675	825	775	1,200		500	2,600	2,600	4,150	4,150	11,350	8,950	7,625	7,150	4,550	3,525	4,175	2,875	1,825
950	2,175	2,175	725	900	825	1,250		575	2,575	2,575	4,050	4,050	11,350	8,950	7,650	7,150	4,575	3,525	4,100	2,825	1,800
900	2,175	2,175	775	950	900	1,275	0	650	2,525	2,525	4,000	4,000	11,375	8,950	7,650	7,175	4,575	3,550	4,025	2,775	1,775
850	2,175	2,175	800	1,000	950	1,325	175	725	2,475	2,475	3,900	3,900	11,375	8,950	7,650	7,175	4,575	3,550	3,950	2,725	1,725
800	2,175	2,175	825	1,025	975	1,350	350	775	2,450	2,450	3,800	3,800	11,375	8,950	7,650	7,175	4,600	3,575	3,850	2,675	1,675
775	2,175	2,175	825	1,050	1,000	1,350	400	800	2,425	2,425	3,800	3,800	11,375	8,975	7,650	7,175	4,600	3,575	3,800	2,650	1,650
750	2,175	2,175	825	1,075	1,025	1,375	450	825	2,400	2,400	3,750	3,750	11,375	8,975	7,675	7,175	4,600	3,575	3,775	2,625	1,625
725	2,175	2,175	850	1,075	1,050	1,400	475	850	2,375	2,375	3,700	3,700	11,375	8,975	7,675	7,175	4,600	3,575	3,725	2,600	1,600
700	2,175	2,175	850	1,100	1,050	1,400	525	875	2,350	2,350	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,675	2,600	1,575
675	2,175	2,175	850	1,100	1,075	1,425	550	875	2,325	2,325	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,625	2,575	1,500
650	2,175	2,175	850	1,125	1,075	1,425	575	900	2,300	2,300	3,600	3,600	11,400	8,975	7,675	7,200	4,625	3,600	3,575	2,550	1,525
625	2,175	2,175	850	1,150	1,100	1,450	600	925	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,550	2,525	1,525
600	2,175	2,175	850	1,150	1,125	1,450	625	950	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,525	2,525	1,550
575	2,175	2,175	875	1,175	1,125	1,450	650	950	2,250	2,250	3,500	3,500	11,400	9,000	7,675	7,200	4,625	3,625	3,475	2,500	1,550
550	2,175	2,175	900	1,175	1,150	1,475	675	975	2,225	2,225	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,450	2,475	1,550
525	2,175	2,175	900	1,200	1,150	1,475	700	975	2,200	2,200	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,425	2,475	1,575
500	2,175	2,175	925	1,200	1,150	1,475	725	1,000	2,175	2,175	3,400	3,400	11,400	9,000	7,675	7,200	4,650	3,625	3,375	2,450	1,575
475	2,175	2,175	925	1,225	1,175	1,500	725	1,000	2,175	2,175	3,350	3,350	11,400	9,000	7,675	7,200	4,650	3,625	3,350	2,425	1,600
450	2,175	2,175	950	1,225	1,175	1,500	750	1,025	2,150	2,150	3,350	3,350	11,400	9,000	7,675	7,225	4,650	3,625	3,325	2,425	1,600
425	2,175	2,175	950	1,225	1,200	1,500	750	1,025	2,125	2,125	3,300	3,300	11,400	9,000	7,675	7,225	4,650	3,625	3,300	2,400	1,600
400	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,100	2,100	3,250	3,250	11,400	9,000	7,675	7,225	4,650	3,625	3,275	2,375	1,600
375	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,075	2,075	3,250	3,250	11,400	9,000	7,700	7,225	4,650	3,625	3,250	2,375	1,625
350	2,175	2,175	975	1,250	1,225	1,525	800	1,050	2,075	2,075	3,200	3,200	11,400	9,000	7,700	7,225	4,650	3,650	3,225	2,350	1,625
325	2,175	2,175	1,000	1,250	1,225	1,525	800	1,075	2,050	2,050	3,200	3,200	11,200	8,650	7,525	7,050	4,550	3,550	3,200	2,350	1,625
300	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,050	2,050	3,150	3,150	10,850	8,400	7,275	6,825	4,400	3,450	3,150	2,325	1,625
275	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,025	2,025	3,150	3,150	10,400	8,125	7,025	6,600	4,275	3,350	3,125	2,325	1,625
250	2,125	2,125	1,025	1,275	1,250	1,550	825	1,075	2,025	2,025	3,100	3,100	10,100	7,850	6,775	6,375	4,125	3,250	3,125	2,300	1,650
225	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,100	3,100	9,800	7,550	6,550	6,150	3,975	3,125	3,100	2,300	1,650
200	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,050	3,050	9,400	7,250	6,300	5,925	3,825	3,025	3,075	2,275	1,650
175	2,075	2,075	1,025	1,300	1,250	1,550	850	1,100	1,975	1,975	3,050	3,050	9,050	6,950	6,050	5,700	3,675	2,900	3,050	2,275	1,650
150	2,025	2,025	1,025	1,300	1,250	1,550	850	1,100	1,950	1,950	3,000	3,000	8,700	6,650	5,800	5,475	3,525	2,800	3,025	2,250	1,650
125	2,000	2,000	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	3,000	3,000	8,350	6,375	5,550	5,225	3,375	2,700	3,000	2,250	1,650
100	1,950	1,950	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	2,950	2,950	7,975	6,100	5,300	5,000	3,250	2,600	2,975	2,225	1,650
75	1,900	1,900	1,050	1,300	1,275	1,575	875	1,100	1,900	1,900	2,950	2,950	7,600	5,825	5,050	4,750	3,125	2,500	2,950	2,225	1,650
50	1,850	1,850	1,050	1,300	1,275	1,575	875	1,125	1,900	1,900	2,900	2,900	7,250	5,550	4,825	4,525	2,950	2,375	2,950	2,225	1,650
25	1,775	1,775	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,825	5,275	4,600	4,325	2,825	2,250	2,925	2,200	1,650
0	1,700	1,700	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,400	5,000	4,350	4,125	2,700	2,150	2,900	2,200	1,650

HOB_{fs} = 140 m

Low HOB_{min} = 246 m

High HOB_{min} = 557 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 7.6e.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod Dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced Contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350				0			5,500	2,425	725	7,600			0–15				0–950	
1,300				100			5,525	2,450	825	7,575		0	0–20			0	0–1,050	
1,250				250			5,525	2,475	900	7,550		0–5	0–25			0–50	0–1,100	
1,200				400		0	5,550	2,500	950	7,500		0–5	0–30			0–400	0–1,150	
1,150				525		1,550	5,550	2,525	1,025	7,475		0–5	5–45			0–550	50–1,200	
1,100	0			650		1,650	5,550	2,550	1,075	7,425		0–5	5–60			0–600	350–1,250	
1,050	50			775		1,675	5,575	2,575	1,125	7,400		0–10	5–80			0–700	500–1,300	
1,000	200			875		1,675	5,575	2,600	1,175	7,350		0–10	5–120			0–800	600–1,350	
950	350			950	0	1,675	5,600	2,625	1,200	7,325	0	0–15	10–160		0	0–850	650–1,400	
900	475		0	1,050	1,175	1,675	5,600	2,625	1,250	7,275	0–5	0–20	10–220		0–50	0–900	750–1,400	
850	650		75	1,125	1,200	1,675	5,600	2,650	1,275	7,225	0–5	0–30	15–320		0–350	0–950	800–1,450	
800	950	0	200	1,175	1,225	1,675	5,625	2,650	1,300	7,175	0–5	5–40	20–450		0–450	50–1,000	850–1,450	
775	1,150	25	275	1,200	1,250	1,675	5,625	2,675	1,325	7,150	0–5	5–45	25–530		0–500	200–1,000	850–1,500	
750	1,200	75	325	1,225	1,250	1,675	5,625	2,675	1,350	7,125	0–10	5–55	30–660		0–550	300–1,050	900–1,500	
725	1,250	125	400	1,250	1,250	1,675	5,625	2,675	1,350	7,100	0–10	5–70	35–810		0–550	350–1,050	900–1,500	
700	1,300	175	450	1,275	1,275	1,675	5,625	2,700	1,375	7,075	0–10	5–90	40–990		0–600	400–1,050	950–1,500	
675	1,325	225	475	1,300	1,275	1,675	5,625	2,700	1,375	7,050	0–15	5–110	50–1,230		0–600	450–1,100	950–1,550	
650	1,350	275	525	1,325	1,275	1,675	5,625	2,700	1,400	7,025	0–15	10–130	65–1,560		0–650	500–1,100	950–1,550	
625	1,375	325	575	1,325	1,275	1,675	5,625	2,700	1,400	7,000	0–20	10–160	80–1,920		0–700	500–1,100	1,000–1,550	
600	1,400	350	600	1,350	1,275	1,675	5,650	2,725	1,425	6,975	0–25	10–200	100–2,400		0–700	550–1,100	1,000–1,550	
575	1,425	400	625	1,375	1,275	1,675	5,650	2,725	1,425	6,950	0–30	10–245	120–2,940		0–700	600–1,150	1,000–1,550	
550	1,450	450	650	1,400	1,300	1,675	5,650	2,725	1,425	6,925	5–35	15–310	150–3,720		50–750	600–1,150	1,050–1,600	
525	1,475	500	675	1,425	1,300	1,675	5,650	2,725	1,450	6,875	5–50	20–410	200–4,920	0	100–750	650–1,150	1,050–1,600	0
500	1,500	550	700	1,450	1,300	1,675	5,650	2,725	1,450	6,850	5–55	20–500	240–6,000	0–5	250–800	650–1,150	1,050–1,600	0–50
475	1,525	600	725	1,450	1,300	1,675	5,650	2,750	1,450	6,825	5–85	30–750	360–9,000	0–5	300–800	650–1,150	1,050–1,600	0–150
450	1,550	650	750	1,475	1,300	1,675	5,650	2,750	1,475	6,800	5–105	40–950	460–11,400	0–5	350–800	700–1,150	1,100–1,600	0–250
425	1,575	700	775	1,500	1,300	1,675	5,650	2,750	1,475	6,775	10–140	50–1,250	600–15,000	0–5	350–800	700–1,200	1,100–1,600	0–300
400	1,600	775	800	1,525	1,325	1,675	5,650	2,750	1,475	6,750	10–190	70–1,650	800–19,800	0–10	400–850	700–1,200	1,100–1,650	0–300
375	1,600	850	800	1,550	1,325	1,650	5,650	2,750	1,500	6,700	10–240	90–2,150	1,040–25,800	0–10	450–850	750–1,200	1,100–1,650	0–350
350	1,625	900	825	1,550	1,325	1,650	5,650	2,750	1,500	6,675	15–300	110–2,650	1,280–31,800	0–10	450–850	750–1,250	1,100–1,650	0–400
325	1,650	925	850	1,575	1,325	1,650	5,500	2,700	1,500	6,650	15–370	140–3,300	1,600–39,600	0–10	450–850	750–1,250	1,150–1,650	0–400
300	1,650	950	850	1,575	1,350	1,650	5,325	2,625	1,450	6,625	20–430	160–3,900	1,880–46,800	0–15	500–850	750–1,250	1,150–1,650	0–400
275	1,650	950	875	1,600	1,350	1,650	5,150	2,525	1,400	6,575	25–520	190–4,700	2,260–56,400	0–15	500–900	800–1,250	1,150–1,650	0–450
250	1,650	950	900	1,600	1,350	1,650	4,950	2,450	1,375	6,550	25–610	220–5,500	2,640–66,000	0–15	500–900	800–1,250	1,150–1,650	0–450
225	1,650	975	900	1,600	1,375	1,650	4,775	2,350	1,325	6,525	30–720	260–6,500	3,120–78,000	0–20	550–900	800–1,250	1,150–1,650	0–450
200	1,625	975	925	1,600	1,375	1,650	4,600	2,275	1,275	6,475	40–990	360–9,000	4,320–108,000	0–25	550–900	800–1,250	1,150–1,650	0–500
175	1,625	975	925	1,600	1,375	1,625	4,400	2,175	1,225	6,450	50–1,210	440–11,000	5,280–132,000	0–30	550–900	800–1,250	1,150–1,650	0–500
150	1,600	975	925	1,575	1,350	1,600	4,225	2,100	1,175	6,400	65–1,540	560–14,000	6,720–168,000	5–40	550–900	800–1,250	1,150–1,650	50–500
125	1,575	975	900	1,550	1,325	1,575	4,025	2,025	1,150	6,375								
100	1,525	950	850	1,500	1,300	1,525	3,850	1,925	1,100	6,350	FALLOUT GOVERNS							
75	1,450	925	825	1,475	1,250	1,475	3,675	1,850	1,050	6,300								
50	1,350	875	750	1,400	1,175	1,425	3,475	1,750	1,000	6,275								
25	1,225	825	675	1,325	1,100	1,375	3,300	1,675	950	6,225								
0	1,100	750	600	1,250	1,075	1,325	3,100	1,575	925	6,200								

Figure 7.6e continued.

MGM 1

[1]Medium Guided Missile.

CASUALTY and DAMAGE Tables
Medium Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,700		750	0	0		400			3,350	3,350	5,850	5,850	15,200	11,775	10,350	9,775	6,275	4,750	5,850	4,000	1,700
1,600	0	950	275	275		700			3,375	3,375	5,750	5,750	15,200	11,800	10,375	9,800	6,300	4,800	5,725	3,925	1,925
1,500	175	1,100	500	500	0	900			3,375	3,375	5,600	5,600	15,225	11,800	10,400	9,800	6,325	4,825	5,600	3,850	2,200
1,400	2,450	2,450	675	675	200	1,050			3,350	3,350	5,450	5,450	15,225	11,825	10,400	9,825	6,350	4,850	5,475	3,775	2,350
1,300	2,800	2,800	825	825	550	1,175		0	3,300	3,300	5,300	5,300	15,250	11,825	10,400	9,825	6,375	4,875	5,325	3,675	2,325
1,200	2,875	2,875	900	900	750	1,275		325	3,250	3,250	5,150	5,150	15,250	11,850	10,425	9,850	6,375	4,900	5,175	3,575	2,275
1,100	2,875	2,875	975	975	900	1,350		575	3,175	3,175	5,000	5,000	15,250	11,850	10,425	9,850	6,400	4,925	5,025	3,450	2,200
1,050	2,875	2,875	1,025	1,025	950	1,400		675	3,150	3,150	4,900	4,900	15,275	11,850	10,450	9,850	6,400	4,950	4,925	3,400	2,150
1,000	2,875	2,875	1,025	1,025	1,000	1,425	0	750	3,100	3,100	4,850	4,850	15,275	11,850	10,450	9,850	6,425	4,950	4,850	3,350	2,100
950	2,875	2,875	1,050	1,100	1,050	1,475	250	800	3,050	3,050	4,750	4,750	15,275	11,850	10,450	9,850	6,425	4,975	4,750	3,325	2,050
900	2,875	2,875	1,075	1,125	1,100	1,500	400	850	3,000	3,000	4,700	4,700	15,275	11,850	10,450	9,875	6,425	4,975	4,650	3,275	2,000
850	2,875	2,875	1,075	1,175	1,150	1,525	500	900	2,950	2,950	4,600	4,600	15,275	11,850	10,450	9,875	6,425	4,975	4,550	3,250	1,925
800	2,875	2,875	1,050	1,200	1,175	1,550	575	950	2,900	2,900	4,550	4,550	15,275	11,875	10,450	9,875	6,450	5,000	4,475	3,200	1,875
750	2,875	2,875	1,050	1,225	1,200	1,575	625	1,000	2,875	2,875	4,450	4,450	15,275	11,875	10,475	9,875	6,450	5,000	4,425	3,175	1,825
700	2,875	2,875	1,050	1,275	1,225	1,600	700	1,025	2,825	2,825	4,400	4,400	15,275	11,875	10,475	9,875	6,450	5,000	4,350	3,125	1,775
650	2,875	2,875	1,025	1,300	1,275	1,625	750	1,075	2,775	2,775	4,350	4,350	15,300	11,875	10,475	9,900	6,475	5,000	4,300	3,100	1,725
600	2,875	2,875	1,025	1,325	1,300	1,650	775	1,100	2,750	2,750	4,250	4,250	15,300	11,875	10,475	9,900	6,475	5,025	4,225	3,050	1,700
550	2,875	2,875	1,025	1,325	1,300	1,650	825	1,125	2,700	2,700	4,200	4,200	15,300	11,875	10,475	9,900	6,475	5,025	4,175	3,025	1,675
500	2,875	2,875	1,050	1,350	1,325	1,675	850	1,150	2,650	2,650	4,150	4,150	15,300	11,875	10,475	9,900	6,475	5,025	4,125	3,000	1,700
450	2,875	2,875	1,050	1,375	1,350	1,700	875	1,150	2,625	2,625	4,100	4,100	15,250	11,800	10,300	9,750	6,450	5,025	4,050	2,975	1,700
400	2,850	2,850	1,075	1,375	1,375	1,700	900	1,175	2,600	2,600	4,050	4,050	14,450	11,200	9,825	9,250	6,125	4,800	4,000	2,950	1,725
300	2,800	2,800	1,100	1,425	1,400	1,725	925	1,200	2,500	2,500	3,950	3,950	12,850	9,950	8,750	8,300	5,500	4,325	3,900	2,900	1,750
200	2,700	2,700	1,125	1,425	1,400	1,750	950	1,225	2,450	2,450	3,850	3,850	11,400	8,850	7,700	7,400	4,850	3,850	3,825	2,850	1,750
100	2,525	2,525	1,150	1,450	1,425	1,750	975	1,250	2,400	2,400	3,800	3,800	9,850	7,700	6,700	6,450	4,225	3,375	3,725	2,800	1,750
0	2,250	2,250	1,225	1,450	1,425	1,750	975	1,250	2,350	2,350	3,700	3,700	8,250	6,700	5,700	5,500	3,650	2,900	3,650	2,775	1,775

HOB_{fs} = 327m
Low HOB_{min} = 310m
High HOB_{min} = 702
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 7.6f.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,700				0			7,300	3,250	1,225	9,575			0–5				0–600	
1,600				250		0	7,325	3,300	1,350	9,525			0–10				0–850	
1,500				575		2,000	7,350	3,350	1,475	9,450			0–10				0–1,000	
1,400	0			825		2,250	7,375	3,375	1,575	9,375		0	0–20			0	0–1,150	
1,300	150			1,075	0	2,275	7,375	3,425	1,650	9,300		0–5	0–35			0–400	0–1,250	
1,200	450			1,275	1,625	2,275	7,400	3,450	1,725	9,225		0–5	5–60			0–650	400–1,350	
1,100	750		0	1,425	1,650	2,250	7,425	3,500	1,800	9,125		0–10	5–120			0–800	600–1,450	
1,050	950		150	1,500	1,650	2,250	7,425	3,500	1,825	9,075	0	0–15	10–160		0	0–850	700–1,500	
1,000	1,350	0	300	1,550	1,675	2,250	7,425	3,525	1,850	9,025	0–5	0–20	10–230		0–50	0–950	800–1,500	
950	1,575	100	425	1,600	1,675	2,250	7,450	3,525	1,875	8,975	0–5	0–30	15–320		0–300	0–1,000	850–1,550	
900	1,675	200	550	1,650	1,700	2,250	7,450	3,550	1,900	8,925	0–5	0–40	20–440		0–450	0–1,050	900–1,600	
850	1,750	300	650	1,700	1,725	2,225	7,450	3,550	1,925	8,875	0–10	5–55	25–630		0–550	50–1,050	950–1,600	
800	1,800	400	725	1,750	1,725	2,225	7,450	3,575	1,950	8,825	0–10	5–75	40–890		0–600	300–1,100	1,000–1,650	
750	1,875	475	800	1,800	1,725	2,225	7,450	3,575	1,950	8,775	0–15	5–110	55–1,320		0–700	400–1,150	1,050–1,650	
700	1,925	575	850	1,850	1,725	2,225	7,475	3,600	1,975	8,725	0–20	10–165	80–1,980		0–750	500–1,200	1,050–1,700	
650	1,975	675	900	1,875	1,750	2,225	7,475	3,600	2,000	8,675	0–30	15–260	125–3,120		0–800	550–1,200	1,100–1,700	
600	2,025	775	950	1,925	1,750	2,200	7,475	3,600	2,025	8,600	5–45	20–400	200–4,800	0	50–800	600–1,250	1,100–1,700	0
550	2,050	900	1,000	1,975	1,775	2,200	7,475	3,625	2,025	8,550	5–70	25–620	300–7,440	0–5	250–850	650–1,250	1,150–1,750	0–50
500	2,100	1,050	1,050	2,000	1,775	2,200	7,475	3,625	2,050	8,475	5–110	40–1,000	480–12,000	0–5	350–900	700–1,300	1,150–1,750	0–250
450	2,150	1,150	1,075	2,050	1,800	2,200	7,450	3,625	2,075	8,425	10–210	80–1,900	920–22,800	0–5	400–900	750–1,300	1,200–1,750	0–350
400	2,175	1,225	1,125	2,075	1,800	2,200	7,075	3,475	2,000	8,350	15–370	135–3,300	1,590–39,600	0–10	450–950	750–1,300	1,200–1,800	0–400
300	2,175	1,275	1,175	2,125	1,825	2,075	6,300	3,125	1,800	8,225	FALLOUT GOVERNS							
200	2,125	1,300	1,200	2,100	1,775	2,050	5,550	2,725	1,600	8,100								
100	1,950	1,225	1,100	1,950	1,700	1,925	4,775	2,450	1,425	7,950								
0	1,450	975	800	1,650	1,350	1,725	4,025	2,100	1,225	7,800								

Figure 7.6f continued.

MGM 1

[1] Medium Guided Missile.

CASUALTY and DAMAGE Tables
Medium Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200		0	275	275					4,650	4,650	7,800	7,800	21,700	17,700	15,400	14,200	9,100	7,100	7,800	5,350	2,550
2,100		400	525	525		0			4,650	4,650	7,800	7,650	21,700	17,700	15,500	14,300	9,200	7,100	7,700	5,275	2,825
2,000	0	750	750	750		200			4,650	4,650	7,550	7,550	21,700	17,700	15,500	14,300	8,200	7,100	7,575	5,200	3,050
1,900	3,550	3,550	925	925		650			4,600	4,600	7,400	7,400	21,700	17,700	15,500	14,300	9,200	7,200	7,425	5,125	3,175
1,800	4,000	4,000	1,075	1,075		900			4,500	4,500	7,250	7,250	21,700	17,700	15,500	14,300	9,200	7,200	7,275	5,025	3,175
1,700	4,100	4,100	1,175	1,175	0	1,075			4,450	4,450	7,100	7,100	21,700	17,700	15,500	14,300	9,200	7,200	7,150	4,925	3,125
1,600	4,150	4,150	1,250	1,250	400	1,225			4,350	4,350	6,900	6,900	21,700	17,700	15,500	14,300	9,300	7,200	6,975	4,825	3,075
1,500	4,150	4,150	1,325	1,325	675	1,325		0	4,250	4,250	6,750	6,750	21,700	17,700	15,500	14,300	9,300	7,200	6,825	4,700	3,000
1,400	4,150	4,150	1,400	1,400	875	1,450		325	4,150	4,150	6,600	6,600	21,700	17,700	15,500	14,300	9,300	7,300	6,650	4,600	2,900
1,300	4,150	4,150	1,425	1,425	1,000	1,525	0	625	4,100	4,100	6,450	6,450	21,700	17,700	15,500	14,300	9,300	7,300	6,450	4,500	2,800
1,200	4,150	4,150	1,450	1,450	1,125	1,600	275	800	4,000	4,000	6,300	6,300	21,800	17,700	15,600	14,400	9,300	7,300	6,275	4,425	2,675
1,100	4,150	4,150	1,450	1,450	1,225	1,675	400	925	3,900	3,900	6,200	6,200	21,800	17,800	15,600	14,400	9,300	7,300	6,100	4,350	2,550
1,050	4,150	4,150	1,425	1,425	1,275	1,725	475	1,000	3,850	3,850	6,100	6,100	21,800	17,800	15,600	14,400	9,300	7,300	6,050	4,325	2,500
1,000	4,150	4,150	1,425	1,425	1,300	1,750	575	1,050	3,850	3,850	6,050	6,050	21,800	17,800	15,600	14,400	9,300	7,300	5,975	4,275	2,450
950	4,150	4,150	1,400	1,400	1,350	1,775	650	1,075	3,800	3,800	6,000	6,000	21,800	17,800	15,600	14,400	9,400	7,300	5,900	4,250	2,400
900	4,150	4,150	1,400	1,400	1,375	1,800	725	1,125	3,750	3,750	5,900	5,900	21,800	17,800	15,600	14,400	9,400	7,300	5,850	4,200	2,375
850	4,150	4,150	1,400	1,400	1,400	1,825	775	1,175	3,700	3,700	5,850	5,850	21,800	17,800	15,600	14,400	9,400	7,400	5,775	4,175	2,325
800	4,150	4,150	1,375	1,450	1,450	1,850	825	1,200	3,700	3,700	5,800	5,800	21,800	17,800	15,600	14,400	9,400	7,400	5,725	4,150	2,300
750	4,150	4,150	1,375	1,475	1,475	1,850	875	1,225	3,650	3,650	5,750	5,750	21,800	17,800	15,600	14,400	9,400	7,400	5,675	4,125	2,275
700	4,150	4,150	1,350	1,500	1,500	1,875	925	1,250	3,600	3,600	5,650	5,650	21,800	17,800	15,600	14,400	9,400	7,400	5,600	4,075	2,275
650	4,150	4,150	1,350	1,525	1,600	1,900	950	1,300	3,550	3,550	5,600	5,600	21,800	17,800	15,400	14,300	9,400	7,300	5,550	4,050	2,250
600	4,150	4,150	1,350	1,550	1,700	1,925	975	1,325	3,550	3,550	5,550	5,550	20,800	17,200	15,000	13,900	9,100	7,100	5,500	4,025	2,250
550	4,125	4,125	1,350	1,550	1,750	1,925	1,025	1,350	3,500	3,500	5,500	5,500	19,400	16,500	14,400	13,400	8,700	6,800	5,450	4,000	2,250
500	4,100	4,100	1,350	1,575	1,800	1,950	1,050	1,350	3,450	3,450	5,450	5,450	18,500	15,900	13,900	12,800	8,400	6,600	5,400	3,975	2,250
400	4,025	4,025	1,400	1,600	1,825	1,975	1,075	1,375	3,400	3,400	5,300	5,300	17,600	14,700	12,800	11,800	7,800	6,100	5,300	3,925	2,275
300	3,925	3,925	1,450	1,625	1,850	2,000	1,125	1,400	3,350	3,350	5,200	5,200	16,000	13,500	11,700	10,800	7,100	5,600	5,200	3,875	2,300
200	3,775	3,775	1,500	1,650	1,825	2,000	1,125	1,425	3,300	3,300	5,100	5,100	14,400	12,200	10,600	9,800	6,500	5,200	5,125	3,825	2,325
100	3,550	3,550	1,575	1,650	1,700	2,000	1,150	1,450	3,250	3,250	5,000	5,000	13,000	11,000	9,500	8,800	5,900	4,700	5,050	3,800	2,375
0	3,250	3,250	1,675	1,675	1,650	2,000	1,150	1,450	3,250	3,250	4,450	4,450	11,500	9,700	8,500	7,900	5,300	4,200	4,975	3,775	2,400

HOB_{fs} = 445m
Low HOB_{min} = 420m
High HOB_{min} = 953m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 7.6g.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	*Mod dam wheeled veh*	*Mod dam tks and arty*	*Severe dam sup deps*	*Severe dam radios and elec equip*	*Severe dam hwy and RR brgs*	*Severe dam float brgs*	*2d-degree burns*			*1 PSI over-pressure*	*Induced contamination*							
							Exposed skin	*2-layer summer uniform*	*4-layer winter uniform*		*Intensity of GZ (rad/hr)*				*2 rad/hr radius*			
											Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Type II*	*Type III*	*Type IV*
2,200				275		0	10,475	4,925	2,200	12,925								
2,100				625		3,325	10,500	4,975	2,300	12,875								
2,000				925		3,350	10,500	5,000	2,375	12,800			0				0	
1,900	0			1,200		3,350	10,525	5,050	2,450	12,725			0–5				0–450	
1,800	75			1,450	0	3,325	10,550	5,075	2,525	12,650			0–5				0–750	
1,700	425			1,675	2,150	3,300	10,575	5,125	2,600	12,575			0–10				0–1,000	
1,600	725			1,875	2,225	3,275	10,575	5,150	2,675	12,475		0	0–15			0	0–1,150	
1,500	1,050		0	2,050	2,250	3,250	10,600	5,175	2,725	12,400		0–5	0–25			0–50	0–1,250	
1,400	1,525	0	300	2,200	2,275	3,200	10,600	5,200	2,775	12,300		0–5	5–50			0–550	50–1,400	
1,300	2,250	125	600	2,325	2,300	3,175	10,625	5,225	2,825	12,200		0–10	5–85			0–750	550–1,500	
1,200	2,450	325	825	2,400	2,325	3,150	10,625	5,250	2,875	12,100	0	0–15	10–150		0	0–900	750–1,550	
1,100	2,600	525	1,025	2,525	2,350	3,125	10,650	5,275	2,900	12,000	0–5	0–25	15–290		0–350	0–1,050	900–1,650	
1,050	2,650	625	1,100	2,575	2,350	3,125	10,650	5,275	2,925	11,950	0–5	0–35	20–390		0–500	0–1,100	950–1,650	
1,000	2,700	750	1,175	2,600	2,350	3,100	10,650	5,300	2,950	11,900	0–10	5–50	25–570		0–600	50–1,150	1,000–1,700	
950	2,775	850	1,225	2,650	2,375	3,075	10,650	5,300	2,950	11,825	0–10	5–65	35–780		0–650	300–1,200	1,050–1,750	
900	2,825	950	1,275	2,700	2,375	3,050	10,650	5,325	2,975	11,775	0–10	5–90	45–1,080		0–750	450–1,200	1,100–1,750	
850	2,875	1,050	1,350	2,750	2,375	3,050	10,675	5,325	3,000	11,725	0–15	10–130	65–1,560		0–800	550–1,250	1,150–1,800	
800	2,925	1,150	1,400	2,800	2,400	3,025	10,675	5,325	3,000	11,675	0–25	10–185	90–2,220		0–850	600–1,300	1,150–1,800	
750	2,975	1,275	1,450	2,825	2,400	3,000	10,675	5,350	3,025	11,600	0–35	15–275	135–3,300	0	0–900	700–1,300	1,200–1,800	0
700	3,025	1,450	1,500	2,875	2,400	2,975	10,675	5,350	3,025	11,550	5–50	20–420	200–4,950	0–5	50–950	750–1,350	1,250–1,850	0–50
650	3,050	1,600	1,525	2,925	2,425	2,975	10,625	5,350	3,100	11,475	5–75	30–650	320–7,800	0–5	300–950	800–1,350	1,250–1,850	0–300
600	3,100	1,700	1,575	2,950	2,450	2,950	10,250	5,175	3,000	11,425	5–110	40–1,000	480–12,000	0–5	400–1,000	800–1,400	1,300–1,900	0–400
550	3,125	1,750	1,625	3,000	2,450	2,925	9,875	5,000	2,900	11,350	10–175	65–1,550	750–18,600	0–5	450–1,050	850–1,400	1,300–1,900	0–450
500	3,150	1,800	1,650	3,025	2,450	2,900	9,475	4,825	2,800	11,300	15–280	100–2,500	1,200–30,000	0–10	500–1,050	900–1,450	1,350–1,900	0–500
400	3,125	1,825	1,725	3,075	2,475	2,850	8,725	4,450	2,575	11,150								
300	3,075	1,850	1,750	3,050	2,425	2,825	7,950	4,100	2,375	11,025								
200	2,975	1,825	1,675	2,925	2,375	2,750	7,200	3,750	2,175	10,875								
100	2,650	1,700	1,475	2,725	2,200	2,625	6,425	3,375	1,975	10,750								
0	2,100	1,400	1,150	2,400	1,900	2,500	5,675	3,025	1,775	10,600								

FALLOUT GOVERNS

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Figure 7.6g continued.

[1]Medium Guided Missile.

CONTINGENT EFFECTS Tables
Medium Guided Missile

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.
Impact burst not tabulated, fallout governs.

Yield KT	HOB	Estimated radii in meters of 2 rad/hr contour of induced radiation, 1 hour after burst.				Estimated induced radiation intensity, 1 hour after burst, at GZ. In rad/hr.			
		Soil type I (Liberia, Africa)	Soil type II (Nevada desert)	Soil type III (loam clay, Hawaii)	Soil type IV (beach sand, Pensacola Flo)	Soil type I	Soil type II	Soil type III	Soil type IV
DELTA/5	Low	200–550	450–800	700–1,150	0–100	5–100	40–940	450–11,000	0–5
	High	0–500	400–800	700–1,150	0	0–35	15–275	140–3,300	0
ECHO/10	Low	300–600	500–900	800–1,350	0–200	10–160	60–1,400	680–16,800	0–5
	High	50–550	400–850	750–1,350	0	5–45	20–390	200–4,680	0
FOXTROT/20	Low	350–750	600–1,000	900–1,400	0–300	15–310	120–2,800	1,350–33,600	0–10
	High	50–700	500–950	850–1,400	0	5–60	25–530	260–6,360	0
GOLF/50	Low	500–800	700–1,150	1,050–1,550	0–450	25–610	220–5,500	2,640–66,000	0–15
	High	250–700	550–1,100	1,000–1,500	0–50	5–55	20–475	230–5,700	0–5
HOTEL/100	Low	550–900	800–1,250	1,150–1,650	0–500	40–990	360–9,000	4,320–10,800	0–25
	High	50–750	600–1,150	1,050–1,600	0	5–35	15–310	150–3,720	0
INDIA/200	Low	450–950	750–1,300	1,200–1,800	0–400	15–370	135–3,300	1,590–39,600	0–10
	High	0–750	500–1,200	1,050–1,700	0	0–20	10–165	80–1,980	0
JULIETT/500	Low	500–1,050	900–1,450	1,350–1,900	0–500	15–280	100–2,500	1,200–30,000	0–10
	High	0–750	450–1,200	1,100–1,750	0	0–10	5–90	45–1,080	0
	Low								
	High								

NOTE: For description of chemical composition and effects of variations in chemical composition in soil types, see FM 101-21-1, app III, annex F.

Figure 7.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	OBSTACLES TO MOVEMENT							CASUALTIES TO EXPOSED PERSONNEL		
	Foot and wheeled vehicle movement				Tracked vehicle movement					
	Type I	Type II	Type III	Type IV	Type I	Types II, IVa(d)	Types III, IVa(f)	Type I	Types II, IVa(d)	Types III, IVa(f)
DELTA/5	600	800	900	1,400	600	800	900	400	600	600
ECHO/10	750	1,000	1,100	1,900	750	1,000	1,100	600	800	900
FOXTROT/20	1,050	1,300	1,500	2,400	1,050	1,300	1,500	750	1,000	1,150
GOLF/50	1,650	2,100	2,500	3,900	1,650	2,100	2,500	1,200	1,550	1,700
HOTEL/100	2,000	2,600	3,100	5,000	2,000	2,600	3,100	1,700	2,000	2,250
INDIA/200	2,450	3,200	3,800	6,200	2,450	3,200	3,800	2,000	2,400	2,700
JULIETT/500	3,750	4,800	6,000	9,400	3,750	4,800	6,000	3,150	3,600	4,200

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 7.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	AIRCRAFT SAFETY RADII-meters (See note 2.)		
	Light fixed wing	Recon and obsn hel	Transport and util hel
DELTA/5	9,000	9,000	7,000
ECHO/10	10,000	10,000	9,000
FOXTROT/20	13,000	13,000	11,000
GOLF/50	17,000	16,000	15,000
HOTEL/100	22,000	21,000	18,000
INDIA/200	27,000	26,000	23,000
JULIETT/500	35,000	34,000	31,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of safety.

Figure 7.7c.

CONTINGENT EFFECTS Tables (continued)
Medium Guided Missile

FIRE AREAS (See note.)

Yield KT	*HOB*	*Expected radii for ignition of wildland fuels during fire season—meters*							
		Dry climate (25 percent relative humidity)				*Damp climate (75 percent relative humidity)*			
		Class I	*Class II*	*Class III*	*Class IV*	*Class I*	*Class II*	*Class III*	*Class IV*
DELTA/5	Air	2,000	1,800	1,700	1,400	1,800	1,800	1,500	1,100
	Impact	1,200	1,100	1,000	800	1,100	1,100	900	700
ECHO/10	Air	2,600	2,400	2,200	1,800	2,400	2,400	2,100	1,500
	Impact	1,500	1,400	1,300	1,100	1,400	1,400	1,200	900
FOXTROT/20	Air	3,400	3,200	2,900	2,400	3,200	3,200	2,700	2,000
	Impact	2,000	1,900	1,700	1,400	1,900	1,900	1,500	1,200
GOLF/50	Air	4,900	4,500	4,100	3,300	4,500	4,500	3,800	2,900
	Impact	2,800	2,600	2,300	2,000	2,600	2,600	2,200	1,600
HOTEL/100	Air	6,400	5,900	5,400	4,400	5,900	5,900	4,800	3,700
	Impact	3,500	3,200	3,000	2,500	3,200	3,200	2,800	2,100
INDIA/200	Air	8,300	7,700	7,000	5,800	7,700	7,700	6,400	4,800
	Impact	4,500	4,200	3,800	3,200	4,200	4,200	3,500	2,700
JULIETT/500	Air	11,900	11,000	9,900	8,200	11,000	11,000	9,200	6,900
	Impact	6,200	5,700	5,300	4,400	5,700	5,700	4,900	3,800

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 7.7d.

CRATER DIMENSIONS (See note.)

Yield KT	*Approx crater dimensions for various soil types—meters*							
	Hard rock (granite and sandstone)		*Soft rock (dry soil or soft rock)*		*Saturated soil (water slowly fills crater)*		*Saturated soil (water rapidly fills crater)*	
	Radius	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*
DELTA/5	27	8	34	10	50	15	67	7
ECHO/10	34	10	42	12	63	18	84	8
FOXTROT/20	43	11	53	14	80	21	106	10
GOLF/50	58	14	72	17	108	26	144	12
HOTEL/100	73	17	91	21	136	31	182	15
INDIA/200	92	20	115	24	172	36	229	17
JULIETT/500	124	25	155	31	233	46	310	22

NOTE: Based on contact surface burst, for more detailed analysis, see engineer element.

Figure 7.7e.

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[1]Medium Guided Missile.

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CHAPTER 8
HEAVY GUIDED MISSILE

8.1 GENERAL

a. Orientation. This chapter contains employment data for the heavy guided missile with its associated warhead sections fired from a mobile launcher.

b. Weapon characteristics.

(1) *Yield.* The warhead sections for the heavy guided missile have yields of India/200 KT, Juliett/500 KT, Kilo/1 MT, Lima/2 MT, and Mike/5 MT.

(2) *Fuzing.*

(*a*) The fuzing for the heavy guided missile provides airburst and impact fuzing options. The airburst option is radar-fuzed and can be set for either high or low airburst; these are the only heights of burst available. When the fuze is set for an airburst, the system provides for an option of either contact backup or contact preclusion.

(*b*) The fuzes are preset at the following heights of burst:

Warhead section	*HOB option*	*HOB (meters)*	PE_h *(meters)*
India/200 KT	low	677	100
	high	965	
Juliett/500 KT	low	795	100
	high	1,184	
Kilo/1 MT	low	910	100
	high	1,400	
Lima/2 MT	low	1,056	100
	high	1,673	
Mike/5 MT	low	1,308	100
	high	2,146	

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The minimum and maximum ranges of the heavy guided missile are 50,000 meters and 300,000 meters.

(2) *Tactical system accuracy.* The tactical system errors for the heavy guided missile are independent of range. A CEP of 1,000 meters has been used in the computation of the weapon selection tables. The vertical probable error is 100 meters.

(3) *Unit carrying capacity.* A heavy guided missile unit can draw, transport, and store at any one time a total of four complete rounds per battalion.

(4) *Response time.* The times shown below can be used as a basis for general tactical planning. They are considered to be applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, or faulty test indications will extend the times listed. *For detailed tactical planning, the response times should be the actual times obtained from the artillery unit concerned.*

Situation	*Time (minutes)*	*Remarks*
I[1]	120	For situation I, add 25 minutes if warhead section must be removed and a new warhead section with required yield mated to missile.
II[2]	20	

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[1]Situation I (high readineaa)—the complete round and launcher are in a firing poaition and aurvey ia completed. Preliminary firing data for a specific target are *not* available. Prefire checkouta which can be performed prior to the receipt of a fire misaion have been completed. (May be uaed to engage target of opportunity.)

[2]Situation II (maximum readineaa)—firing data for a apecific target have been computed and applied to the weapon ayatem. The unit ia awaiting an order to fire. (Typical of readineas to engage on-call target.)

(5) *Special considerations.* The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes, for an airburst fuzing option, the radar HOB setting, high or low; it also includes whether contact backup or contact preclusion is desired. When contact backup is chosen, a fallout prediction is made. When an impact fuzing option is selected, the fire mission specifies HOB impact.

[1]Heavy Guided Missile.

EXPOSED Personnel Targets
Heavy Guided Missile

Yield KT	HOB option (HOB-meters) (See note)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o (meters)
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
			1,600	2,400	3,200	4,000	4,800	5,600	6,400	7,200	1,600	2,400	3,200	4,000	4,800	5,600	6,400	7,200	Prompt	Delayed	
200	High (965)	17,300	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	2,850	2,850	1,830 (all yields)
	Low (677)	17,300	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	2,875	2,875	
	Impact	*10,300	.6/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1		.6/.8	.4/.6	.3/.5	.3/.3	.2/.2	.1/.2	.1/.1		2,275	2,275	
			Target radius (meters)								Target radius (meters)										
			4,000	4,800	5,600	6,400	7,200	8,000	8,800	9,600	4,000	4,800	5,600	6,400	7,200	8,000	8,800	9,600			
500	High (1,184)	23,800	.7/.9	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.9	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	4,150	4,150	
	Low (795)	23,800	.7/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.8	.5/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	4,150	4,150	
	Impact	*13,500	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		3,300	3,300	
			Target radius (meters)								Target radius (meters)										
			4,000	5,200	6,400	7,600	8,800	10,000	11,200	12,400	4,000	5,200	6,400	7,600	8,800	10,000	11,200	12,400			
1,000	High (1,400)	30,400	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	5,475	5,475	
	Low (910)	30,400	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	5,450	5,450	
	Impact	*17,100	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	4,350	4,350	
			Target radius (meters)								Target radius (meters)										
			6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000	6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000			
2,000	High (1,673)	39,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	7,225	7,225	
	Low (1,056)	39,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	7,175	7,175	
	Impact	*22,100	.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			.7/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			5,725	5,725	
			Target radius (meters)								Target radius (meters)										
			10,000	12,000	14,000	16,000	18,000	20,000	22,800	24,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000			
5,000	High (2,146)	56,800	.8/.9	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	10,425	10,425	
	Low (1,308)	54,500	.8/.9	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	10,325	10,325	
	Impact	*31,200	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		8,250	8,250	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst –Produces fallout.

*Initial effects only. Fallout governs.

Figure 8.1.

Yield	HOB option (HOB-meters)	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.															Probable minimum R_D		Offset distance d_o
			PROMPT CASUALTIES								DELAYED CASUALTIES								(meters)	
			Target radius (meters)								Target radius (meters)									
KT	(See note)	(meters)	800	1,200	1,600	2,000	2,400	2,800	3,200		1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	Prompt	Delayed	(meters)
200	High (965)	17,300	.0/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1			.1/.4	.1/.3	.1/.2	.1/.2	.1/.1				950	950	1,830
	Low (795)	17,300	.0/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1			.1/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1		1,050	1,150	(all
	Impact	•10,300	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1		.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,150	1,450	yields)
			Target radius (meters)								Target radius (meters)										
			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
500	High (1,184)	23,800	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,400	1,400	
	Low (795)	23,800	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.2/.6	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,350	1,425	
	Impact	•13,500	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.3/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,675	1,675	
			Target radius (meters)								Target radius (meters)										
			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
1,000	High (1,400)	30,400	.4/.7	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.4/.7	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	1,800	1,800	
	Low (910)	30,400	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.4/.7	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	1,700	1,700	
	Impact	•17,100	.6/.8	.5/.8	.4/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.6/.8	.5/.8	.4/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	2,100	2,100	
			Target radius (meters)								Target radius (meters)										
			1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400			
2,000	High (1,673)	39,000	.6/.8	.5/.7	.4/.6	.4/.5	.3/.5	.3/.4	.2/.3	.2/.3	.6/.8	.5/.7	.4/.6	.4/.5	.3/.5	.3/.4	.2/.3	.2/.3	2,225	2,225	
	Low (1,056)	39,000	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.5/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	2,150	2,150	
	Impact	•22,100	.7/.9	.6/.8	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.4	.7/.9	.6/.8	.6/.8	.5/.7	.4/.6	.4/.5	.3/.4	.3/.4	2,650	2,650	
			Target radius (meters)								Target radius (meters)										
			3,000	3,600	4,200	4,800	5,400	6,000	6,600	7,200	3,000	3,600	4,200	4,800	5,400	6,000	6,600	7,200			
5,000	High (2,146)	56,800	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,925	2,925	
	Low (1,308)	54,500	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,900	2,900	
	Impact	•31,200	.7/.8	.6/.8	.5/.6	.4/.5	.4/.4	.3/.4	.2/.3	.2/.3	.7/.8	.6/.8	.5/.6	.4/.5	.4/.4	.3/.4	.2/.3	.2/.3	3,600	3,600	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst –Produces fallout.

Figure 8.2.

•Initial effects only. Fallout governs.

HGM 1

[1]Heavy Guided Missile.

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Yield KT	HOB option (HOB–meters) (See note)	Minimum safe distance (negligible risk, UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o (meters)
			WHEELED VEHICLES									TANKS AND ARTILLERY								
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	(meters)
200	High (965)	17,300	.1/.4	.0/.4	.0/.3	.0/.2	.0/.2	.0/.2	.0/.1		575	.0/.0								0
	Low (677)	17,300	.4/.7	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	1,725	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1		250
	Impact	*10,300	.2/.5	.2/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1		1,450	.0/.4	.0/.4	.0/.4	.0/.4	.0/.3	.1/.3	.1/.3	.1/.2	975
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			2,000	2,800	3,600	4,400	5,200	6,000	6,800	7,600	(meters)	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	(meters)
	High (1,184)	23,800	.5/.7	.4/.6	.2/.4	.1/.3	.1/.2	.0/.2	.0/.1		1,750	.0/.1								0
500	Low (795)	23,800	.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	2,725	.0/.5	.1/.5	.1/.4	.1/.3	.1/.2	.0/.2	.0/.1		775
	Impact	*13,500	.4/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			2,100	.2/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	1,400
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			4,000	4,800	5,600	6,400	7,200	8,000	8,800	9,600	(meters)	2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800	(meters)
	High (1,400)	30,400	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	3,100	.0/.1								250
1,000	Low (910)	30,400	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	3,750	.3/.6	.2/.5	.2/.4	.1/.3	.1/.3	.1/.2	.0/.2	.0/.2	1,325
	Impact	*17,100	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1			2,775	.4/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	.1/.2	1,850
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			4,000	5,200	6,400	7,600	8,800	10,000	11,200	12,400	(meters)	2,400	3,200	4,000	4,800	5,600	6,400	7,200		(meters)
	High (1,673)	39,000	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	4,350	.0/.2	.0/.1							650
2,000	Low (1,056)	39,000	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	5,100	.5/.7	.3/.6	.2/.4	.1/.3	.1/.2	.1/.2	.1/.1		2,075
	Impact	*22,100	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			3,675	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		2,450
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
			8,800	10,000	11,200	12,400	13,600	14,800	16,000	17,200	(meters)	4,000	4,800	5,600	6,400	7,200	8,000	8,800	9,600	(meters)
	High (2,146)	56,800	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	6,550	.1/.2	.0/.2	.0/.1						1,425
5,000	Low (1,308)	54,500	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.2/.2	.1/.2	7,575	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	3,650
	Impact	*31,200	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1			5,300	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	3,525

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 8.3.

HGM 1

[1]Heavy Guided Missile.

Troop Safety Distances—Meters
Heavy Guided Missile

Range	*Yield*	*Height of burst option*	*Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown*								
			Unwarned Exposed			*Warned Exposed*			*Warned Protected*		
			NEG Risk	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*
All ranges 50 km through 300 km	INDIA/ 200 KT	High	17,300	13,900	12,500	11,900	8,500	7,000	7,100	5,600	4,300
		Low	17,300	13,900	12,500	11,900	8,500	7,100	6,600	5,300	4,000
		Impact[1]	10,300	8,700	7,700	7,500	5,700	4,900	5,700	4,800	3,800
	JULIETT/ 500 KT	High	23,800	19,800	17,600	16,400	11,400	9,400	8,500	6,600	4,900
		Low	23,800	19,800	17,600	16,400	11,400	9,400	8,000	6,300	4,400
		Impact[1]	13,500	11,700	10,500	9,900	7,300	6,200	7,000	5,800	4,400
	KILO/ 1,000 KT	High	30,400	25,800	22,900	21,000	14,700	12,000	10,000	7,700	5,500
		Low	30,400	25,800	22,900	21,000	14,700	12,000	9,400	7,300	5,000
		Impact[1]	17,100	14,800	13,300	12,200	9,000	7,600	8,300	6,800	5,100
	LIMA/ 2,000 KT	High	39,000	33,500	29,400	26,700	18,700	15,600	11,900	9,000	6,200
		Low	39,000	33,500	29,400	26,700	18,700	15,600	11,200	8,600	5,600
		Impact[1]	22,100	18,700	17,300	15,500	11,200	9,200	9,900	8,000	5,700
	MIKE/ 5,000 KT	High	56,800	47,700	40,400	37,600	27,100	22,100	15,200	11,400	7,500
		Low	54,500	45,800	38,900	36,100	26,100	21,300	14,100	10,800	6,900
		Impact[1]	31,200	26,700	23,500	21,200	15,600	12,800	12,800	10,200	7,200

NOTE: The troop safety distances include the safety radius for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly disposition. See fig 8.5 for special friendly troop orientations.

[1]Initial effects only. Fallout governs.

Figure 8.4.

The troop safety distances in figure 8.4 are based on the friendly troop orientation shown in figure 1 below. The circular delivery pattern of the heavy guided missile may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ- Desired ground zero.
R_S – Safety rodius
d_b – Buffer distonce.
~~~-Friendly troops.
➡-Direction of fire.

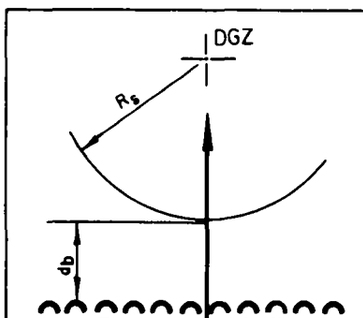

Figure 1. Straight line, perpendicular delivery.

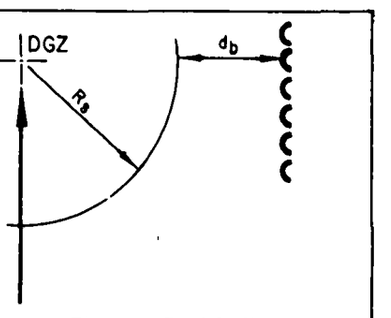

Figure 2. Straight line, parallel delivery.

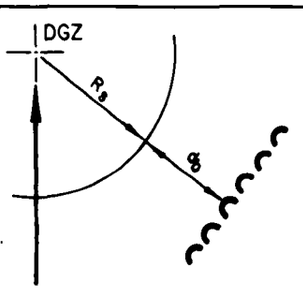

Figure 3. Straight line, 45° delivery.

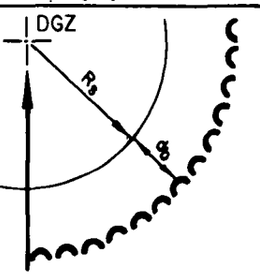

Figure 4. Quarter circle.

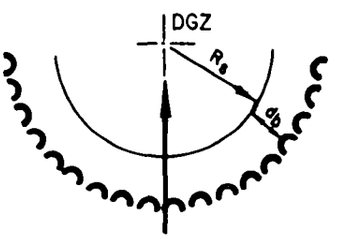

Figure 5. Half circle.

When the apecial friendly troop orientations shown above occur, the tabulated troop aafety distances in figure 8.4 must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minua (–) values are shown below. All figurea shown in meters.

All Height of Burst Options–All Yields				
Range (meters)	*Straight line, parallel delivery (fig 2)*	*Straight line, 45° delivery (fig 3)*	*Quarter circle (fig 4)*	*Half circle (fig 5)*
All ranges	0	0	+300	+600

Figure 8.5.

HGM 1

[1]Heavy Guided Missile.
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CASUALTY and DAMAGE Tables
Heavy Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,700		750	0	0		400			3,350	3,350	5,850	5,850	15,200	11,775	10,350	9,775	6,275	4,750	5,850	4,000	1,700
1,600	0	950	275	275		700			3,375	3,375	5,750	5,750	15,200	11,800	10,375	9,800	6,300	4,800	5,725	3,925	1,925
1,500	175	1,100	500	500	0	900			3,375	3,375	5,600	5,600	15,225	11,800	10,400	9,800	6,325	4,825	5,600	3,850	2,200
1,400	2,450	2,450	675	675	200	1,050			3,350	3,350	5,450	5,450	15,225	11,825	10,400	9,825	6,350	4,850	5,475	3,775	2,350
1,300	2,800	2,800	825	825	550	1,175		0	3,300	3,300	5,300	5,300	15,250	11,825	10,400	9,825	6,375	4,875	5,325	3,675	2,325
1,200	2,875	2,875	900	900	750	1,275		325	3,250	3,250	5,150	5,150	15,250	11,850	10,425	9,850	6,375	4,900	5,175	3,575	2,275
1,100	2,875	2,875	975	975	900	1,350		575	3,175	3,175	5,000	5,000	15,250	11,850	10,425	9,850	6,400	4,925	5,025	3,450	2,200
1,050	2,875	2,875	1,025	1,025	950	1,400		675	3,150	3,150	4,900	4,900	15,275	11,850	10,450	9,850	6,400	4,950	4,925	3,400	2,150
1,000	2,875	2,875	1,025	1,025	1,000	1,425	0	750	3,100	3,100	4,850	4,850	15,275	11,850	10,450	9,850	6,425	4,950	4,850	3,350	2,100
950	2,875	2,875	1,050	1,100	1,050	1,475	250	800	3,050	3,050	4,750	4,750	15,275	11,850	10,450	9,850	6,425	4,975	4,750	3,325	2,050
900	2,875	2,875	1,075	1,125	1,100	1,500	400	850	3,000	3,000	4,700	4,700	15,275	11,850	10,450	9,875	6,425	4,975	4,650	3,275	2,000
850	2,875	2,875	1,075	1,175	1,150	1,525	500	900	2,950	2,950	4,600	4,600	15,275	11,850	10,450	9,875	6,425	4,975	4,550	3,250	1,925
800	2,875	2,875	1,050	1,200	1,175	1,550	575	950	2,900	2,900	4,550	4,550	15,275	11,875	10,450	9,875	6,450	5,000	4,475	3,200	1,875
750	2,875	2,875	1,050	1,225	1,200	1,575	625	1,000	2,875	2,875	4,450	4,450	15,275	11,875	10,475	9,875	6,450	5,000	4,425	3,175	1,825
700	2,875	2,875	1,050	1,275	1,225	1,600	700	1,025	2,825	2,825	4,400	4,400	15,275	11,875	10,475	9,875	6,450	5,000	4,350	3,125	1,775
650	2,875	2,875	1,025	1,300	1,275	1,625	750	1,075	2,775	2,775	4,350	4,350	15,300	11,875	10,475	9,900	6,475	5,000	4,300	3,100	1,725
600	2,875	2,875	1,025	1,325	1,300	1,650	775	1,100	2,750	2,750	4,250	4,250	15,300	11,875	10,475	9,900	6,475	5,025	4,225	3,050	1,700
550	2,875	2,875	1,025	1,325	1,300	1,650	825	1,125	2,700	2,700	4,200	4,200	15,300	11,875	10,475	9,900	6,475	5,025	4,175	3,025	1,675
500	2,875	2,875	1,050	1,350	1,325	1,675	850	1,150	2,650	2,650	4,150	4,150	15,300	11,875	10,475	9,900	6,475	5,025	4,125	3,000	1,700
450	2,875	2,875	1,050	1,375	1,350	1,700	875	1,150	2,625	2,625	4,100	4,100	15,250	11,800	10,300	9,750	6,450	5,025	4,050	2,975	1,700
400	2,850	2,850	1,075	1,375	1,375	1,700	900	1,175	2,600	2,600	4,050	4,050	14,450	11,200	9,825	9,250	6,125	4,800	4,000	2,950	1,725
300	2,800	2,800	1,100	1,425	1,400	1,725	925	1,200	2,500	2,500	3,950	3,950	12,850	9,950	8,750	8,300	5,500	4,325	3,900	2,900	1,750
200	2,700	2,700	1,125	1,425	1,400	1,750	950	1,225	2,450	2,450	3,850	3,850	11,400	8,850	7,700	7,400	4,850	3,850	3,825	2,850	1,750
100	2,525	2,525	1,150	1,450	1,425	1,750	975	1,250	2,400	2,400	3,800	3,800	9,850	7,700	6,700	6,450	4,225	3,375	3,725	2,800	1,750
0	2,250	2,250	1,225	1,450	1,425	1,750	975	1,250	2,350	2,350	3,700	3,700	8,250	6,700	5,700	5,500	3,650	2,900	3,650	2,775	1,775

HOB_{fs} = 327m
Low HOB_{min} = 310m
High HOB_{min} = 702
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 8.6a.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,700				0			7,300	3,250	1,225	9,575			0–5				0–600	
1,600				250		0	7,325	3,300	1,350	9,525			0–10				0–850	
1,500				575		2,000	7,350	3,350	1,475	9,450			0–10				0–1,000	
1,400	0			825		2,250	7,375	3,375	1,575	9,375		0	0–20			0	0–1,150	
1,300	150			1,075	0	2,275	7,375	3,425	1,650	9,300		0–5	0–35			0–400	0–1,250	
1,200	450			1,275	1,625	2,275	7,400	3,450	1,725	9,225		0–5	5–60			0–650	400–1,350	
1,100	750		0	1,425	1,650	2,250	7,425	3,500	1,800	9,125		0–10	5–120			0–800	600–1,450	
1,050	950		150	1,500	1,650	2,250	7,425	3,500	1,825	9,075	0	0–15	10–160		0	0–850	700–1,500	
1,000	1,350	0	300	1,550	1,675	2,250	7,425	3,525	1,850	9,025	0–5	0–20	10–230		0–50	0–950	800–1,500	
950	1,575	100	425	1,600	1,675	2,250	7,450	3,525	1,875	8,975	0–5	0–30	15–320		0–300	0–1,000	850–1,550	
900	1,675	200	550	1,650	1,700	2,250	7,450	3,550	1,900	8,925	0–5	0–40	20–440		0–450	0–1,050	900–1,600	
850	1,750	300	650	1,700	1,725	2,225	7,450	3,550	1,925	8,875	0–10	5–55	25–630		0–550	50–1,050	950–1,600	
800	1,800	400	725	1,750	1,725	2,225	7,450	3,575	1,950	8,825	0–10	5–75	40–890		0–600	300–1,100	1,000–1,650	
750	1,875	475	800	1,800	1,725	2,225	7,450	3,575	1,950	8,775	0–15	5–110	55–1,320		0–700	400–1,150	1,050–1,650	
700	1,925	575	850	1,850	1,725	2,225	7,475	3,600	1,975	8,725	0–20	10–165	80–1,980		0–750	500–1,200	1,050–1,700	
650	1,975	675	900	1,875	1,750	2,225	7,475	3,600	2,000	8,675	0–30	15–260	125–3,120		0–800	550–1,200	1,100–1,700	
600	2,025	775	950	1,925	1,750	2,200	7,475	3,600	2,025	8,600	5–45	20–400	200–4,800	0	50–800	600–1,250	1,100–1,700	0
550	2,050	900	1,000	1,975	1,775	2,200	7,475	3,625	2,025	8,550	5–70	25–620	300–7,440	0–5	250–850	650–1,250	1,150–1,750	0–50
500	2,100	1,050	1,050	2,000	1,775	2,200	7,475	3,625	2,050	8,475	5–110	40–1,000	480–12,000	0–5	350–900	700–1,300	1,150–1,750	0–250
450	2,150	1,150	1,075	2,050	1,800	2,200	7,450	3,625	2,075	8,425	10–210	80–1,900	920–22,800	0–5	400–900	750–1,300	1,200–1,750	0–350
400	2,175	1,225	1,125	2,075	1,800	2,200	7,075	3,475	2,000	8,350	15–370	135–3,300	1,590–39,600	0–10	450–950	750–1,300	1,200–1,800	0–400
300	2,175	1,275	1,175	2,125	1,825	2,075	6,300	3,125	1,800	8,225	FALLOUT GOVERNS							
200	2,125	1,300	1,200	2,100	1,775	2,050	5,550	2,725	1,600	8,100								
100	1,950	1,225	1,100	1,950	1,700	1,925	4,775	2,450	1,425	7,950								
0	1,450	975	800	1,650	1,350	1,725	4,025	2,100	1,225	7,800								

Figure 8.6a continued.

HGM 1

[1]Heavy Guided Missile.

CASUALTY and DAMAGE Tables
Heavy Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200		0	275	275					4,650	4,650	7,800	7,800	21,700	17,700	15,400	14,200	9,100	7,100	7,800	5,350	2,550
2,100		400	525	525		0			4,650	4,650	7,800	7,650	21,700	17,700	15,500	14,300	9,200	7,100	7,700	5,275	2,825
2,000	0	750	750	750		200			4,650	4,650	7,550	7,550	21,700	17,700	15,500	14,300	8,200	7,100	7,575	5,200	3,050
1,900	3,550	3,550	925	925		650			4,600	4,600	7,400	7,400	21,700	17,700	15,500	14,300	9,200	7,200	7,425	5,125	3,175
1,800	4,000	4,000	1,075	1,075		900			4,500	4,500	7,250	7,250	21,700	17,700	15,500	14,300	9,200	7,200	7,275	5,025	3,175
1,700	4,100	4,100	1,175	1,175	0	1,075			4,450	4,450	7,100	7,100	21,700	17,700	15,500	14,300	9,200	7,200	7,150	4,925	3,125
1,600	4,150	4,150	1,250	1,250	400	1,225			4,350	4,350	6,900	6,900	21,700	17,700	15,500	14,300	9,300	7,200	6,975	4,825	3,075
1,500	4,150	4,150	1,325	1,325	675	1,325		0	4,250	4,250	6,750	6,750	21,700	17,700	15,500	14,300	9,300	7,200	6,825	4,700	3,000
1,400	4,150	4,150	1,400	1,400	875	1,450		325	4,150	4,150	6,600	6,600	21,700	17,700	15,500	14,300	9,300	7,300	6,650	4,600	2,900
1,300	4,150	4,150	1,425	1,425	1,000	1,525	0	625	4,100	4,100	6,450	6,450	21,700	17,700	15,500	14,300	9,300	7,300	6,450	4,500	2,800
1,200	4,150	4,150	1,450	1,450	1,125	1,600	275	800	4,000	4,000	6,300	6,300	21,800	17,700	15,600	14,400	9,300	7,300	6,275	4,425	2,675
1,100	4,150	4,150	1,450	1,450	1,225	1,675	400	925	3,900	3,900	6,200	6,200	21,800	17,800	15,600	14,400	9,300	7,300	6,100	4,350	2,550
1,050	4,150	4,150	1,425	1,425	1,275	1,725	475	1,000	3,850	3,850	6,100	6,100	21,800	17,800	15,600	14,400	9,300	7,300	6,050	4,325	2,500
1,000	4,150	4,150	1,425	1,425	1,300	1,750	575	1,050	3,850	3,850	6,050	6,050	21,800	17,800	15,600	14,400	9,300	7,300	5,975	4,275	2,450
950	4,150	4,150	1,400	1,400	1,350	1,775	650	1,075	3,800	3,800	6,000	6,000	21,800	17,800	15,600	14,400	9,400	7,300	5,900	4,250	2,400
900	4,150	4,150	1,400	1,400	1,375	1,800	725	1,125	3,750	3,750	5,900	5,900	21,800	17,800	15,600	14,400	9,400	7,300	5,850	4,200	2,375
850	4,150	4,150	1,400	1,400	1,400	1,825	775	1,175	3,700	3,700	5,850	5,850	21,800	17,800	15,600	14,400	9,400	7,400	5,775	4,175	2,325
800	4,150	4,150	1,375	1,450	1,450	1,850	825	1,200	3,700	3,700	5,800	5,800	21,800	17,800	15,600	14,400	9,400	7,400	5,725	4,150	2,300
750	4,150	4,150	1,375	1,475	1,475	1,850	875	1,225	3,650	3,650	5,750	5,750	21,800	17,800	15,600	14,400	9,400	7,400	5,675	4,125	2,275
700	4,150	4,150	1,350	1,500	1,500	1,875	925	1,250	3,600	3,600	5,650	5,650	21,800	17,800	15,600	14,400	9,400	7,400	5,600	4,075	2,275
650	4,150	4,150	1,350	1,525	1,600	1,900	950	1,300	3,550	3,550	5,600	5,600	21,800	17,800	15,400	14,300	9,400	7,300	5,550	4,050	2,250
600	4,150	4,150	1,350	1,550	1,700	1,925	975	1,325	3,550	3,550	5,550	5,550	20,800	17,200	15,000	13,900	9,100	7,100	5,500	4,025	2,250
550	4,125	4,125	1,350	1,550	1,750	1,925	1,025	1,350	3,500	3,500	5,500	5,500	19,400	16,500	14,400	13,400	8,700	6,800	5,450	4,000	2,250
500	4,100	4,100	1,350	1,575	1,800	1,950	1,050	1,350	3,450	3,450	5,450	5,450	18,500	15,900	13,900	12,800	8,400	6,600	5,400	3,975	2,250
400	4,025	4,025	1,400	1,600	1,825	1,975	1,075	1,375	3,400	3,400	5,300	5,300	17,600	14,700	12,800	11,800	7,800	6,100	5,300	3,925	2,275
300	3,925	3,925	1,450	1,625	1,850	2,000	1,125	1,400	3,350	3,350	5,200	5,200	16,000	13,500	11,700	10,800	7,100	5,600	5,200	3,875	2,300
200	3,775	3,775	1,500	1,650	1,825	2,000	1,125	1,425	3,300	3,300	5,100	5,100	14,400	12,200	10,600	9,800	6,500	5,200	5,125	3,825	2,325
100	3,550	3,550	1,575	1,650	1,700	2,000	1,150	1,450	3,250	3,250	5,000	5,000	13,000	11,000	9,500	8,800	5,900	4,700	5,050	3,800	2,375
0	3,250	3,250	1,675	1,675	1,650	2,000	1,150	1,450	3,250	3,250	4,450	4,450	11,500	9,700	8,500	7,900	5,300	4,200	4,975	3,775	2,400

HOB_{fs} = 445m
Low HOB_{min} = 420m
High HOB_{min} = 953m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 8.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled veh	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity of GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200				275		0	10,475	4,925	2,200	12,925								
2,100				625		3,325	10,500	4,975	2,300	12,875								
2,000				925		3,350	10,500	5,000	2,375	12,800			0				0	
1,900	0			1,200		3,350	10,525	5,050	2,450	12,725			0–5				0–450	
1,800	75			1,450	0	3,325	10,550	5,075	2,525	12,650			0–5				0–750	
1,700	425			1,675	2,150	3,300	10,575	5,125	2,600	12,575			0–10				0–1,000	
1,600	725			1,875	2,225	3,275	10,575	5,150	2,675	12,475		0	0–15			0	0–1,150	
1,500	1,050		0	2,050	2,250	3,250	10,600	5,175	2,725	12,400		0–5	0–25			0–50	0–1,250	
1,400	1,525	0	300	2,200	2,275	3,200	10,600	5,200	2,775	12,300		0–5	5–50			0–550	50–1,400	
1,300	2,250	125	600	2,325	2,300	3,175	10,625	5,225	2,825	12,200		0–10	5–85			0–750	550–1,500	
1,200	2,450	325	825	2,400	2,325	3,150	10,625	5,250	2,875	12,100	0	0–15	10–150		0	0–900	750–1,550	
1,100	2,600	525	1,025	2,525	2,350	3,125	10,650	5,275	2,900	12,000	0–5	0–25	15–290		0–350	0–1,050	900–1,650	
1,050	2,650	625	1,100	2,575	2,350	3,125	10,650	5,275	2,925	11,950	0–5	0–35	20–390		0–500	0–1,100	950–1,650	
1,000	2,700	750	1,175	2,600	2,350	3,100	10,650	5,300	2,950	11,900	0–10	5–50	25–570		0–600	50–1,150	1,000–1,700	
950	2,775	850	1,225	2,650	2,375	3,075	10,650	5,300	2,950	11,825	0–10	5–65	35–780		0–650	300–1,200	1,050–1,750	
900	2,825	950	1,275	2,700	2,375	3,050	10,650	5,325	2,975	11,775	0–10	5–90	45–1,080		0–750	450–1,200	1,100–1,750	
850	2,875	1,050	1,350	2,750	2,375	3,050	10,675	5,325	3,000	11,725	0–15	10–130	65–1,560		0–800	550–1,250	1,150–1,800	
800	2,925	1,150	1,400	2,800	2,400	3,025	10,675	5,325	3,000	11,675	0–25	10–185	90–2,220		0–850	600–1,300	1,150–1,800	
750	2,975	1,275	1,450	2,825	2,400	3,000	10,675	5,350	3,025	11,600	0–35	15–275	135–3,300	0	0–900	700–1,300	1,200–1,800	0
700	3,025	1,450	1,500	2,875	2,400	2,975	10,675	5,350	3,025	11,550	5–50	20–420	200–4,950	0–5	50–950	750–1,350	1,250–1,850	0–50
650	3,050	1,600	1,525	2,925	2,425	2,975	10,625	5,350	3,100	11,475	5–75	30–650	320–7,800	0–5	300–950	800–1,350	1,250–1,850	0–300
600	3,100	1,700	1,575	2,950	2,450	2,950	10,250	5,175	3,000	11,425	5–110	40–1,000	480–12,000	0–5	400–1,000	800–1,400	1,300–1,900	0–400
550	3,125	1,750	1,625	3,000	2,450	2,925	9,875	5,000	2,900	11,350	10–175	65–1,550	750–18,600	0–5	450–1,050	850–1,400	1,300–1,900	0–450
500	3,150	1,800	1,650	3,025	2,450	2,900	9,475	4,825	2,800	11,300	15–280	100–2,500	1,200–30,000	0–10	500–1,050	900–1,450	1,350–1,900	0–500
400	3,125	1,825	1,725	3,075	2,475	2,850	8,725	4,450	2,575	11,150	FALLOUT GOVERNS							
300	3,075	1,850	1,750	3,050	2,425	2,825	7,950	4,100	2,375	11,025								
200	2,975	1,825	1,675	2,925	2,375	2,750	7,200	3,750	2,175	10,875								
100	2,650	1,700	1,475	2,725	2,200	2,625	6,425	3,375	1,975	10,750								
0	2,100	1,400	1,150	2,400	1,900	2,500	5,675	3,025	1,775	10,600								

Figure 8.6b continued.

HGM 1

[1]Heavy Guided Missile.

CASUALTY and DAMAGE Tables
Heavy Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200	5,350	5,350	1,425	1,425		375			5,700	5,700	9,150	9,150	28,300	23,700	20,800	18,900	12,500	9,800	9,075	6,275	4,000
2,100	5,450	5,450	1,525	1,525		750			5,650	5,650	9,000	9,000	28,300	23,700	20,800	18,900	12,500	9,800	8,925	6,150	3,925
2,000	5,475	5,475	1,600	1,600		1,000			5,600	5,600	8,800	8,800	28,300	23,700	20,800	18,900	12,500	9,800	8,775	6,050	3,850
1,900	5,475	5,475	1,675	1,675	0	1,175			5,500	5,500	8,600	8,600	28,300	23,700	20,800	18,900	12,600	9,800	8,600	5,925	3,775
1,800	5,450	5,450	1,725	1,725	375	1,325			5,400	5,400	8,500	8,500	28,400	23,700	20,800	18,900	12,600	9,800	8,450	5,825	3,700
1,700	5,450	5,450	1,775	1,775	700	1,450	0	0	5,350	5,350	8,350	8,350	28,400	23,700	20,900	18,900	12,600	9,800	8,275	5,725	3,600
1,600	5,475	5,475	1,800	1,800	900	1,550	125	125	5,250	5,250	8,200	8,200	28,400	23,700	20,900	18,900	12,600	9,900	8,975	5,650	3,500
1,500	5,475	5,475	1,825	1,825	1,075	1,650	350	550	5,150	5,150	8,050	8,050	28,400	23,700	20,900	18,900	12,600	9,900	7,900	5,575	3,375
1,400	5,475	5,475	1,825	1,825	1,200	1,725	500	775	5,050	5,050	7,900	7,900	28,400	23,700	20,900	19,000	12,600	9,900	7,725	5,500	3,250
1,300	5,475	5,475	1,800	1,800	1,300	1,800	600	925	4,950	4,950	7,750	7,750	28,400	23,700	20,900	19,000	12,600	9,900	7,575	5,425	3,125
1,200	5,475	5,475	1,775	1,775	1,400	1,875	700	1,050	4,900	4,900	7,600	7,600	28,400	23,800	20,900	19,000	12,600	9,900	7,450	5,350	3,025
1,100	5,475	5,475	1,750	1,750	1,475	1,925	775	1,175	4,800	4,800	7,450	7,450	28,400	23,800	20,900	19,000	12,700	9,900	7,325	5,275	2,950
1,050	5,475	5,475	1,750	1,750	1,500	1,975	825	1,200	4,750	4,750	7,400	7,400	28,400	23,800	20,900	19,000	12,700	9,900	7,250	5,250	2,925
1,000	5,475	5,475	1,725	1,725	1,550	2,000	850	1,250	4,700	4,700	7,350	7,350	28,400	23,800	20,900	19,000	12,700	10,000	7,200	5,225	2,900
950	5,475	5,475	1,725	1,725	1,675	2,025	875	1,300	4,650	4,650	7,250	7,250	28,400	23,800	20,900	19,000	12,700	10,000	7,150	5,200	2,875
900	5,475	5,475	1,700	1,700	1,850	2,050	925	1,325	4,600	4,600	7,200	7,200	28,400	23,800	20,900	19,000	12,700	10,000	7,075	5,150	2,875
850	5,475	5,475	1,700	1,700	2,025	2,050	975	1,350	4,550	4,550	7,150	7,150	27,800	23,500	20,600	18,800	12,600	9,900	7,025	5,125	2,850
800	5,475	5,475	1,700	1,700	2,150	2,150	1,000	1,400	4,550	4,550	7,100	7,100	27,200	22,900	20,000	18,300	12,300	9,600	6,975	5,100	2,850
750	5,450	5,450	1,700	1,700	2,250	2,250	1,050	1,425	4,500	4,500	7,050	7,050	26,500	22,200	19,500	17,800	11,900	9,400	6,925	5,075	2,850
700	5,450	5,450	1,700	1,700	2,300	2,300	1,075	1,450	4,450	4,450	7,000	7,000	25,800	21,600	18,900	17,300	11,600	9,100	6,875	5,050	2,850
650	5,425	5,425	1,700	1,700	2,350	2,350	1,125	1,475	4,400	4,400	6,950	6,950	25,000	21,000	18,300	16,800	11,300	8,900	6,825	5,025	2,850
600	5,400	5,400	1,725	1,725	2,375	2,375	1,150	1,475	4,400	4,400	6,900	6,900	24,300	20,400	17,800	16,300	11,000	8,600	6,775	5,000	2,850
500	5,325	5,325	1,750	1,750	2,425	2,425	1,200	1,525	4,350	4,350	6,800	6,800	22,700	19,100	16,700	15,300	10,300	8,100	6,675	4,950	2,875
400	5,225	5,225	1,800	1,800	2,450	2,450	1,225	1,550	4,300	4,300	6,650	6,650	21,200	17,800	15,600	14,300	9,600	7,600	6,575	4,900	2,900
300	5,075	5,075	1,850	1,850	2,450	2,450	1,250	1,575	4,250	4,250	6,550	6,550	19,800	16,500	14,500	13,300	9,000	7,100	6,500	4,850	2,925
200	4,850	4,850	1,925	1,925	2,375	2,375	1,275	1,600	4,200	4,200	6,500	6,500	18,300	15,200	13,400	12,200	8,300	6,600	6,400	4,825	2,950
100	4,600	4,600	2,000	2,000	2,200	2,225	1,300	1,600	4,150	4,150	6,400	6,400	16,700	14,000	12,200	11,200	7,600	6,100	6,325	4,775	2,975
0	4,275	4,275	2,100	2,100	1,850	2,225	1,300	1,600	4,100	4,100	6,300	6,300	15,100	12,800	11,300	10,200	7,000	5,600	6,250	4,750	3,025

HOB_{fs} = 560m
Low HOB_{min} = 530m
High HOB_{min} = 1200m
HOB_{99} = HOB_{fs} + 3.5 PE_h m
HOB_{98} = HOB_{fs} + 3.0 PE_h m
HOB_{90} = HOB_{fs} + 1.9 PE_h m

Figure 8.6c.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (Rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200	375			2,075	0	4,275	13,925	6,875	3,600	15,875								
2,100	700			2,300	2,750	4,250	13,950	6,900	3,650	15,800			0				0	
2,000	1,000			2,500	2,775	4,200	13,950	6,950	3,700	15,725			0–5				0–450	
1,900	1,350		0	2,675	2,800	4,150	13,975	6,975	3,750	15,625			0–5				0–800	
1,800	1,775	0	275	2,850	2,825	4,100	13,975	7,000	3,800	15,525			0–10				0–1,000	
1,700	2,675	25	600	2,975	2,850	4,050	14,000	7,025	3,850	15,450		0	0–15			0	0–1,050	
1,600	3,075	225	875	3,100	2,875	4,000	14,000	7,050	3,900	15,350		0–5	0–30			0–400	0–1,300	
1,500	3,275	450	1,125	3,200	2,900	3,975	14,025	7,075	3,925	15,250		0–5	5–50			0–700	50–1,400	
1,400	3,400	675	1,325	3,300	2,925	3,925	14,025	7,075	3,975	15,125	0	0–10	5–100		0	0–900	550–1,500	
1,300	3,525	875	1,500	3,400	2,950	3,900	14,050	7,100	4,000	15,025	0–5	0–15	10–170		0–50	0–1,050	750–1,600	
1,200	3,650	1,100	1,600	3,500	2,950	3,875	14,050	7,125	4,025	14,925	0–5	0–25	15–300		0–500	0–1,150	900–1,700	
1,100	3,750	1,325	1,725	3,600	2,975	3,850	14,050	7,125	4,075	14,800	0–10	5–50	25–580		0–700	50–1,250	1,050–1,750	
1,050	3,800	1,425	1,800	3,650	2,975	3,825	14,050	7,150	4,075	14,750	0–10	5–65	35–780		0–800	350–13,00	1,100–1,800	
1,000	3,850	1,550	1,850	3,700	3,000	3,800	14,075	7,150	4,100	14,675	0–15	5–95	50–1,140		0–850	500–1,350	1,150–1,800	
950	3,900	1,675	1,900	3,725	3,000	3,775	14,075	7,150	4,100	14,625	0–15	10–130	65–1,560		0–900	600–1,400	1,200–1,850	
900	3,950	1,850	1,950	3,775	3,025	3,775	14,075	7,175	4,125	14,575	0–20	10–180	90–2,160		0–950	650–1,400	1,200–1,850	
850	4,000	2,025	2,000	3,825	3,025	3,750	13,800	7,075	4,125	14,500	0–30	15–260	125–3,120		0–1,000	700–1,450	1,250–1,900	
800	4,050	2,150	2,050	3,875	3,050	3,750	13,400	6,900	4,025	14,450	5–45	15–370	180–4,440	0	50–1,050	800–1,450	1,300–1,900	0
750	4,100	2,250	2,075	3,900	3,050	3,725	13,025	6,700	3,925	14,375	5–65	25–550	270–6,600	0–5	300–1,100	850–1,500	1,300–1,950	0–50
700	4,125	2,300	2,125	3,950	3,050	3,700	12,625	6,525	3,825	14,325	5–95	35–835	400–9,900	0–5	400–1,100	900–1,500	1,350–1,950	0–300
650	4,125	2,350	2,175	3,975	3,075	3,675	12,225	6,350	3,725	14,250	10–145	55–1,300	63 0–15,600	0–5	500–1,150	900–1,550	1,350–1,950	0–400
600	4,150	2,375	2,200	4,000	3,075	3,650	11,850	6,150	3,625	14,175	10–220	80–2,000	960–24,000	0–10	550–12,00	950–1,550	1,400–2,000	0–450
500	4,125	2,425	2,275	4,050	3,075	3,625	11,050	5,775	3,400	14,050	FALLOUT GOVERNS							
400	4,075	2,450	2,325	4,025	3,100	3,575	10,275	5,400	3,200	13,925								
300	4,000	2,450	2,275	3,950	3,075	3,475	9,475	5,050	3,000	13,775								
200	3,825	2,375	2,125	3,975	3,050	3,400	8,700	4,675	2,800	13,625								
100	3,350	2,200	1,875	3,500	2,825	3,275	7,925	4,300	2,575	13,500								
0	2,775	1,850	1,500	3,150	2,525	3,200	7,125	3,925	2,375	13,350								

Figure 8.6c continued.

HGM 1

[1]Heavy Guided Missile.

CASUALTY and DAMAGE Tables
Heavy Guided Missile
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200	7,200	7,200	2,225	2,225		1,150			6,700	6,700	10,450	10,450	37,000	31,400	27,300	24,600	16,600	13,400	10,525	7,275	4,600
2,100	7,200	7,200	2,250	2,250	0	1,300	0	0	6,600	6,600	10,300	10,300	37,000	31,400	27,300	24,600	16,600	13,400	10,325	7,200	4,500
2,000	7,225	7,225	2,275	2,275	500	1,450	200	200	6,550	6,550	10,150	10,150	37,000	31,400	27,300	24,600	16,600	13,400	10,150	7,100	4,375
1,900	7,225	7,225	2,300	2,300	800	1,575	425	425	6,450	6,450	10,000	10,000	37,000	31,400	27,300	24,600	16,600	13,500	9,975	7,025	4,250
1,800	7,225	7,225	2,300	2,300	1,000	1,700	600	600	6,400	6,400	9,850	9,850	37,000	31,400	27,300	24,700	16,600	13,500	9,775	6,950	4,125
1,700	7,225	7,225	2,275	2,275	1,175	1,800	700	700	6,300	6,300	9,700	9,700	37,000	31,500	27,400	24,700	16,600	13,500	9,625	6,875	4,000
1,600	7,225	7,225	2,250	2,250	1,300	1,875	800	800	6,200	6,200	9,550	9,550	37,000	31,500	27,400	24,700	16,600	13,500	9,500	6,800	3,900
1,500	7,225	7,225	2,225	2,225	1,475	1,975	900	975	6,150	6,150	9,400	9,400	37,000	31,500	27,400	24,700	16,600	13,500	9,375	6,725	3,825
1,400	7,225	7,225	2,225	2,225	1,700	2,050	975	1,125	6,050	6,050	9,250	9,250	37,000	31,500	27,400	24,700	16,600	13,500	9,250	6,675	3,750
1,300	7,225	7,225	2,200	2,200	1,950	2,100	1,050	1,225	5,950	5,950	9,100	9,100	37,000	31,500	27,400	24,700	16,700	13,500	9,125	6,600	3,675
1,200	7,225	7,225	2,175	2,175	2,200	2,200	1,100	1,325	5,900	5,900	8,950	8,950	37,000	31,500	27,400	24,700	16,700	13,500	9,000	6,550	3,625
1,100	7,225	7,225	2,150	2,150	2,550	2,550	1,150	1,425	5,800	5,800	8,800	8,800	36,300	30,900	27,000	24,200	16,300	13,300	8,900	6,475	3,600
1,050	7,225	7,225	2,125	2,125	2,700	2,700	1,175	1,450	5,800	5,800	8,700	8,700	35,500	30,200	26,500	23,700	16,000	13,000	8,850	6,450	3,600
1,000	7,225	7,225	2,125	2,125	2,850	2,850	1,175	1,500	5,750	5,750	8,650	8,650	34,800	29,600	26,000	23,200	15,700	12,700	8,775	6,425	3,575
950	7,200	7,200	2,125	2,125	2,950	2,950	1,200	1,525	5,700	5,700	8,550	8,550	34,000	29,000	25,400	22,700	15,400	12,500	8,725	6,400	3,575
900	7,175	7,175	2,150	2,150	3,025	3,025	1,225	1,550	5,650	5,650	8,450	8,450	33,300	28,300	24,900	22,200	15,000	12,200	8,675	6,375	3,575
850	7,175	7,175	2,150	2,150	3,075	3,075	1,225	1,575	5,600	5,600	8,400	8,400	32,600	27,700	24,300	21,700	14,600	11,900	8,625	6,350	3,575
800	7,150	7,150	2,150	2,150	3,125	3,125	1,250	1,600	5,600	5,600	8,350	8,350	31,800	27,000	23,800	21,200	14,300	11,600	8,575	6,325	3,575
750	7,100	7,100	2,175	2,175	3,150	3,150	1,275	1,625	5,550	5,550	8,250	8,250	31,100	26,400	23,300	20,700	14,000	11,300	8,525	6,275	3,600
700	7,075	7,075	2,175	2,175	3,175	3,175	1,275	1,650	5,500	5,500	8,200	8,200	30,400	25,700	22,800	20,200	13,700	11,100	8,475	6,250	3,600
650	7,025	7,025	2,200	2,200	3,200	3,200	1,300	1,675	5,450	5,450	8,150	8,150	29,600	25,100	22,300	19,800	13,400	10,700	8,425	6,250	3,625
600	6,975	6,975	2,225	2,225	3,200	3,200	1,325	1,700	5,450	5,450	8,050	8,050	28,900	24,400	21,700	19,300	13,000	10,500	8,375	6,225	3,625
500	6,875	6,875	2,275	2,275	3,225	3,225	1,375	1,725	5,350	5,350	7,950	7,950	27,400	23,200	20,700	18,300	12,400	10,000	8,275	6,175	3,650
400	6,725	6,725	2,325	2,325	3,250	3,250	1,400	1,750	5,300	5,300	7,850	7,850	25,900	21,900	19,600	17,300	11,700	9,400	8,200	6,125	3,675
300	6,525	6,525	2,400	2,400	3,175	3,175	1,425	1,775	5,200	5,200	7,750	7,750	24,500	20,600	18,500	16,400	11,100	8,900	8,100	6,075	3,700
200	6,275	6,275	2,475	2,475	3,050	3,050	1,450	1,775	5,150	5,150	7,650	7,650	22,200	19,300	17,400	15,400	10,400	8,400	8,025	6,025	3,750
100	5,975	5,975	2,550	2,550	2,825	2,825	1,450	1,800	5,100	5,100	7,550	7,550	21,500	18,000	16,400	14,500	9,700	7,800	7,950	6,000	3,775
0	5,650	5,650	2,650	2,650	2,450	2,475	1,450	1,800	5,050	5,050	7,500	7,500	20,100	16,700	15,300	13,500	9,200	7,300	7,875	5,975	3,800

HOB_{fs} = 706m
Low HOB_{min} = 668m
High HOB_{min} = 1,512m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 8.6d

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200	2,875	0	600	3,850	3,500	5,075	18,475	9,350	5,125	19,500			0				0	
2,100	3,825	125	925	3,975	3,525	5,050	18,475	9,375	5,175	19,400			0–5				0–450	
2,000	4,075	350	1,200	4,100	3,550	5,000	18,500	9,400	5,200	19,325			0–5				0–800	
1,900	4,300	575	1,450	4,200	3,575	4,975	18,500	9,400	5,250	19,200			0–10				0–1,000	
1,800	4,425	800	1,675	4,325	3,600	4,925	18,525	9,425	5,275	19,100		0	0–20			0	0–1,200	
1,700	4,575	1,025	1,875	4,425	3,625	4,900	18,525	9,450	5,325	19,000		0–5	0–30			0–400	0–1,350	
1,600	4,700	1,250	2,025	4,525	3,625	4,875	18,525	9,475	5,350	18,900		0–5	5–55			0–700	400–1,450	
1,500	4,825	1,475	2,150	4,650	3,650	4,850	18,550	9,475	5,375	18,775		0–10	5–100			0–900	700–1,550	
1,400	4,950	1,700	2,275	4,750	3,675	4,800	18,550	9,500	5,400	18,675	0	0–20	10–190		0	0–1,050	900–1,650	
1,300	5,050	1,950	2,400	4,825	3,700	4,775	18,550	9,500	5,425	18,550	0–5	0–30	15–340		0–50	0–1,200	1,050–1,750	
1,200	5,150	2,200	2,500	4,925	3,725	4,750	18,550	9,525	5,450	18,425	0–5	5–50	25–600		0–750	50–1,300	1,150–1,800	
1,100	5,250	2,550	2,600	5,025	3,750	4,700	18,025	9,325	5,425	18,300	0–10	5–100	50–1,160		0–900	500–1,400	1,250–1,850	
1,050	5,300	2,700	2,650	5,075	3,750	4,675	17,625	9,125	5,325	18,250	0–15	10–130	65–1,560		0–950	600–1,400	1,300–1,900	
1,000	5,350	2,850	2,700	5,125	3,775	4,650	17,225	8,925	5,225	18,175	0–25	10–190	95–2,280		0–1,000	700–1,450	1,350–1,950	
950	5,400	2,950	2,750	5,150	3,775	4,650	16,825	8,750	5,125	18,125	0–30	15–260	125–3,120		0–1,050	750–1,500	1,400–1,950	
900	5,425	3,025	2,800	5,200	3,800	4,625	16,400	8,550	5,000	18,050	5–40	15–360	175–4,320		50–1,100	800–1,550	1,400–2,000	
850	5,450	3,075	2,825	5,225	3,800	4,600	16,000	8,350	4,900	18,000	5–60	25–520	250–6,240	0	350–1,150	850–1,550	1,450–2,000	0
800	5,475	3,125	2,875	5,275	3,825	4,575	15,600	8,150	4,800	17,925	5–85	30–740	360–8,880	0–5	450–1,600	900–1,600	1,450–2,000	0–50
750	5,475	3,150	2,900	5,300	3,825	4,575	15,200	7,950	4,700	17,875	5–125	45–1,100	530–13,200	0–5	550–1,200	950–1,600	1,500–2,050	0–300
700	5,475	3,175	2,950	5,325	3,850	4,550	14,800	7,750	4,575	17,800								
650	5,450	3,200	2,975	5,350	3,850	4,525	14,400	7,575	4,475	17,725								
600	5,450	3,200	3,000	5,350	3,850	4,475	14,000	7,375	4,375	17,675								
500	5,375	3,225	3,050	5,325	3,850	4,450	13,175	6,975	4,175	17,525								
400	5,300	3,250	3,025	5,225	3,825	4,400	12,375	6,600	3,950	17,400								
300	5,175	3,175	2,900	5,075	3,750	4,300	11,575	6,200	3,750	17,250								
200	4,825	3,050	2,700	4,850	3,625	4,175	10,750	5,800	3,525	17,100								
100	4,275	2,825	2,400	4,525	3,425	4,075	9,950	5,425	3,325	16,950								
0	3,675	2,450	2,000	4,150	3,200	3,925	9,150	5,025	3,100	16,800								

FALLOUT GOVERNS

Figure 8.6d continued.

HGM 1

[1]Heavy Guided Missile.

CASUALTY and DAMAGE Tables
Heavy Guided Missile

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs.		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,500	10,425	10,425	3,125	3,125	1,025	1,475	725	725	8,700	8,700	13,600	13,600	54,500	45,600	38,400	35,500	25,000	19,900	13,350	9,475	5,675
2,400	10,425	10,425	3,100	3,100	1,250	1,625	850	850	8,600	8,600	13,450	13,450	54,500	45,700	38,400	35,500	25,000	19,900	13,200	9,400	5,550
2,300	10,425	10,425	3,075	3,075	1,500	1,750	950	950	8,500	8,500	13,300	13,300	54,500	45,700	38,400	35,500	25,000	20,000	13,075	9,325	5,425
2,200	10,425	10,425	3,075	3,075	1,750	1,875	1,050	1,050	8,400	8,400	13,200	13,200	54,500	45,700	38,100	35,500	25,000	20,000	12,925	9,250	5,325
2,100	10,425	10,425	3,050	3,050	1,975	2,000	1,150	1,150	8,350	8,350	13,050	13,050	54,500	45,700	38,400	35,500	25,000	20,000	12,800	9,175	5,225
2,000	10,425	10,425	3,025	3,025	2,225	2,225	1,250	1,250	8,250	8,250	12,900	12,900	54,500	45,700	38,400	35,500	25,000	20,000	12,675	9,125	5,150
1,900	10,425	10,425	3,000	3,000	2,475	2,475	1,325	1,325	8,200	8,200	12,750	12,750	54,500	45,700	38,400	35,500	25,000	20,000	12,550	9,050	5,075
1,800	10,425	10,425	2,975	2,975	2,725	2,725	1,400	1,400	8,100	8,100	12,650	12,650	54,500	45,700	38,400	35,600	25,000	20,000	12,425	8,975	5,025
1,700	10,425	10,425	2,950	2,950	2,950	2,950	1,450	1,450	8,050	8,050	12,500	12,500	54,500	45,700	38,400	35,600	25,000	20,000	12,300	8,925	4,950
1,600	10,425	10,425	2,925	2,925	3,275	3,275	1,500	1,500	8,000	8,000	12,400	12,400	53,700	45,300	37,900	35,100	24,600	19,800	12,175	8,850	4,925
1,500	10,425	10,425	2,925	2,925	3,650	3,650	1,550	1,550	7,900	7,900	12,300	12,300	52,200	44,000	36,900	34,000	23,900	19,200	12,075	8,800	4,875
1,400	10,425	10,425	2,875	2,875	4,000	4,000	1,600	1,600	7,850	7,850	12,200	12,200	50,600	42,700	35,900	33,000	23,200	18,600	11,950	8,750	4,875
1,300	10,400	10,400	2,900	2,900	4,250	4,250	1,625	1,675	7,800	7,800	12,050	12,050	49,000	41,400	34,800	32,100	22,500	18,000	11,850	8,675	4,850
1,200	10,375	10,375	2,900	2,900	4,400	4,400	1,650	1,750	7,750	7,750	11,950	11,950	47,500	40,000	33,800	31,100	21,800	17,500	11,750	8,625	4,850
1,100	10,300	10,300	2,925	2,925	4,500	4,500	1,700	1,825	7,700	7,700	11,850	11,850	46,000	38,900	32,800	30,100	21,100	17,000	11,650	8,575	4,850
1,050	10,275	10,275	2,950	2,950	4,525	4,525	1,700	1,850	7,650	7,650	11,800	11,800	45,200	38,200	32,300	29,600	20,700	16,700	11,600	8,550	4,875
1,000	10,250	10,250	2,950	2,950	4,550	4,550	1,725	1,875	7,600	7,600	11,750	11,750	44,400	37,600	31,800	29,100	20,400	16,400	11,550	8,525	4,875
950	10,200	10,200	2,975	2,975	4,575	4,575	1,725	1,900	7,600	7,600	11,700	11,700	53,600	36,800	31,200	28,600	20,000	16,100	11,500	8,500	4,900
900	10,150	10,150	2,975	2,975	4,600	4,600	1,750	1,925	7,550	7,550	11,650	11,650	42,900	36,200	30,700	28,100	19,700	15,800	11,450	8,475	4,900
850	10,100	10,100	3,000	3,000	4,625	4,625	1,750	1,950	7,500	7,500	11,600	11,600	42,100	35,600	30,200	27,600	19,300	15,500	11,400	8,450	4,925
800	10,050	10,050	3,025	3,025	4,625	4,625	1,775	1,975	7,500	7,500	11,550	11,550	41,400	35,000	29,700	27,100	19,000	15,200	11,350	8,425	4,925
750	10,000	10,000	3,050	3,050	4,650	4,650	1,775	2,000	7,450	7,450	11,500	11,500	40,600	34,400	29,200	26,600	18,600	14,700	11,300	8,400	4,950
700	9,950	9,950	3,075	3,075	4,650	4,650	1,800	2,000	7,450	7,450	11,450	11,450	39,800	33,700	28,700	26,100	18,300	14,400	11,250	8,375	4,950
600	9,800	9,800	3,125	3,125	4,675	4,675	1,825	2,050	7,350	7,350	11,350	11,350	38,200	32,400	27,700	25,100	17,600	14,100	11,175	8,325	4,975
500	9,625	9,625	3,200	3,200	4,675	4,675	1,825	2,075	7,300	7,300	11,250	11,250	36,700	31,100	26,600	24,100	16,900	13,500	11,075	8,300	5,000
400	9,400	9,400	3,250	3,250	4,575	4,575	1,850	2,100	7,250	7,250	11,150	11,150	35,200	29,800	25,600	23,100	16,200	13,000	11,000	8,250	5,050
300	9,125	9,125	3,325	3,325	4,450	4,450	1,875	2,100	7,200	7,200	11,050	11,050	33,600	28,500	24,600	22,100	15,500	12,400	10,925	8,225	5,075
200	8,850	8,850	3,425	3,425	4,250	4,250	1,875	2,100	7,150	7,150	10,950	10,950	32,100	27,200	23,600	21,100	14,800	11,900	10,850	8,175	5,100
100	8,500	8,500	3,500	3,500	3,925	3,925	1,900	2,125	7,100	7,100	10,850	10,850	30,600	26,000	22,500	20,200	14,200	11,300	10,775	8,150	5,125
0	8,125	8,125	3,600	3,600	3,525	3,525	1,900	2,125	7,050	7,050	10,750	10,750	29,200	24,700	21,500	19,200	13,600	10,800	10,700	8,100	5,150

HOB_{fs} = 958m

Low HOB_{min} = 905m

High HOB_{min} = 2,052m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 8.6e.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and Arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (Rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,500	6,325	1,025	2,300	6,150	5,075	7,375	26,375	13,275	7,850	26,000								
2,400	6,450	1,250	2,500	6,275	5,075	7,350	26,400	13,275	7,875	25,875			0				0	
2,300	6,600	1,500	2,700	6,400	5,100	7,300	26,400	13,300	7,900	25,775			0–5				0–50	
2,200	6,750	1,750	2,875	6,500	5,125	7,250	26,400	13,325	7,925	25,675			0–5				0–700	
2,100	6,875	1,975	3,025	6,625	5,150	7,200	26,425	13,325	7,950	25,550			0–10				0–950	
2,000	7,000	2,225	3,150	6,725	5,175	7,150	26,425	13,350	7,975	25,450		0	0–15			0	0–1,150	
1,900	7,125	2,475	3,275	6,825	5,175	7,100	26,425	13,375	8,000	25,325		0–5	0–25			0–50	0–1,300	
1,800	7,250	2,725	3,400	6,950	5,200	7,050	26,450	13,375	8,025	25,225		0–5	0–40			0–600	0–1,450	
1,700	7,375	2,950	3,525	7,050	5,200	7,000	26,450	13,400	8,050	25,100		0–10	5–75			0–850	400–1,550	
1,600	7,475	3,275	3,650	7,150	5,225	6,950	25,775	13,150	8,025	24,975	0	0–15	10–130		0	0–1,050	700–1,700	
1,500	7,575	3,650	3,750	7,250	5,250	6,900	24,950	12,775	7,800	24,850	0–5	0–25	10–250		0–400	0–1,200	900–1,750	
1,400	7,675	4,000	3,850	7,350	5,250	6,850	24,150	12,375	7,575	24,725	0–5	0–40	20–460		0–700	0–1,300	1,050–1,850	
1,300	7,775	4,250	3,950	7,425	5,275	6,800	23,350	12,000	7,350	24,600	0–10	5–70	35–840		0–850	400–1,400	1,200–1,900	
1,200	7,850	4,400	4,050	7,525	5,275	6,750	22,525	11,600	7,125	24,475	0–15	5–125	60–1,500		0–1,000	650–1,500	1,300–2,000	
1,100	7,875	4,500	4,125	7,575	5,300	6,700	21,725	11,225	6,900	24,350	0–30	10–240	120–2,880		0–1,100	800–1,600	1,400–2,050	
1,050	7,900	4,525	4,175	7,625	5,300	6,675	21,300	11,025	6,800	24,300	0–40	15–325	160–3,900		0–1,150	850–1,600	1,400–2,050	
1,000	7,900	4,550	4,200	7,650	5,325	6,650	20,900	10,825	6,675	24,225	5–55	20–475	230–5,700	0	50–1,200	950–1,650	1,450–2,100	0
950	7,900	4,575	4,250	7,675	5,325	6,625	20,500	10,625	6,575	24,150	FALLOUT COVERNS							
900	7,875	4,600	4,275	7,700	5,350	6,575	20,100	10,450	6,450	24,100								
850	7,875	4,625	4,325	7,725	5,350	6,550	19,700	10,250	6,350	24,025								
800	7,850	4,625	4,350	7,725	5,350	6,525	19,275	10,050	6,225	23,950								
750	7,800	4,650	4,375	7,700	5,350	6,500	18,875	9,850	6,125	23,900								
700	7,775	4,650	4,400	7,700	5,375	6,500	18,475	9,675	6,000	23,825								
600	7,700	4,675	4,400	7,625	5,375	6,450	17,675	9,275	5,775	23,675								
500	7,600	4,675	4,325	7,500	5,350	6,400	16,850	8,900	5,500	23,550								
400	7,425	4,575	4,175	7,300	5,250	6,325	16,050	8,500	5,325	23,400								
300	7,100	4,450	3,950	7,050	5,125	6,250	15,225	8,125	5,100	23,250								
200	6,575	4,250	3,675	6,775	4,975	6,150	14,425	7,725	4,875	23,100								
100	5,925	3,925	3,300	6,400	4,700	6,075	13,600	7,350	4,650	22,975								
0	5,300	3,525	2,875	6,000	3,975	5,975	12,800	6,950	4,425	22,825								

Figure 8.6e continued.

HGM 1

[1]Heavy Guided Missile.

CONTINGENT EFFECTS Tables
Heavy Guided Missile

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.
Impact burst not tabulated, fallaut governs.

Yield KT	HOB	Estimated radii in meters af 2 rad/hr cantour af induced radiatian, 1 hour after burst.				Estimated induced radiatian intensity, one haur after burst, at GZ. In rad/hr.			
		Soil type I (Liberia Africa)	Soil type II (Nevada desert)	Soil type III (lava clay, Hawaii)	Soil type IV (beach sand, Pensacala, Fla)	Soil type I	Soil type II	Soil type III	Soil type IV
INDIA/200	Law	400–900	750–1,300	1,200–1,750	0–350	10–210	80–1,900	920–22,800	0–5
	High	0–700	400–1,150	1,050–1,650	0	0–15	5–110	55–1,320	0
JULIETT/500	Law	400–1,000	800–1,400	1,300–1,900	0–400	5–110	40–1,000	480–12,000	0–5
	High	0–650	300–1,200	1,050–1,750	0	0–10	5–65	35–780	0
KILO/1,000	Law	400–1,100	900–1,500	1,350–1,950	0–300	5–95	35–825	400–9,900	0–5
	High	0–500	0–1,150	900–1,700	0	0–5	0–25	15–300	0
LIMA/2,000	Low	350–1,150	850–1,550	1,450–2,000	0	5–60	25–520	250–6,240	0
	High	0	0–1,050	900–1,650	0	0	0–20	10–190	0
MIKE/5,000	Law	0–1,100	800–1,600	1,400–2,050	0	0–30	10–240	120–2,880	0
	High	0	0–50	0–1,300	0	0	0–5	0–25	0

NOTE: For description of chemical composition and effects af varistians in chemical campasitian in soil types, see FM 101-31-1, app III, annex F.

Figure 8.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	OBSTACLES TO MOVEMENT							CASUALTIES TO EXPOSED PERSONNEL		
	Faot and wheeled vehicle movement				Tracked vehicle movement					
	Type I	Type II	Type III	Type IV	Type I	Types II, IVa(d)	Types III, IVa(f)	Type I	Types II, IVa(d)	Types III, IVa(f)
INDIA/200	2,450	3,200	3,800	6,200	2,450	3,200	3,800	2,000	2,400	2,700
JULIETT/500	3,750	4,800	6,000	9,400	3,750	4,800	6,000	3,150	3,600	4,200
KILO/1,000	5,000	6,200	7,700	12,000	5,000	6,200	7,700	4,050	4,600	5,200
LIMA/2,000	5,800	7,400	9,600	14,500	5,800	7,400	9,600	4,600	5,200	6,500
MIKE/5,000	8,600	12,000	14,500	22,000	8,600	12,000	14,500	7,000	8,000	9,000

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 8.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	AIRCRAFT SAFETY RADII—meters (See note 2.)		
	Light fixed wing	Recon and absn hel	Transport and util hel
INDIA/200	27,000	26,000	23,000
JULIETT/500	35,000	34,000	31,000
KILO/1,000	43,000	42,000	40,000
LIMA/2,000	51,000	50,000	47,000
MIKE/5,000	62,000	61,000	58,000

NOTES: 1. These rsdii apply ta all HOB. See FM 101-31-1, app III, annex F.
2. A buffer distsnce hss been added to these radii of safety.

Figure 8.7c.

FIRE AREAS (See note.)

Yield KT	HOB	Expected radii for ignition of wildland fuels during fire season—meters							
		Dry climate (25 percent relative humidity)				Damp climate (75 percent relative humidity)			
		Class I	Class II	Class III	Class IV	Class I	Class II	Class III	Class IV
INDIA/200	Air	8,300	7,700	7,000	5,800	7,700	7,700	6,400	4,800
	Impact	4,500	4,200	3,800	3,200	4,200	4,200	3,500	2,700
JULIETT/500	Air	11,900	11,000	9,900	8,200	11,000	11,000	9,200	6,900
	Impact	6,200	5,700	5,300	4,400	5,700	5,700	4,900	3,800
KILO/1,000	Air	15,600	14,200	12,900	10,700	14,200	14,200	11,900	8,900
	Impact	7,800	7,200	6,600	5,600	7,200	7,200	6,200	4,800
LIMA/2,000	Air	20,600	18,800	17,000	14,000	18,800	18,800	15,600	11,800
	Impact	10,100	9,400	8,600	7,100	9,400	9,400	7,900	6,100
MIKE/5,000	Air	29,300	26,700	23,300	20,200	26,700	26,700	22,900	16,800
	Impact	14,000	12,900	11,800	9,900	12,900	12,900	10,900	8,500

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 8.7d.

CRATER DIMENSIONS (See note.)

Yield KT	Approx crater dimensions for various soil types—meters							
	Hard rock (granite and sandstone)		Soft rock (dry soil or soft rock)		Saturated soil (water slowly fills crater)		Saturated soil (water rapidly fills crater)	
	Radius	Depth	Radius	Depth	Radius	Depth	Radius	Depth
INDIA/200	92	20	115	24	172	36	229	17
JULIETT/500	114	25	155	31	233	46	310	22
KILO/1,000	156	29	196	36	293	54	391	26
LIMA/2,000	197	35	246	43	369	65	492	30
MIKE/5,000	267	43	334	54	501	81	668	38

NOTE: Based on contact surface burst, for more detailed analysis, see engineer element.

Figure 8.7e.

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CHAPTER 9
FIGHTER AIRCRAFT

9.1 GENERAL

a. Orientation. This chapter contains employment data for the nuclear bombs delivered by fighter aircraft.

b. Weapon characteristics.

(1) *Yield.* The bombs carried by fighter aircraft have yields of Delta/5 KT, Echo/10 KT, Foxtrot/20 KT, Golf/50 KT, Hotel/100 KT, India/200 KT, Juliett/500 KT, and Kilo/1 MT.

(2) *Fuzing.*

(*a*) The fuzing for these bombs provides airburst and impact fuzing options. The airburst option is radar-fuzed and can be set for either high or low airburst; these are the only heights of burst available. Contact backup is provided in all cases where the airburst option is selected.

(*b*) The fuzes are preset at the following heights of burst:

Warhead section	*HOB option*	*HOB (meters)*	PE_h *(meters)*
Delta/5 KT	low	227	50
	high	355	
Echo/10 KT	low	240	50
	high	402	
Foxtrot/20 KT	low	257	50
	high	461	
Golf/50 KT	low	286	50
	high	562	
Hotel/100 KT	low	315	50
	high	663	
India/200 KT	low	502	50
	high	790	
Juliett/500 KT	low	620	50
	high	1,009	
Kilo/1 MT	low	735	50
	high	1,225	

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The radius of action for fighter aircraft varies depending on the type fighter used. For training purposes only, a maximum radius of action of 800 kilometers is assumed. In an actual situation, the delivery unit concerned is consulted to obtain this information.

(2) *Tactical system accuracy.* Horizontal dispersion is dependent on the proficiency of the aircraft pilot and crew, and the technique of delivery. The CEP used in this chapter for fighter delivery is an average value for well-trained crews. A CEP of 250 meters has been used in the computation of the weapon selection tables. The vertical probable error is 50 meters.

(3) *Response time.* The times shown below can be used as a basis for general tactical planning. For detailed tactical planning, the *response times should be the actual times obtained from the delivery unit concerned.* The times listed below are average times for normal operations after alert. Such factors as distance and routes to the bomb storage area, type of transportation, type of ground handling equipment, and enemy action influence bomb preparation and loading.

Situation	*Time (minutes)*	*Remarks*
I[1]	60	(*a*) In both situations, flight time must be added to the times shown. (*b*) Time may vary in situation I as distance from storage area to aircraft varies.
II[2]	10	

[1]Situation I (ready)—bomb is partially assembled and tested to allow shortest assembly time. The bomb is located in a storage area.

[2]Situation II (strike)—bomb is assembled and loaded on the aircraft. The aircraft and crew are on ground alert.

(4) *Special considerations.* The target analyst coordinates closely with the liaison officer representing the delivery unit concerned. The analyst needs to know the CEP involved, because CEP varies depending on the crew assigned and the delivery technique used to attack the target. (See para 9.1*c*(2), above, for assumption made for the weapon on selection tables that follow.) When an airburst fuzing option is selected, the fire mission states the desired radar HOB setting as high or low. When an impact fuzing option is selected, the fire mission specifies HOB impact. When employing these weapons, a fallout prediction is always made.

FTR ACFT 1

[1]Fighter Aircraft.

EXPOSED Personnel Targets
Fighter Aircraft

Yield	HOB option (HOB-meters)	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o
			PROMPT CASUALTIES								DELAYED CASUALTIES								(meters)		
			Target radius (meters)								Target radius (meters)										
KT	(See note)	(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	Prompt	Delayed	(meters)
5	High (355)	3,700	.7/.9	.6/.8	.5/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.2	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	650	950	460
	Low (227)	3,700	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	725	1,000	(all
	Impact	*2,600	.8/.9	.7/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.3	.1/.2	.7/.8	.5/.7	.4/.5	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	800	1,050	yields)
			Target radius (meters)								Target radius (meters)										
			600	800	1,000	1,200	1,400	1,600	1,800	2,000	800	1,200	1,600	2,000	2,400	2,800	3,200				
10	High (402)	4,600	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.7	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		825	1,050	
	Low (240)	4,600	.8/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	6/.8	.4/.5	.3/.3	.2/.2	1/.2	.1/.1		875	1,125	
	Impact	*3,100	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1		900	1,175	
			Target radius (meters)								Target radius (meters)										
			1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600			
20	High (461)	6,400	.7/.9	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.1/.2	.8/.9	.6/.8	.4/.5	.3/.4	.2/.2	.1/.2	.1/.1		1,125	1,125	
	Low (257)	6,400	.7/.9	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,125	1,200	
	Impact	*3,900	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,000	1,250	
			Target radius (meters)								Target radius (meters)										
			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
50	High (562)	9,200	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,650	1,650	
	Low (286)	9,200	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,600	1,600	
	Impact	*5,400	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.8/.9	.6/.8	.5/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,300	1,475	
			Target radius (meters)								Target radius (meters)										
			2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800	2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800			
100	High (663)	11,900	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	2,175	2,175	
	Low (315)	11,900	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	2,100	2,100	
	Impact	*6,900	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,725	1,725	
			Target radius (meters)								Target radius (meters)										
			3,000	3,800	4,600	5,400	6,200	7,000	7,800		3,000	3,800	4,600	5,400	6,200	7,000	7,800				
200	High (790)	15,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	1/.1		2,875	2,875	
	Low (502)	15,800	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		2,850	2,850	
	Impact	*8,800	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1				.5/.6	.3/.4	.2/.3	.1/.2	.1/.1				2,275	2,275	
			Target radius (meters)								Target radius (meters)										
			3,400	4,200	5,000	5,800	6,600	7,400	8,200	9,000	3,400	4,200	5,000	5,800	6,600	7,400	8,200	9,000			
500	High (1,009)	22,300	.9/.9	.8/.8	.6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.9/.9	.8/.8	6/.7	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	4,150	4,150	
	Low (620)	22,300	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	4,100	4,100	
	Impact	*12,000	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	3,300	3,300	
			Target radius (meters)								Target radius (meters)										
			5,800	6,600	7,400	8,200	9,000	9,800	10,600	11,400	5,800	6,600	7,400	8,200	9,000	9,800	10,600	11,400			
1,000	High (1,225)	28,900	.7/.8	.6/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.3	.2/.2	.7/.8	.6/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.3	.2/.2	5,475	5,475	
	Low (735)	28,300	.7/.8	.6/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.3	.2/.2	.7/.8	.6/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.3	.2/.2	5,425	5,425	
	Impact	*15,600	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.2	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.2	4,350	4,350	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst –Precludes fallout.
Impact burst –Produces fallout.

*Initial effects only. Fallout governs.

Figure 9.1.

Yield KT	HOB option (HOB-meters) (See note)	Minimum safe distance (negligible risk, Unll Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o (meters)
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
			200	400	600	800	1,000	1,200	1,400	1,600	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	Prompt	Delayed	
5	High (355)	3,700	.6/.8	.5/.7	.3/.5	.2/.4	.1/.3	.1/.2	.0/.1		.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		425	675	460 (all yields)
	Low (227)	3,700	.7/.9	.6/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.1/.1	.6/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	525	750	
	Impact	*2,600	.8/.9	.6/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	625	825	
			Target radius (meters)								Target radius (meters)										
			400	600	800	1,000	1,200	1,400	1,600	1,800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400			
10	High (402)	4,600	.5/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1		.5/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	.1/.1		500	775	
	Low (240)	4,600	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	625	850	
	Impact	*3,100	.7/.9	.6/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	700	925	
			Target radius (meters)								Target radius (meters)										
			400	600	800	1,000	1,200	1,400	1,600	1,800	800	1,200	1,600	2,000	2,400	2,800					
20	High (461)	6,400	.7/.9	.5/.7	.4/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.4/.5	.2/.3	.1/.2	.1/.2	.0/.1			575	850	
	Low (257)	6,400	.8/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.7/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			725	975	
	Impact	*3,900	.8/.9	.7/.9	.6/.7	.5/.6	.4/.4	.3/.3	.2/.3	.1/.2	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			800	1,025	
			Target radius (meters)								Target radius (meters)										
			600	800	1,000	1,200	1,400	1,600	1,800	2,000	800	1,200	1,600	2,000	2,400	2,800	3,200				
50	High (562)	9,200	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	1/.1			650	975	
	Low (286)	9,200	.8/.9	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		850	1,125	
	Impact	*5,400	.8/.9	.7/.8	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	9/.9	.7/.8	4/.5	.3/.4	.2/.3	.1/.2	1/.1		925	1,175	
			Target radius (meters)								Target radius (meters)										
			800	1,200	1,600	2,000	2,400	2,800	3,200		800	1,200	1,600	2,000	2,400	2,800	3,200	3,600			
100	High (663)	11,900	.6/.8	.4/.5	.2/.3	.1/.2	.1/.1				8/.9	.6/.7	4/.5	.2/.3	.1/.2	.1/.2	.1/.1		850	1,050	
	Low (315)	11,900	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	975	1,250	
	Impact	*6,900	.8/.9	.6/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1		.9/.9	.7/.8	5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	
			Target radius (meters)								Target radius (meters)										
			800	1,200	1,600	2,000	2,400	2,800	3,200		1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
200	High (790)	15,800	.8/.9	.6/.7	.3/.4	.2/.3	.1/.2	.1/.1			.7/.8	.4/.6	.3/.4	.2/.3	1/.2	.1/.1			1,050	1,150	
	Low (502)	15,800	.8/.9	.5/.7	.3/.4	.2/.3	.1/.2	.1/.1			.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		1,000	1,325	
	Impact	*8,800	.8/.9	.6/.8	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,150	1,450	
			Target radius (meters)								Target radius (meters)										
			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
500	High (1,009)	22,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,400	1,400	
	Low (620)	22,300	.8/.9	.6/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	1,350	1,475	
	Impact	*12,000	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.9/.9	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	1,675	1,675	
			Target radius (meters)								Target radius (meters)										
			1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400			
1,000	High (1,225)	28,900	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.8/.9	.6/.7	.5/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	1,750	1,750	
	Low (735)	28,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	1,700	1,700	
	Impact	*15,600	.9/.9	.8/.9	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	.9/.9	.8/.9	.6/.7	.5/.6	.4/.4	.3/.4	.2/.3	.2/.2	2,100	2,100	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst –Precludes fallout.
Impact burst –Produces fallout.

*Initial effects only. Fallout governs.

Figure 9.2.

[1]Fighter Aircraft.

FTR ACFT 1

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Yield	HOB option (HOB–meters)	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED In the column under each target radius, the first figure is the probable minimum coverage, the second figure is the average coverage.																	Offset distance d_o
			WHEELED VEHICLES									TANKS AND ARTILLERY								
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
KT	(See note)	(meters)	200	300	400	500	600	700	800	900	(meters)	100	150	200	250	300	350	400	450	(meters)	(meters)
5	High (355)	3,700	.0/.2	.0/.2	.0/.2	.0/.1					0	.0/.0								0	460 (all yields)
	Low (227)	3,700	.1/.7	.1/.6	.1/.5	.1/.4	.0/.4	.0/.3	.0/.2	.0/.2	175	.0/.2	.0/.2	.0/.1						0	
	Impact	*2,600	.1/.6	.2/.5	.2/.4	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	325	.0/.4	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	225	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			200	400	600	800	1,000	1,200	1,400	1,600	(meters)	100	150	200	250	300	350	400	450	(meters)	
10	High (402)	4,600	.0/.4	.0/.3	.0/.2	.0/.2	.0/.1				0	.0/.1								0	
	Low (240)	4,600	.7/.8	.5/.8	.4/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1	500	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.0/.2	50	
	Impact	*3,100	.4/.8	.4/.6	.3/.4	.2/.3	.1/.2	.1/.1			450	.0/.6	.0/.5	.1/.5	.1/.5	.1/.5	.1/.4	.1/.4	.2/.3	300	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			400	600	800	1,000	1,200	1,400	1,600	1,800	(meters)	100	200	300	400	500	600	700	800	(meters)	
20	High (461)	6,400	.1/.6	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1			175	.0/.1								0	
	Low (257)	6,400	.8/.9	.7/.9	.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	750	.0/.6	.1/.6	.1/.5	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	175	
	Impact	*3,900	.6/.8	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1		575	.3/.7	.3/.7	.3/.6	.3/.5	.3/.5	.2/.4	.2/.3	.2/.2	400	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			600	1,000	1,400	1,800	2,200	2,600	3,000		(meters)	400	600	800	1,000	1,200	1,400	1,600	1,800	(meters)	
50	High (562)	9,200	.7/.9	.4/.7	.2/.4	.0/.3	.0/.2	.0/.1			575	.0/.1								0	
	Low (286)	9,200	.9/.9	.8/.9	.6/.7	.3/.5	.2/.3	.1/.2	.1/.2		1,150	.6/.8	.4/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.2	.0/.1	450	
	Impact	*5,400	.7/.9	.5/.6	.3/.4	.2/.2	.1/.2	.0/.1			850	.5/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		550	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	(meters)	
100	High (663)	11,900	.9/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	1,200	.0/.2	.0/.1							75	
	Low (315)	11,900	.9/.9	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	1,575	.8/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.3	.1/.2	750	
	Impact	*6,900	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		1,100	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	750	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			2,000	2,400	2,800	3,200	3,600	4,000	4,400	4,800	(meters)	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	(meters)	
200	High (790)	15,800	.6/.7	.4/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,700	.0/.1								225	
	Low (502)	15,800	.8/.9	.6/.7	.5/.6	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	2,025	.4/.6	.3/.5	.2/.4	.1/.3	.1/.3	.1/.2	.1/.2	.0/.2	775	
	Impact	*8,800	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1			1,450	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	975	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			2,800	3,600	4,400	5,200	6,000	6,800	7,600	8,400	(meters)	1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	(meters)	
500	High (1,009)	22,300	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		2,575	.1/.2	.0/.1							525	
	Low (620)	22,300	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	3,000	.6/.8	.4/.6	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.0/.1	1,400	
	Impact	*12,000	.5/.6	.3/.4	.2/.2	.1/.2	.1/.1				2,100	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		1,400	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			3,600	4,400	5,200	6,000	6,800	7,600	8,400	9,200	(meters)	2,400	2,800	3,200	3,600	4,000	4,400	4,800	5,200	(meters)	
1,000	High (1,225)	28,900	.7/.8	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	3,500	.1/.2	.0/.1							850	
	Low (735)	28,300	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	4,025	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	2,075	
	Impact	*15,600	.5/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1			2,775	.5/.6	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	1,850	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 9.3.

[1]Fighter Aircraft.

FTR ACFT 1

Troop Safety Distances—Meters
Fighter Aircraft

Range	Yield	Height of burst option	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
			Unwarned Exposed			Warned Exposed			Warned Protected		
			NEG Risk	MOD Risk	EMER Risk	NEG Risk	MOD Risk	EMER Risk	NEG Risk	MOD Risk	EMER Risk
Range of aircraft is 800 km	DELTA/ 5 KT	High	3,700	2,900	2,500	2,600	2,200	1,900	2,200	1,900	1,600
		Low	3,700	2,900	2,500	2,600	2,200	1,900	2,200	1,900	1,600
		Impact[1]	2,600	2,200	1,900	2,600	2,200	1,900	2,200	1,900	1,700
	ECHO/ 10 KT	High	4,600	3,700	3,500	3,200	2,300	2,000	2,500	2,000	1,700
		Low	4,600	3,700	3,500	3,200	2,400	2,100	2,300	2,000	1,700
		Impact[1]	3,100	2,400	2,100	2,700	2,400	2,100	2,300	2,000	1,800
	FOXTROT/ 20 KT	High	6,400	4,600	4,000	4,100	2,800	2,300	2,600	2,200	1,800
		Low	6,400	4,600	4,000	4,100	2,800	2,400	2,900	2,200	1,900
		Impact[1]	3,900	3,000	2,600	2,800	2,500	2,200	2,400	2,200	1,900
	GOLF/ 50 KT	High	9,200	7,100	6,300	5,900	3,900	3,200	3,100	2,400	2,000
		Low	9,200	7,100	6,300	5,900	3,900	3,200	3,200	2,500	2,000
		Impact[1]	5,400	4,300	3,800	3,700	2,800	2,400	2,900	2,300	2,100
	HOTEL/ 100 KT	High	11,900	9,500	7,800	7,800	5,200	4,200	4,300	3,200	2,200
		Low	11,900	9,500	7,800	7,800	5,200	4,200	4,300	3,200	2,200
		Impact[1]	6,900	5,500	4,700	4,700	3,200	2,700	3,500	2,800	2,200
	INDIA/ 200 KT	High	15,800	12,400	11,000	10,400	7,000	5,600	5,200	3,800	2,500
		Low	15,800	12,400	11,000	10,400	7,000	5,600	4,800	3,600	2,300
		Impact[1]	8,800	7,200	6,200	6,000	4,200	3,400	4,200	3,300	2,300
	JULIETT/ 500 KT	High	22,300	18,300	16,100	14,900	9,900	7,900	6,700	4,900	3,100
		Low	22,300	18,300	16,100	14,900	9,900	7,900	6,200	4,600	2,800
		Impact[1]	12,000	10,200	9,000	8,400	5,800	4,700	5,500	4,300	2,900
	KILO/ 1,000 KT	High	28,900	24,300	21,400	19,500	13,200	10,500	8,200	6,000	3,700
		Low	28,300	23,800	21,000	19,100	13,000	10,300	7,600	5,700	3,400
		Impact[1]	15,600	13,300	11,800	10,700	7,500	6,100	6,800	5,300	3,600

NOTE: The troop safety distances include the safety radius for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly disposition. See figure 9.5 for special friendly troop orientations.

[1]Initial effects only. Fallout governs.

Figure 9.4.

SUPPLEMENTARY TROOP SAFETY Tables
Fighter Aircraft

The troop safety distances in figure 9.4 are based on the friendly troop orientation shown in figure 1, below. The circular delivery pattern of the fighter aircraft may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ- Desired ground zero.
R_S – Safety radius.
d_b – Buffer distance.
~~~-Friendly troops.
⟶-Direction of fire.

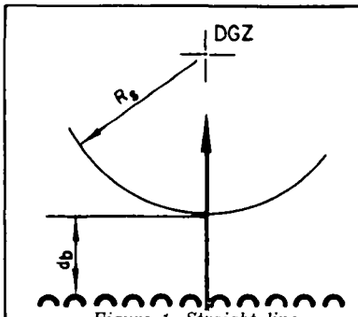

Figure 1. Straight line, perpendicular delivery.

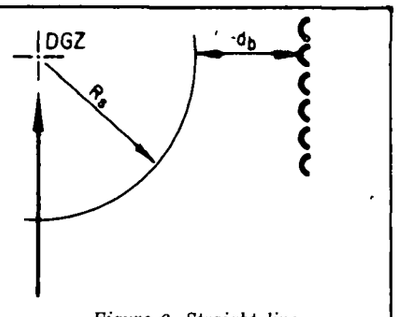

Figure 2. Straight line, parallel delivery.

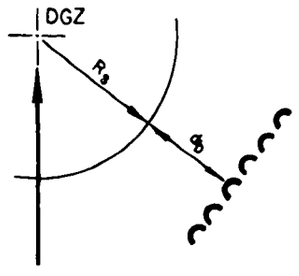

Figure 3. Straight line, 45° delivery.

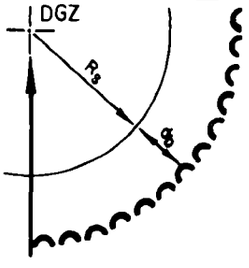

Figure 4. Quarter circle.

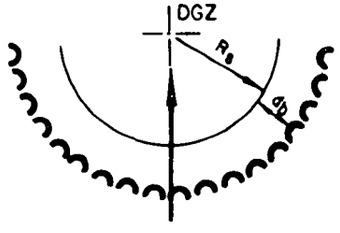

Figure 5. Half circle.

When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figure 9.4 must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

All Height of Burst Options–All Yields				
Range (meters)	*Straight line, parallel delivery (fig 2)*	*Straight line, 45° delivery (fig 3)*	*Quarter circle (fig 4)*	*Half circle (fig 5)*
All ranges	0	0	+100	+200

Figure 9.5.

FTR
ACFT 1

[1]Fighter Aircraft.
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CASUALTY and DAMAGE Tables
Fighter Aircraft
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Deloyed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,050		0											3,025	2,150	1,700	1,750	1,350	875	1,225	875	350
1,025		225										0	3,025	2,150	1,700	1,750	1,350	900	1,250	900	425
1,000		325				0						175	3,025	2,150	1,725	1,775	1,375	925	1,275	925	475
975		400				150						275	3,025	2,175	1,750	1,775	1,400	950	1,300	950	525
950		450				250				0		350	3,050	2,175	1,750	1,800	1,400	1,000	1,300	975	575
925		500				350				200		425	3,050	2,200	1,775	1,800	1,425	1,000	1,325	1,000	600
900		550				400				300	0	475	3,060	2,200	1,775	1,825	1,450	1,025	1,350	1,025	650
875		575				450				350	650	650	3,075	2,225	1,800	1,825	1,450	1,050	1,350	1,050	675
850		625				500				400	750	750	3,075	2,225	1,800	1,850	1,475	1,075	1,375	1,075	700
825		650		0		550				450	850	850	3,075	2,225	1,800	1,850	1,500	1,100	1,400	1,075	725
800	0	675		200		575				500	925	925	3,100	2,250	1,825	1,875	1,500	1,100	1,400	1,100	750
775	175	700		275		600				550	975	975	3,100	2,250	1,825	1,875	1,525	1,125	1,425	1,125	800
750	275	725		350	0	650				775	1,050	1,050	3,100	2,275	1,850	1,900	1,525	1,150	1,425	1,150	800
725	325	750		400	175	675			0	600	1,150	1,150	3,100	2,275	1,850	1,900	1,550	1,150	1,550	1,150	825
700	375	775		425	250	700			150	625	1,300	1,300	3,125	2,275	1,875	1,900	1,550	1,175	1,700	1,175	850
675	425	800		475	300	725			225	650	1,500	1,500	3,125	2,275	1,875	1,925	1,550	1,200	1,725	1,175	875
650	450	825		500	350	750		0	300	675	1,600	1,600	3,125	2,300	1,875	1,925	1,575	1,200	1,725	1,200	900
625	500	850	0	525	400	750		175	350	700	1,625	1,625	3,125	2,300	1,900	1,925	1,575	1,225	1,725	1,200	925
600	525	850	150	550	450	775		250	375	725	1,650	1,650	3,125	2,300	1,900	1,950	1,600	1,225	1,725	1,225	925
575	550	875	225	575	475	800		300	425	750	1,650	1,650	3,150	2,300	1,900	1,950	1,600	1,250	1,725	1,225	950
550	575	900	300	600	500	825		350	450	775	1,625	1,625	3,150	2,325	1,900	1,950	1,600	1,250	1,750	1,250	950
525	600	900	325	625	525	825		375	525	775	1,625	1,625	3,150	2,325	1,925	1,950	1,625	1,275	1,725	1,250	975
500	625	925	375	650	550	850		425	825	825	1,600	1,600	3,150	2,325	1,925	1,975	1,625	1,275	1,700	1,275	975
475	650	925	400	675	575	875	0	450	875	875	1,550	1,550	3,150	2,325	1,925	1,975	1,625	1,275	1,675	1,275	1,000
450	650	950	425	700	600	875	100	475	925	925	1,525	1,525	3,150	2,350	1,950	1,975	1,650	1,300	1,650	1,300	1,000
425	675	950	450	700	600	875	175	500	925	925	1,475	1,475	3,175	2,350	1,950	2,000	1,650	1,300	1,625	1,300	1,025
400	700	975	475	725	625	900	225	525	925	925	1,450	1,450	3,175	2,350	1,950	2,000	1,650	1,300	1,600	1,300	1,025
375	700	975	500	725	650	900	275	525	925	925	1,425	1,425	3,175	2,350	1,950	2,000	1,650	1,325	1,575	1,300	1,050
350	725	975	500	750	650	925	300	550	900	900	1,400	1,400	3,175	2,350	1,950	2,000	1,675	1,325	1,575	1,325	1,050
325	725	1,000	525	750	675	925	325	575	875	875	1,375	1,375	3,175	2,350	1,975	2,000	1,675	1,325	1,575	1,325	1,050
300	750	1,000	550	775	675	950	350	575	850	900	1,350	1,350	3,175	2,350	1,975	2,000	1,675	1,350	1,600	1,325	1,075
275	750	1,000	550	775	700	950	375	600	850	900	1,300	1,300	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,325	1,075
250	750	1,025	575	775	700	950	400	600	825	900	1,275	1,275	3,175	2,375	1,975	2,025	1,675	1,350	1,600	1,350	1,075
225	775	1,025	575	800	700	950	400	600	800	925	1,250	1,250	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,075
200	775	1,025	600	800	725	975	425	625	800	925	1,225	1,225	3,175	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
175	775	1,025	600	800	725	975	425	625	775	925	1,200	1,200	3,200	2,375	1,975	2,025	1,700	1,350	1,600	1,350	1,100
150	775	1,025	600	800	725	975	425	625	750	925	1,175	1,175	3,200	2,375	2,000	2,025	1,700	1,350	1,600	1,350	1,100
125	775	1,050	600	800	725	975	450	650	750	925	1,150	1,150	3,200	2,375	2,000	2,025	1,700	1,375	1,625	1,350	1,100
100	800	1,050	625	825	750	975	450	650	725	950	1,125	1,125	3,150	2,375	1,950	2,025	1,700	1,375	1,625	1,350	1,100
75	800	1,050	625	825	750	975	450	650	700	950	1,125	1,125	2,800	2,200	1,800	2,025	1,700	1,375	1,625	1,350	1,100
50	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,550	2,025	1,650	2,025	1,700	1,375	1,625	1,375	1,100
25	800	1,050	625	825	750	975	450	650	725	950	1,075	1,075	2,275	1,850	1,525	2,025	1,700	1,375	1,625	1,375	1,100
0	800	1,050	625	825	750	975	450	650	725	950	1,050	1,050	2,125	1,700	1,375	2,025	1,700	1,375	1,625	1,375	1,100

HOB_{fs} = 52 m

Low HOB_{min} ≈ 91 m

High HOB_{min} ≈ 206 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 9.6a.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d Degree Burns			1 PSI over-pressure	Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,050							1,175			2,875			0–5				0–500	
1,025							1,200			2,875			0–5				0–550	
1,000							1,225			2,875			0–10				0–600	
975							1,225			2,900			0–10				0–600	
950							1,250			2,900			0–10				0–650	
925							1,275			2,900			0–10				0–700	
900							1,300			2,900			0–15				0–750	
875							1,300			2,925			0–15				0–750	
850							1,325			2,925			0–20				0–800	
825							1,350			2,925		0	0–20			0	0–800	
800							1,350			2,925		0–5	0–25			0–50	0–850	
775							1,375			2,900		0–5	0–30			0–200	0–850	
750							1,375	0		2,900		0–5	0–35			0–300	0–900	
725							1,400	75		2,900		0–5	0–45			0–350	0–900	
700							1,400	200		2,900		0–5	5–50			0–400	50–950	
675							1,425	275		2,875		0–10	5–65			0–450	200–950	
650							1,425	325		2,875		0–10	5–80			0–500	300–950	
625							1,450	375		2,850		0–10	5–100			0–500	350–1,000	
600							1,450	425		2,850		0–10	5–120			0–550	400–1,000	
575							1,475	450		2,850	0	0–15	10–150		0	0–600	400–1,000	
550							1,475	475		2,825	0–5	0–20	10–190		0–50	0–600	450–1,050	
525							1,475	500		2,825	0–5	0–25	10–250		0–200	0–650	450–1,050	
500				0			1,500	525		2,800	0–5	0–25	15–300		0–250	0–650	500–1,050	
475				50			1,500	550		2,800	0–5	0–40	20–450		0–300	0–650	550–1,050	
450				100			1,500	575		2,775	0–5	5–50	25–570		0–300	50–700	550–1,100	
425				150			1,525	600		2,750	0–10	5–70	30–750		0–350	150–700	600–1,100	
400	0			200		0	1,525	600	0	2,725	0–10	5–90	40–1,000		0–400	200–700	600–1,100	
375	50			250		400	1,525	625	125	2,725	0–15	5–110	50–1,300		0–400	250–750	600–1,100	
350	100			300		425	1,525	650	175	2,700	0–15	10–140	70–1,600		0–400	300–750	650–1,100	
325	150		0	325		425	1,550	650	225	2,675	0–20	10–165	80–1,980		0–400	350–750	650–1,100	
300	250	0	50	350		425	1,550	675	250	2,650	0–25	10–200	100–2,340		0–450	350–750	650–1,150	
275	375	25	100	375		450	1,550	675	275	2,625	0–25	10–240	120–2,820		0–500	400–800	650–1,150	
250	400	75	150	400		450	1,550	675	300	2,600	0–35	15–275	140–3,300		0–500	400–800	700–1,150	
225	425	100	175	400		450	1,550	700	325	2,575	0–35	15–325	160–3,900		0–550	400–800	700–1,150	
200	450	125	200	425		475	1,550	700	350	2,550	5–50	20–450	220–5,400		50–550	450–800	700–1,150	
175	450	175	225	450	0	475	1,575	700	350	2,525	5–60	25–550	280–6,600	0	100–550	450–800	700–1,150	0
150	475	225	225	450	400	500	1,575	725	375	2,475	5–80	30–700	340–8,400	0–5	150–550	450–800	700–1,150	0–50
125	500	275	250	475	425	500	1,575	725	375	2,450	5–100	40–940	450–11,000	0–5	200–550	450–800	700–1,150	0–100
100	500	300	250	475	425	525	1,550	725	400	2,425	5–125	50–1,140	540–13,500	0–5	200–550	450–800	700–1,150	0–150
75	500	300	275	475	425	525	1,400	650	350	2,400	10–160	60–1,450	700–17,400	0–5	200–550	450–800	700–1,150	0–150
50	475	300	275	475	400	500	1,250	575	325	2,350	FALLOUT GOVERNS							
25	450	275	250	425	350	475	1,100	500	275	2,325								
0	325	225	175	375	300	400	925	450	250	2,275								

Figure 9.6a continued.

FTR ACFT 1

[1]Fighter Aircraft.

CASUALTY and DAMAGE Tables
Fighter Aircraft
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		0									600	600	3,850	2,975	2,700	2,375	1,375	925	1,275	900	100
1,150		250									850	850	3,850	3,000	2,725	2,400	1,400	1,000	1,325	950	350
1,100		400				0				0	1,000	1,000	3,875	3,000	2,750	2,425	1,450	1,050	1,375	1,025	500
1,050		525				325				150	1,150	1,150	3,875	3,025	2,750	2,425	1,500	1,100	1,400	1,075	600
1,000		625				450				350	1,300	1,300	3,900	3,050	2,775	2,450	1,525	1,150	1,500	1,125	675
950		700		0		550				475	1,500	1,500	3,900	3,050	2,800	2,475	1,550	1,200	1,650	1,150	750
900	0	750		200		625				550	1,750	1,750	3,925	3,075	2,800	2,500	1,575	1,225	2,100	1,200	800
850	275	800		350	0	700			0	625	2,125	2,125	3,925	3,075	2,825	2,500	1,600	1,250	2,175	1,250	850
800	400	850		450	300	750			175	700	2,175	2,175	3,950	3,100	2,850	2,525	1,625	1,300	2,175	1,275	900
775	450	875		500	350	775			475	725	2,200	2,200	3,950	3,100	2,850	2,525	1,650	1,300	2,175	1,275	925
750	500	900		550	400	800		0	550	750	2,200	2,200	3,950	3,100	2,850	2,550	1,650	1,325	2,175	1,325	950
725	525	925	0	575	450	825		175	625	775	2,200	2,200	3,950	3,125	2,850	2,550	1,675	1,350	2,175	1,400	950
700	550	950	100	600	475	850		250	675	800	2,175	2,175	3,975	3,125	2,875	2,550	1,675	1,350	2,225	1,475	975
675	600	950	200	625	525	875		325	725	825	2,175	2,175	3,975	3,125	2,875	2,550	1,700	1,350	2,200	1,500	1,000
650	625	975	275	650	550	875		375	1,200	1,200	2,150	2,150	3,975	3,150	2,875	2,575	1,700	1,375	2,175	1,475	1,000
625	650	1,000	325	675	575	900		400	1,225	1,225	2,125	2,125	3,975	3,150	2,875	2,575	1,700	1,400	2,150	1,475	1,025
600	650	1,000	375	700	600	925		450	1,250	1,250	2,100	2,100	3,975	3,150	2,900	2,575	1,725	1,400	2,125	1,450	1,050
575	675	1,025	400	725	625	950		475	1,275	1,275	2,075	2,075	3,975	3,150	2,900	2,600	1,725	1,400	2,100	1,425	1,050
550	700	1,025	450	750	650	950	0	500	1,275	1,275	2,050	2,050	3,975	3,150	2,900	2,600	1,725	1,425	2,075	1,425	1,075
525	725	1,050	475	750	675	975	150	525	1,250	1,250	2,000	2,000	4,000	3,150	2,900	2,600	1,750	1,425	2,025	1,425	1,075
500	825	1,050	500	775	675	975	225	550	1,250	1,250	1,975	1,975	4,000	3,175	2,900	2,600	1,750	1,450	2,000	1,425	1,100
475	850	1,075	525	800	700	1,000	275	575	1,225	1,225	1,950	1,950	4,000	3,175	2,925	2,600	1,750	1,450	1,950	1,425	1,100
450	850	1,075	550	800	725	1,000	300	600	1,200	1,200	1,900	1,900	4,000	3,175	2,925	2,600	1,750	1,450	1,925	1,425	1,125
425	850	1,100	575	825	725	1,025	350	625	1,175	1,175	1,850	1,850	4,000	3,175	2,925	2,625	1,775	1,450	1,875	1,450	1,125
400	850	1,100	575	825	750	1,025	375	625	1,175	1,175	1,825	1,825	4,000	3,175	2,925	2,625	1,775	1,475	1,850	1,450	1,125
375	875	1,100	600	850	750	1,025	400	650	1,150	1,150	1,775	1,775	4,000	3,175	2,925	2,625	1,775	1,475	1,800	1,450	1,150
350	875	1,125	625	850	775	1,050	425	650	1,125	1,125	1,750	1,750	4,000	3,175	2,925	2,625	1,800	1,475	1,750	1,450	1,150
325	875	1,125	650	850	775	1,050	450	675	1,100	1,100	1,700	1,700	4,025	3,175	2,950	2,625	1,800	1,475	1,725	1,475	1,150
300	875	1,125	650	875	800	1,050	450	675	1,075	1,075	1,650	1,650	4,025	3,175	2,950	2,625	1,800	1,500	1,725	1,475	1,175
275	875	1,150	650	875	800	1,075	475	700	1,075	1,075	1,625	1,625	4,025	3,200	2,950	2,650	1,800	1,500	1,725	1,475	1,175
250	875	1,150	650	900	800	1,075	475	700	1,050	1,050	1,600	1,600	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
225	875	1,150	675	900	825	1,075	500	700	1,025	1,025	1,575	1,575	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,475	1,175
200	875	1,150	675	900	825	1,075	500	725	1,025	1,050	1,550	1,550	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
175	875	1,150	700	900	825	1,075	525	725	1,000	1,050	1,500	1,500	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
150	875	1,150	700	900	825	1,100	525	725	975	1,050	1,475	1,475	4,025	3,200	2,950	2,650	1,800	1,500	1,750	1,500	1,200
125	875	1,175	700	900	850	1,100	525	725	975	1,050	1,450	1,450	3,800	3,050	2,850	2,600	1,825	1,525	1,750	1,500	1,200
100	900	1,175	700	925	850	1,100	525	750	950	1,050	1,425	1,425	3,575	2,825	2,600	2,525	1,825	1,525	1,750	1,500	1,200
75	900	1,175	700	925	850	1,100	550	750	925	1,050	1,400	1,400	3,325	2,600	2,350	2,450	1,825	1,525	1,750	1,500	1,200
50	900	1,175	700	925	850	1,100	550	750	900	1,050	1,375	1,375	3,075	2,350	2,100	2,350	1,825	1,525	1,750	1,500	1,200
25	900	1,175	700	925	850	1,100	550	750	900	1,050	1,350	1,350	2,850	2,125	1,850	2,275	1,825	1,525	1,750	1,500	1,200
0	900	1,175	700	925	850	1,100	550	750	875	1,050	1,325	1,325	2,575	1,875	1,600	2,175	1,825	1,525	1,750	1,500	1,200

$HOB_{fs} = 65$ m
Low $HOB_{min} = 115$ m
High $HOB_{min} = 259$ m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h^{.m}$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h^{.m}$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h^{.m}$ m

Figure 9.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							1,775			3,650			0–5				0–650	
1,150							1,825			3,675			0–5				0–750	
1,100							1,850			3,675			0–10				0–800	
1,050							1,875	0		3,675			0–10				0–850	
1,000							1,900	150		3,675			0–15				0–950	
950							1,925	350		3,675		0	0–20			0	0–1,000	
900							1,950	450		3,650		0–5	0–25			0–50	0–1,050	
850							1,975	550		3,625		0–5	0–35			0–350	0–1,050	
800							2,000	625		3,600		0–5	5–45			0–450	50–1,100	
775							2,000	650		3,600		0–5	5–55			0–500	200–1,150	
750							2,025	675		3,600		0–10	5–70			0–550	300–1,150	
725							2,025	700		3,575		0–10	5–85			0–550	350–1,150	
700							2,025	725		3,575		0–10	5–100			0–600	400–1,200	
675							2,050	750		3,550		0–15	5–125			0–600	450–1,200	
650							2,050	775		3,550		0–15	10–160			0–650	500–1,200	
625				0			2,050	800		3,525	0	0–20	10–200		0	0–700	500–1,200	
600				50			2,075	800		3,525	0–5	0–20	10–240		0–50	0–700	550–1,250	
575				125			2,075	825		3,500	0–5	0–25	15–300		0–200	0–700	600–1,250	
550				175			2,075	850	0	3,475	0–5	0–35	15–380		0–250	0–750	600–1,250	
525				225			2,075	875	125	3,450	0–5	0–45	20–500		0–300	0–750	650–1,250	
500	0			275			2,100	875	200	3,450	0–10	5–50	25–600		0–350	50–800	650–1,300	
475	50			325		0	2,100	900	250	3,425	0–10	5–75	40–900		0–400	150–800	650–1,300	
450	125			375		575	2,100	900	300	3,400	0–15	5–100	50–1,140		0–400	250–800	700–1,300	
425	175		0	400		600	2,100	925	325	3,375	0–15	5–125	60–1,500		0–450	300–800	700–1,300	
400	225		25	425		600	2,125	925	375	3,350	0–20	10–170	80–1,980		0–450	300–850	700–1,300	
375	350	0	75	475		600	2,125	950	400	3,325	0–25	10–220	120–2,600		0–500	350–850	750–1,300	
350	475	25	125	475		625	2,125	950	400	3,300	0–30	15–270	140–3,200		0–500	400–850	750–1,350	
325	500	75	175	500		625	2,125	950	425	3,275	0–40	15–330	160–3,960		0–500	400–850	750–1,350	
300	550	100	200	525		625	2,125	975	450	3,250	5–45	20–390	200–4,680		50–550	400–850	750–1,350	
275	575	150	250	550		625	2,125	975	475	3,225	5–55	20–470	230–5,650	0	150–550	450–900	800–1,350	0
250	575	175	275	550		625	2,125	975	475	3,200	5–65	25–550	270–6,600	0–5	200–550	450–900	800–1,350	0–50
225	600	225	275	575	0	650	2,150	975	500	3,175	5–75	30–650	320–7,800	0–5	200–600	450–900	800–1,350	0–150
200	625	275	300	600	450	650	2,150	1,000	500	3,150	5–100	40–900	440–10,800	0–5	250–600	500–900	800–1,350	0–150
175	650	350	325	600	525	650	2,150	1,000	500	3,125	5–125	50–1,100	540–13,200	0–5	250–600	500–900	800–1,350	0–200
150	650	375	325	625	550	650	2,150	1,000	525	3,075	10–160	60–1,400	680–16,800	0–5	300–600	500–900	800–1,350	0–200
125	650	375	350	625	575	650	2,075	975	525	3,050	10–200	75–1,850	900–22,200	0–5	300–600	500–900	800–1,350	0–250
100	650	375	350	650	575	650	1,900	900	475	3,025	10–250	90–2,250	1,080–27,000	0–10	300–600	500–900	800–1,350	0–250
75	650	400	375	625	575	650	1,750	825	450	2,975	15–320	120–2,900	1,400–34,800	0–10	300–600	500–900	800–1,350	0–250
50	625	375	350	600	525	625	1,575	750	400	2,950	FALLOUT COVERNS							
25	550	350	300	575	500	575	1,425	675	375	2,900								
0	450	300	250	500	425	500	1,250	600	325	2,875								

FTR ACFT [1]

Figure 9.6b continued.

[1]Fighter Aircraft.

CASUALTY and DAMAGE Tables
Fighter Aircraft
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in 4PC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,200		400				250				0	1,600	1,600	5,725	3,850	3,275	3,350	1,950	1,375	2,050	1,075	575
1,150		525				425				250	1,750	1,750	5,725	3,875	3,300	3,375	1,975	1,425	2,475	1,125	675
1,100		625				550				425	1,950	1,950	5,750	3,875	3,325	3,400	2,000	1,450	2,700	1,150	750
1,050		700		0		625				525	2,350	2,350	5,750	3,900	3,350	3,400	2,025	1,500	2,750	1,275	825
1,000	0	775		225	0	700			0	625	2,625	2,625	5,750	3,900	3,350	3,425	2,050	1,525	2,750	1,400	875
950	300	825		400	175	775			475	700	2,675	2,675	5,775	3,925	3,375	3,425	2,075	1,550	2,750	1,650	925
900	425	875		500	350	825			625	750	2,700	2,700	5,775	3,925	3,375	3,450	2,100	1,600	2,750	1,800	975
850	525	925		575	450	875		0	800	825	2,700	2,700	5,775	3,950	3,400	3,475	2,125	1,625	2,775	1,875	1,025
800	600	975	0	650	550	925		275	1,150	1,150	2,650	2,650	5,800	3,950	3,400	3,475	2,150	1,650	2,725	1,850	1,075
775	625	1,000	200	675	575	950		350	1,450	1,450	2,650	2,650	5,800	3,950	3,425	3,475	2,150	1,650	2,700	1,850	1,075
750	650	1,025	275	700	600	975		400	1,525	1,525	2,625	2,625	5,800	3,950	3,425	3,475	2,150	1,675	2,675	1,825	1,100
725	675	1,025	325	725	625	975		450	1,550	1,550	2,575	2,575	5,800	3,975	3,425	3,500	2,175	1,675	2,650	1,800	1,125
700	700	1,050	400	750	675	1,000		475	1,550	1,550	2,525	2,525	5,800	3,975	3,425	3,500	2,175	1,700	2,600	1,800	1,125
675	725	1,075	425	775	700	1,025		525	1,525	1,525	2,475	2,475	5,800	3,975	3,425	3,500	2,175	1,700	2,575	1,775	1,150
650	1,000	1,075	475	800	725	1,050	0	550	1,525	1,525	2,450	2,450	5,825	3,975	3,450	3,500	2,200	1,700	2,550	1,750	1,150
625	1,100	1,100	500	825	725	1,050	125	575	1,525	1,525	2,400	2,400	5,825	3,975	3,450	3,500	2,200	1,725	2,500	1,725	1,175
600	1,125	1,125	525	825	750	1,075	200	600	1,500	1,500	2,350	2,350	5,825	3,975	3,450	3,525	2,200	1,725	2,475	1,700	1,200
575	1,125	1,125	550	850	775	1,075	275	625	1,500	1,500	2,325	2,325	5,825	4,000	3,450	3,525	2,225	1,750	2,425	1,675	1,200
550	1,150	1,150	575	875	800	1,100	325	650	1,475	1,475	2,275	2,275	5,825	4,000	3,450	3,525	2,225	1,750	2,400	1,650	1,225
525	1,150	1,150	600	875	800	1,100	350	675	1,450	1,450	2,250	2,250	5,825	4,000	3,450	3,525	2,225	1,750	2,350	1,625	1,225
500	1,150	1,150	625	900	825	1,125	400	700	1,425	1,425	2,200	2,200	5,825	4,000	3,475	3,525	2,225	1,750	2,300	1,600	1,225
475	1,150	1,175	650	900	850	1,125	425	700	1,400	1,400	2,175	2,175	5,825	4,000	3,475	3,525	2,250	1,775	2,275	1,575	1,250
450	1,150	1,175	650	925	850	1,150	450	725	1,375	1,375	2,150	2,150	5,825	4,000	3,475	3,525	2,250	1,775	2,225	1,550	1,250
425	1,150	1,175	675	925	875	1,150	475	750	1,350	1,350	2,100	2,100	5,825	4,000	3,475	3,525	2,250	1,775	2,175	1,550	1,275
400	1,150	1,200	700	950	875	1,150	500	750	1,350	1,350	2,075	2,075	5,825	4,000	3,475	3,550	2,250	1,775	2,125	1,550	1,275
375	1,150	1,200	700	950	875	1,175	525	775	1,325	1,325	2,050	2,050	5,850	4,025	3,475	3,550	2,250	1,800	2,100	1,575	1,275
350	1,150	1,200	725	975	900	1,175	525	775	1,300	1,300	2,025	2,025	5,850	4,025	3,475	3,550	2,250	1,800	2,050	1,575	1,275
325	1,150	1,225	725	975	900	1,175	550	775	1,275	1,275	1,975	1,975	5,850	4,025	3,475	3,550	2,275	1,800	2,025	1,575	1,300
300	1,150	1,225	750	975	925	1,175	550	800	1,275	1,275	1,950	1,950	5,850	4,025	3,500	3,550	2,275	1,800	2,000	1,575	1,300
275	1,150	1,225	750	1,000	925	1,200	575	800	1,250	1,250	1,925	1,925	5,850	4,025	3,500	3,550	2,275	1,800	1,950	1,575	1,300
250	1,150	1,225	750	1,000	925	1,200	575	825	1,225	1,225	1,900	1,900	5,850	4,025	3,500	3,550	2,275	1,800	1,925	1,600	1,300
225	1,150	1,250	775	1,000	950	1,200	600	825	1,225	1,225	1,875	1,875	5,850	4,025	3,500	3,500	2,275	1,825	1,900	1,600	1,325
200	1,150	1,250	775	1,000	950	1,200	600	825	1,200	1,200	1,850	1,850	5,850	4,025	3,500	3,550	2,275	1,825	1,875	1,600	1,325
175	1,125	1,250	775	1,000	950	1,200	625	825	1,175	1,175	1,825	1,825	5,725	3,925	3,400	3,500	2,200	1,800	1,825	1,600	1,325
150	1,125	1,250	800	1,000	950	1,225	625	850	1,175	1,175	1,800	1,800	5,400	3,725	3,200	3,325	2,225	1,775	1,850	1,600	1,325
125	1,100	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,775	1,775	5,100	3,525	3,000	3,150	2,175	1,750	1,850	1,600	1,325
100	1,075	1,250	800	1,025	950	1,225	625	850	1,150	1,175	1,750	1,750	4,750	3,300	2,800	2,975	2,150	1,725	1,850	1,600	1,325
75	1,050	1,250	800	1,025	950	1,225	625	850	1,125	1,175	1,725	1,725	4,500	3,100	2,625	2,750	2,100	1,700	1,875	1,600	1,325
50	1,025	1,250	800	1,025	975	1,225	625	850	1,125	1,175	1,700	1,700	4,100	2,875	2,425	2,600	2,050	1,675	1,875	1,600	1,325
25	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,750	2,675	2,250	2,425	2,025	1,650	1,875	1,600	1,325
0	1,000	1,250	800	1,025	975	1,225	625	850	1,100	1,175	1,675	1,675	3,375	2,475	2,050	2,275	1,975	1,625	1,875	1,600	1,325

$HOB_{fs} = 82$ m
Low $HOB_{min} = 144$ m
High $HOB_{min} = 326$ m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 9.6c.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
							2d° -degree burns				Induced contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam Hwy and RR brgs	Severe dam float brgs	Exposed skin	2-layer summer uniform	4-layer winter uniform	1 PSI over-pressure	Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,200							2,625	650		4,625			0–10				0–750	
1,150							2,650	750		4,600			0–10				0–800	
1,100							2,675	825		4,600			0–15				0–900	
1,050							2,700	875		4,575		0	0–20			0	0–950	
1,000							2,700	925		4,550		0–5	0–25			0–50	0–1,000	
950							2,725	975		4,525		0–5	0–35			0–300	0–1,050	
900							2,750	1,025		4,500		0–5	5–45			0–450	50–1,100	
850							2,750	1,075		4,475		0–10	5–65			0–550	350–1,150	
800				0			2,775	1,100		4,450		0–10	5–90			0–600	450–1,150	
775				25			2,775	1,125		4,450	0	0–10	5–110		0	0–650	500–1,200	
750				75			2,800	1,150	0	4,425	0–5	0–15	10–140		0–50	0–700	550–1,200	
725				150			2,800	1,150	75	4,400	0–5	0–15	10–170		0–200	0–700	550–1,200	
700				225			2,800	1,175	200	4,400	0–5	0–20	10–200		0–300	0–750	600–1,250	
675				275			2,800	1,200	275	4,375	0–5	0–25	10–250		0–350	0–750	600–1,250	
650				325			2,825	1,200	325	4,350	0–5	0–30	15–320		0–400	0–800	650–1,250	
625	0			375		0	2,825	1,225	375	4,325	0–5	0–35	20–390		0–450	0–800	700–1,300	
600	75			425		750	2,825	1,225	425	4,325	0–5	5–40	20–480		0–450	50–800	700–1,300	
575	125			475		775	2,825	1,250	450	4,300	0–10	5–50	25–590		0–500	200–850	700–1,300	
550	200			525		775	2,825	1,250	475	4,275	0–10	5–65	30–750		0–550	250–850	750–1,300	
525	250		0	550		775	2,850	1,275	500	4,250	0–10	5–85	40–990		0–600	300–900	750–1,350	
500	325		25	575		775	2,850	1,275	525	4,225	0–15	5–100	50–1,200		0–600	350–900	800–1,350	
475	425	0	100	600		775	2,850	1,275	550	4,200	0–20	10–150	75–1,800		0–600	400–900	800–1,350	
450	600	25	150	625	0	800	2,850	1,300	575	4,175	0–25	10–190	100–2,280		0–600	400–900	800–1,350	
425	675	75	200	650	550	800	2,850	1,300	600	4,150	0–30	10–250	120–3,000		0–650	450–950	800–1,350	
400	700	100	250	675	650	800	2,850	1,300	600	4,125	0–40	15–330	160–3,960		0–650	450–950	850–1,350	
375	725	150	275	700	675	800	2,875	1,325	625	4,100	0–50	20–430	210–5,160		0–650	500–950	850–1,400	
350	750	200	325	725	675	825	2,875	1,325	650	4,075	5–60	25–530	260–6,360		50–700	500–950	850–1,400	
325	775	225	350	725	700	825	2,875	1,325	650	4,050	5–75	30–660	320–7,920	0	150–700	500–950	850–1,400	0
300	800	275	350	750	700	825	2,875	1,325	675	4,025	5–90	35–780	380–9,360	0–5	200–700	550–1,000	850–1,400	0–50
275	800	325	375	775	700	825	2,875	1,350	675	4,000	5–105	40–940	460–11,300	0–5	250–700	550–1,000	900–1,400	0–150
250	825	375	400	775	700	850	2,875	1,350	675	3,950	5–125	45–1,100	530–13,200	0–5	250–750	550–1,000	900–1,400	0–200
225	850	425	425	800	725	850	2,875	1,350	700	3,925	10–150	60–1,300	630–15,600	0–5	300–750	600–1,000	900–1,400	0–200
200	850	475	450	825	725	850	2,875	1,350	700	3,900	10–200	75–1,800	870–21,600	0–5	300–750	600–1,000	900–1,400	0–250
175	875	500	450	825	725	850	2,850	1,350	725	3,875	10–250	90–2,200	1,060–26,400	0–10	350–750	600–1,000	900–1,400	0–250
150	875	500	475	850	725	850	2,675	1,275	675	3,825	15–310	120–2,800	1,350–33,600	0–10	350–750	600–1,000	900–1,400	0–300
125	850	500	475	850	725	850	2,500	1,200	650	3,800	20–410	150–3,700	1,780–44,000	0–10	350–750	600–1,000	900–1,400	0–300
100	850	525	475	850	700	825	2,350	1,125	600	3,775	20–500	180–4,500	2,160–54,000	0–15	350–750	600–1,000	900–1,400	0–300
75	825	500	475	825	675	800	2,175	1,050	550	3,725	FALLOUT GOVERNS							
50	775	500	450	775	750	750	2,000	975	525	3,700								
25	700	450	375	725	600	725	1,850	900	475	3,650								
0	600	400	325	650	550	650	1,675	825	450	3,625								

FTR. ACFT 1

Figure 9.6c continued.

[1]Fighter Aircraft.

CASUALTY and DAMAGE Tables
Fighter Aircraft
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in l-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		600				400			0	125	3,750	3,750	8,575	6,450	5,600	5,225	3,100	2,350	3,750	2,000	675
1,300		700				550			900	900	3,750	3,750	8,575	6,450	5,600	5,225	3,125	2,375	3,750	2,175	750
1,250		800				650			1,125	1,125	3,750	3,750	8,600	6,475	5,625	5,250	3,150	2,400	3,750	2,375	825
1,200	0	875		0		750			1,300	1,300	3,750	3,750	8,600	6,475	5,625	5,250	3,175	2,425	3,750	2,500	925
1,150	250	925		250	0	800			1,425	1,425	3,750	3,750	8,600	6,475	5,625	5,275	3,175	2,450	3,750	2,550	975
1,100	425	975	0	425	250	875			2,125	2,125	3,700	3,700	8,600	6,500	5,650	5,275	3,200	2,475	3,700	2,525	1,025
1,050	550	1,025	150	550	400	950			2,150	2,150	3,700	3,700	8,625	6,500	5,650	5,300	3,225	2,500	3,650	2,500	1,125
1,000	625	1,075	350	625	525	1,000		0	2,175	2,175	3,650	3,650	8,625	6,500	5,675	5,300	3,225	2,500	3,600	2,475	1,225
950	700	1,125	475	700	600	1,050		300	2,175	2,175	3,600	3,600	8,625	6,500	5,675	5,300	3,250	2,525	3,550	2,425	1,375
900	1,350	1,350	550	775	675	1,075		425	2,150	2,150	3,500	3,500	8,625	6,525	5,675	5,325	3,250	2,550	3,475	2,400	1,450
850	1,575	1,575	650	825	750	1,125		525	2,125	2,125	3,400	3,400	8,650	6,525	5,675	5,325	3,275	2,550	3,400	2,350	1,475
800	1,625	1,625	700	875	800	1,150		600	2,100	2,100	3,300	3,300	8,650	6,525	5,700	5,325	3,300	2,575	3,325	2,300	1,450
775	1,625	1,625	725	900	825	1,175	0	625	2,100	2,100	3,250	3,250	8,650	6,525	5,700	5,325	3,300	2,575	3,300	2,275	1,450
750	1,625	1,625	750	925	850	1,200	125	650	2,075	2,075	3,250	3,250	8,650	6,525	5,700	5,350	3,300	2,600	3,250	2,250	1,425
725	1,650	1,650	775	925	850	1,200	225	675	2,050	2,050	3,200	3,200	8,650	6,525	5,700	5,350	3,300	2,600	3,225	2,225	1,425
700	1,650	1,650	800	950	875	1,225	300	700	2,050	2,050	3,150	3,150	8,650	6,525	5,700	5,350	3,325	2,600	3,175	2,175	1,400
675	1,650	1,650	825	975	900	1,250	350	725	2,025	2,025	3,100	3,100	8,650	6,550	5,725	5,350	3,325	2,625	3,125	2,150	1,375
650	1,650	1,650	850	1,000	925	1,250	400	750	2,000	2,000	3,050	3,050	8,650	6,550	5,725	5,350	3,325	2,625	3,075	2,125	1,350
625	1,650	1,650	850	1,000	925	1,250	425	775	1,975	1,975	3,000	3,000	8,675	6,550	5,725	5,350	3,325	2,625	3,050	2,100	1,375
600	1,650	1,650	875	1,025	950	1,275	475	800	1,950	1,950	3,000	3,000	8,675	6,550	5,725	5,375	3,325	2,625	3,000	2,100	1,375
575	1,650	1,650	900	1,025	975	1,275	500	825	1,925	1,925	2,950	2,950	8,675	6,550	5,725	5,375	3,350	2,650	2,950	2,075	1,400
550	1,650	1,650	900	1,050	975	1,300	525	825	1,900	1,900	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,900	2,050	1,400
525	1,650	1,650	925	1,050	1,000	1,300	550	850	1,875	1,875	2,900	2,900	8,675	6,550	5,725	5,375	3,350	2,650	2,850	2,025	1,425
500	1,650	1,650	950	1,075	1,000	1,325	575	850	1,850	1,850	2,850	2,850	8,675	6,575	5,725	5,375	3,350	2,650	2,825	2,025	1,425
475	1,650	1,650	950	1,075	1,025	1,325	600	875	1,825	1,825	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,775	2,000	1,425
450	1,650	1,650	975	1,100	1,025	1,325	625	875	1,800	1,800	2,800	2,800	8,675	6,575	5,725	5,375	3,350	2,650	2,750	1,975	1,425
425	1,650	1,650	975	1,100	1,050	1,350	625	900	1,775	1,775	2,750	2,750	8,675	6,575	5,725	5,375	3,350	2,675	2,725	1,950	1,450
400	1,650	1,650	975	1,125	1,050	1,350	650	900	1,750	1,750	2,700	2,700	8,675	6,575	5,725	5,375	3,350	2,675	2,700	1,950	1,450
375	1,650	1,650	1,000	1,125	1,050	1,350	650	925	1,725	1,725	2,700	2,700	8,675	6,575	5,800	5,375	3,350	2,675	2,650	1,925	1,450
350	1,650	1,650	1,000	1,125	1,075	1,375	675	925	1,700	1,700	2,650	2,650	8,675	6,575	5,800	5,375	3,375	2,675	2,625	1,900	1,475
325	1,650	1,650	1,025	1,150	1,075	1,375	675	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,600	1,900	1,475
300	1,650	1,650	1,025	1,150	1,075	1,375	700	950	1,675	1,675	2,600	2,600	8,675	6,575	5,800	5,375	3,375	2,675	2,575	1,875	1,475
275	1,650	1,650	1,025	1,150	1,100	1,375	700	950	1,650	1,650	2,550	2,550	8,675	6,575	5,800	5,375	3,375	2,675	2,550	1,875	1,475
250	1,650	1,650	1,025	1,150	1,100	1,400	725	975	1,625	1,625	2,550	2,550	8,600	6,500	5,675	5,350	3,300	2,650	2,525	1,850	1,475
225	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,625	1,625	2,500	2,500	8,000	6,225	5,425	5,100	3,200	2,575	2,500	1,850	1,500
200	1,625	1,625	1,050	1,175	1,100	1,400	725	975	1,600	1,600	2,500	2,500	7,750	5,950	5,175	4,875	3,100	2,500	2,475	1,825	1,500
175	1,600	1,600	1,050	1,175	1,100	1,400	750	975	1,600	1,600	2,450	2,450	7,500	5,675	4,925	4,650	2,975	2,400	2,450	1,825	1,500
150	1,575	1,575	1,050	1,175	1,125	1,400	750	975	1,575	1,575	2,450	2,450	7,100	5,400	4,700	4,425	2,875	2,325	2,425	1,800	1,500
125	1,550	1,550	1,050	1,175	1,125	1,400	750	975	1,550	1,550	2,400	2,400	6,750	5,100	4,450	4,200	2,775	2,250	2,400	1,800	1,500
100	1,525	1,525	1,050	1,175	1,125	1,400	750	1,000	1,550	1,550	2,400	2,400	6,400	4,825	4,200	3,975	2,675	2,175	2,375	1,800	1,500
75	1,475	1,475	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,350	2,350	6,050	4,550	3,950	3,725	2,550	2,100	2,350	1,800	1,500
50	1,425	1,425	1,075	1,175	1,125	1,400	750	1,000	1,525	1,525	2,300	2,300	5,600	4,275	3,700	3,500	2,450	2,025	2,350	1,800	1,500
25	1,350	1,350	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	5,300	4,025	3,475	3,300	2,350	1,950	2,325	1,800	1,500
0	1,300	1,300	1,075	1,175	1,125	1,400	750	1,000	1,500	1,500	2,300	2,300	4,850	3,750	3,250	3,100	2,250	1,875	2,300	1,800	1,500

HOB_{fs} = 111 m

Low HOB_{min} = 196 m

High HOB_{min} = 442 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 9 6d.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350							3,700	1,550		6,175			0–10				0–800	
1,300							3,700	1,600		6,150			0–10				0–850	
1,250							3,725	1,625		6,125			0–15				0–950	
1,200							3,750	1,675	0	6,100		0	0–15			0	0–1,000	
1,150							3,750	1,700	300	6,075		0–5	0–25			0–50	0–1,050	
1,100				0			3,775	1,750	450	6,050		0–5	0–30			0–350	0–1,100	
1,050				25			3,775	1,775	550	6,025		0–5	5–40			0–500	50–1,150	
1,000				175			3,800	1,800	650	6,000		0–5	5–60			0–600	350–1,200	
950				300			3,825	1,825	725	5,950		0–10	5–80			0–650	500–1,250	
900				425		0	3,825	1,850	775	5,925		0–10	5–110			0–750	550–1,300	
850	0			550		1,175	3,825	1,875	825	5,875	0	0–15	10–160		0	0–800	650–1,300	
800	150			650		1,225	3,850	1,900	875	5,850	0–5	0–20	10–230		0–50	0–850	700–1,350	
775	225			700		1,225	3,850	1,900	900	5,825	0–5	0–25	15–270		0–200	0–850	750–1,350	
750	275			725	0	1,225	3,850	1,925	925	5,800	0–5	0–30	15–330		0–300	0–900	750–1,400	
725	350			775	800	1,225	3,875	1,925	950	5,775	0–5	0–35	20–410		0–350	0–900	800–1,400	
700	400		0	800	875	1,225	3,875	1,925	950	5,750	0–5	5–45	20–500		0–400	50–950	800–1,400	
675	475		50	850	900	1,225	3,875	1,950	975	5,725	0–10	5–55	25–620		0–450	200–950	850–1,400	
650	600	0	125	875	900	1,225	3,875	1,950	975	5,700	0–10	5–65	35–780		0–500	300–950	850–1,450	
625	825	25	175	900	925	1,250	3,875	1,975	1,025	5,675	0–10	5–80	40–960		0–500	350–1,000	850–1,450	
600	900	50	250	925	925	1,250	3,875	1,975	1,025	5,650	0–15	5–100	50–1,200		0–550	400–1,000	900–1,450	
575	950	100	300	950	925	1,250	3,900	1,975	1,050	5,625	0–15	5–125	60–1,470		0–600	400–1,000	900–1,450	
550	975	150	350	975	950	1,250	3,900	1,975	1,050	5,600	0–20	10–155	75–1,860		0–600	450–1,050	900–1,450	
525	1,000	200	375	1,000	950	1,250	3,900	2,000	1,075	5,575	0–25	10–205	100–2,460		0–600	450–1,050	950–1,500	
500	1,025	225	425	1,000	950	1,250	3,900	2,000	1,075	5,550	5–30	10–250	120–3,000		50–650	500–1,050	950–1,500	
475	1,075	275	450	1,025	950	1,250	3,900	2,000	1,100	5,525	5–45	15–375	180–4,500	0	150–650	550–1,050	950–1,500	0
450	1,100	325	475	1,050	950	1,250	3,900	2,000	1,100	5,500	5–55	20–475	230–5,700	0–5	250–700	550–1,100	1,000–1,500	0–50
425	1,100	350	500	1,075	975	1,250	3,900	2,025	1,100	5,475	5–70	25–625	300–7,500	0–5	300–700	600–1,100	1,000–1,500	0–150
400	1,125	400	525	1,100	975	1,250	3,900	2,025	1,125	5,450	5–90	35–825	400–9,900	0–5	300–700	600–1,100	1,000–1,500	0–200
375	1,150	450	550	1,100	1,000	1,250	3,900	2,025	1,125	5,425	5–120	45–1,080	520–12,900	0–5	350–750	600–1,100	1,000–1,550	0–250
350	1,175	500	575	1,125	1,000	1,250	3,925	2,025	1,125	5,400	10–150	55–1,330	640–15,900	0–5	400–750	650–1,100	1,000–1,550	0–300
325	1,200	575	600	1,150	1,000	1,250	3,925	2,025	1,150	5,350	10–190	70–1,650	800–19,800	0–5	400–750	650–1,150	1,000–1,550	0–350
300	1,225	650	600	1,175	1,025	1,250	3,925	2,050	1,150	5,325	10–215	80–1,950	940–23,400	0–5	400–750	650–1,150	1,050–1,550	0–350
275	1,225	675	625	1,175	1,025	1,250	3,925	2,050	1,150	5,300	15–260	100–2,350	1,130–28,200	0–10	450–800	650–1,150	1,050–1,550	0–400
250	1,250	700	650	1,200	1,025	1,250	3,850	2,025	1,150	5,275	15–310	110–2,750	1,320–33,000	0–10	450–800	700–1,150	1,050–1,550	0–400
225	1,250	725	650	1,200	1,050	1,250	3,700	1,950	1,125	5,225	15–360	130–3,250	1,560–39,000	0–10	450–800	700–1,150	1,050–1,550	0–400
200	1,250	725	675	1,225	1,050	1,250	3,550	1,850	1,075	5,200	20–500	180–4,500	2,160–54,000	0–15	500–800	700–1,150	1,050–1,550	0–450
175	1,250	750	675	1,225	1,075	1,250	3,400	1,775	1,025	5,175	25–610	220–5,500	2,640–66,000	0–15	500–800	700–1,150	1,050–1,550	0–450
150	1,225	750	700	1,225	1,075	1,225	3,275	1,700	975	5,125	35–770	280–7,000	3,360–84,000	0–20	500–800	700–1,150	1,050–1,550	0–450
125	1,225	750	700	1,200	1,050	1,225	3,125	1,600	950	5,100	45–1,020	370–9,250	4,440–111,000	5–25	500–800	700–1,150	1,050–1,550	0–450
100	1,200	725	675	1,175	1,025	1,200	2,975	1,525	900	5,050	FALLOUT GOVERNS							
75	1,150	725	650	1,150	975	1,150	2,825	1,450	850	5,025								
50	1,075	675	600	1,100	925	1,125	2,675	1,375	800	5,000								
25	975	650	525	1,025	875	1,075	2,525	1,275	750	4,950								
0	825	550	450	950	800	975	2,375	1,200	725	4,925								

Figure 9.6d continued.

FTR ACFT 1

[1]Fighter Aircraft.

CASUALTY and DAMAGE Tables
Fighter Aircraft
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in fromehouses		Radius of sofety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Deloyed	Prompt	Delayed	Prompt	Deloyed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		975	0	0		800			2,650	2,650	4,600	4,600	11,325	8,900	7,575	7,100	4,475	3,400	4,625	3,150	1,350
1,300		1,025	125	125	0	875			2,700	2,700	4,550	4,550	11,325	8,900	7,600	7,100	4,475	3,425	4,575	3,125	1,475
1,250		1,100	250	375	200	950			2,700	2,700	4,500	4,500	11,350	8,900	7,600	7,125	4,500	3,425	4,525	3,100	1,600
1,200		1,150	375	500	400	1,000			2,700	2,700	4,450	4,450	11,350	8,925	7,600	7,125	4,500	3,450	4,475	3,075	1,725
1,150	0	1,200	475	625	525	1,075		0	2,675	2,675	4,400	4,400	11,350	8,925	7,625	7,125	4,525	3,475	4,400	3,025	1,825
1,100	1,950	1,950	550	700	625	1,125		175	2,650	2,650	4,300	4,300	11,350	8,925	7,625	7,125	4,525	3,475	4,325	2,975	1,875
1,050	2,100	2,100	625	775	700	1,175		375	2,600	2,600	4,250	4,250	11,350	8,950	7,625	7,150	4,550	3,500	4,250	2,925	1,850
1,000	2,150	2,150	675	825	775	1,200		500	2,600	2,600	4,150	4,150	11,350	8,950	7,625	7,150	4,550	3,525	4,175	2,875	1,825
950	2,175	2,175	725	900	825	1,250		575	2,575	2,575	4,050	4,050	11,350	8,950	7,650	7,150	4,575	3,525	4,100	2,825	1,800
900	2,175	2,175	775	950	900	1,275	0	650	2,525	2,525	4,000	4,000	11,375	8,950	7,650	7,175	4,575	3,550	4,025	2,775	1,775
850	2,175	2,175	800	1,000	950	1,325	175	725	2,475	2,475	3,900	3,900	11,375	8,950	7,650	7,175	4,575	3,550	3,950	2,725	1,725
800	2,175	2,175	825	1,025	975	1,350	350	775	2,450	2,450	3,800	3,800	11,375	8,950	7,650	7,175	4,600	3,575	3,850	2,675	1,675
775	2,175	2,175	825	1,050	1,000	1,350	400	800	2,425	2,425	3,800	3,800	11,375	8,975	7,650	7,175	4,600	3,575	3,800	2,650	1,650
750	2,175	2,175	825	1,075	1,025	1,375	450	825	2,400	2,400	3,750	3,750	11,375	8,975	7,675	7,175	4,600	3,575	3,775	2,625	1,625
725	2,175	2,175	850	1,075	1,050	1,400	475	850	2,375	2,375	3,700	3,700	11,375	8,975	7,675	7,175	4,600	3,575	3,725	2,600	1,600
700	2,175	2,175	850	1,100	1,050	1,400	525	875	2,350	2,350	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,675	2,600	1,575
675	2,175	2,175	850	1,100	1,075	1,425	550	875	2,325	2,325	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,625	2,575	1,500
650	2,175	2,175	850	1,125	1,075	1,425	575	900	2,300	2,300	3,600	3,600	11,400	8,975	7,675	7,200	4,625	3,600	3,575	2,550	1,525
625	2,175	2,175	850	1,150	1,100	1,450	600	925	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,550	2,525	1,525
600	2,175	2,175	850	1,150	1,125	1,450	625	950	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,525	2,525	1,550
575	2,175	2,175	875	1,175	1,125	1,450	650	950	2,250	2,250	3,500	3,500	11,400	9,000	7,675	7,200	4,625	3,625	3,475	2,500	1,550
550	2,175	2,175	900	1,175	1,150	1,475	675	975	2,225	2,225	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,450	2,475	1,550
525	2,175	2,175	900	1,200	1,150	1,475	700	975	2,200	2,200	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,425	2,475	1,575
500	2,175	2,175	925	1,200	1,150	1,475	725	1,000	2,175	2,175	3,400	3,400	11,400	9,000	7,675	7,200	4,650	3,625	3,375	2,450	1,575
475	2,175	2,175	925	1,225	1,175	1,500	725	1,000	2,175	2,175	3,350	3,350	11,400	9,000	7,675	7,200	4,650	3,625	3,350	2,425	1,600
450	2,175	2,175	950	1,225	1,175	1,500	750	1,025	2,150	2,150	3,350	3,350	11,400	9,000	7,675	7,225	4,650	3,625	3,325	2,425	1,600
425	2,175	2,175	950	1,225	1,200	1,500	750	1,025	2,125	2,125	3,300	3,300	11,400	9,000	7,675	7,225	4,650	3,625	3,300	2,400	1,600
400	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,100	2,100	3,250	3,250	11,400	9,000	7,675	7,225	4,650	3,625	3,275	2,375	1,600
375	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,075	2,075	3,250	3,250	11,400	9,000	7,700	7,225	4,650	3,625	3,250	2,375	1,625
350	2,175	2,175	975	1,250	1,225	1,525	800	1,050	2,075	2,075	3,200	3,200	11,400	9,000	7,700	7,225	4,650	3,650	3,225	2,350	1,625
325	2,175	2,175	1,000	1,250	1,225	1,525	800	1,075	2,050	2,050	3,200	3,200	11,200	8,650	7,525	7,050	4,550	3,550	3,200	2,350	1,625
300	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,050	2,050	3,150	3,150	10,850	8,400	7,275	6,825	4,400	3,450	3,150	2,325	1,625
275	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,025	2,025	3,150	3,150	10,400	8,125	7,025	6,600	4,275	3,350	3,125	2,325	1,625
250	2,125	2,125	1,025	1,275	1,250	1,550	825	1,075	2,025	2,025	3,100	3,100	10,100	7,850	6,775	6,375	4,125	3,250	3,125	2,300	1,650
225	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,100	3,100	9,800	7,550	6,550	6,150	3,975	3,125	3,100	2,300	1,650
200	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,050	3,050	9,400	7,250	6,300	5,925	3,825	3,025	3,075	2,275	1,650
175	2,075	2,075	1,025	1,300	1,250	1,550	850	1,100	1,975	1,975	3,050	3,050	9,050	6,950	6,050	5,700	3,675	2,900	3,050	2,275	1,650
150	2,025	2,025	1,025	1,300	1,250	1,550	850	1,100	1,950	1,950	3,000	3,000	8,700	6,650	5,800	5,475	3,525	2,800	3,025	2,250	1,650
125	2,000	2,000	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	3,000	3,000	8,350	6,375	5,550	5,225	3,375	2,700	3,000	2,250	1,650
100	1,950	1,950	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	2,950	2,950	7,975	6,100	5,300	5,000	3,250	2,600	2,975	2,225	1,650
75	1,900	1,900	1,050	1,300	1,275	1,575	875	1,100	1,900	1,900	2,950	2,950	7,600	5,825	5,050	4,750	3,125	2,500	2,950	2,225	1,650
50	1,850	1,850	1,050	1,300	1,275	1,575	875	1,125	1,900	1,900	2,900	2,900	7,250	5,550	4,825	4,525	2,950	2,375	2,950	2,225	1,650
25	1,775	1,775	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,825	5,275	4,600	4,325	2,825	2,250	2,925	2,200	1,650
0	1,700	1,700	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,400	5,000	4,350	4,125	2,700	2,150	2,900	2,200	1,650

HOB_{fs} = 140 m

Low HOB_{min} = 246 m

High HOB_{min} = 557 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 9.6e.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
							2d-degree burns				Induced Contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
HOB	Mod dam wheeled vehs	Mod Dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	Exposed skin	2-layer summer uniform	4-layer winter uniform	1 PSI over-pressure	Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350				0			5,500	2,425	725	7,600			0–15				0–950	
1,300				100			5,525	2,450	825	7,575		0	0–20			0	0–1,050	
1,250				250			5,525	2,475	900	7,550		0–5	0–25			0–50	0–1,100	
1,200				400		0	5,550	2,500	950	7,500		0–5	0–30			0–400	0–1,150	
1,150				525		1,550	5,550	2,525	1,025	7,475		0–5	5–45			0–550	50–1,200	
1,100	0			650		1,650	5,550	2,550	1,075	7,425		0–5	5–60			0–600	350–1,250	
1,050	50			775		1,675	5,575	2,575	1,125	7,400		0–10	5–80			0–700	500–1,300	
1,000	200			875		1,675	5,575	2,600	1,175	7,350		0–10	5–120			0–800	600–1,350	
950	350			950	0	1,675	5,600	2,625	1,200	7,325	0	0–15	10–160		0	0–850	650–1,400	
900	475		0	1,050	1,175	1,675	5,600	2,625	1,250	7,275	0–5	0–20	10–220		0–50	0–900	750–1,400	
850	650		75	1,125	1,200	1,675	5,600	2,650	1,275	7,225	0–5	0–30	15–320		0–350	0–950	800–1,450	
800	950	0	200	1,175	1,225	1,675	5,625	2,650	1,300	7,175	0–5	5–40	20–450		0–450	50–1,000	850–1,450	
775	1,150	25	275	1,200	1,250	1,675	5,625	2,675	1,325	7,150	0–5	5–45	25–530		0–500	200–1,000	850–1,500	
750	1,200	75	325	1,225	1,250	1,675	5,625	2,675	1,350	7,125	0–10	5–55	30–660		0–550	300–1,050	900–1,500	
725	1,250	125	400	1,250	1,250	1,675	5,625	2,675	1,350	7,100	0–10	5–70	35–810		0–550	350–1,050	900–1,500	
700	1,300	175	450	1,275	1,275	1,675	5,625	2,700	1,375	7,075	0–10	5–90	40–990		0–600	400–1,050	950–1,500	
675	1,325	225	475	1,300	1,275	1,675	5,625	2,700	1,375	7,050	0–15	5–110	50–1,230		0–600	450–1,100	950–1,550	
650	1,350	275	525	1,325	1,275	1,675	5,625	2,700	1,400	7,025	0–15	10–130	65–1,560		0–650	500–1,100	950–1,550	
625	1,375	325	575	1,325	1,275	1,675	5,625	2,700	1,400	7,000	0–20	10–160	80–1,920		0–700	500–1,100	1,000–1,550	
600	1,400	350	600	1,350	1,275	1,675	5,650	2,725	1,425	6,975	0–25	10–200	100–2,400		0–700	550–1,100	1,000–1,550	
575	1,425	400	625	1,375	1,275	1,675	5,650	2,725	1,425	6,950	0–30	10–245	120–2,940		0–700	600–1,150	1,000–1,550	
550	1,450	450	650	1,400	1,300	1,675	5,650	2,725	1,425	6,925	5–35	15–310	150–3,720		50–750	600–1,150	1,050–1,600	
525	1,475	500	675	1,425	1,300	1,675	5,650	2,725	1,450	6,875	5–50	20–410	200–4,920	0	100–750	650–1,150	1,050–1,600	0
500	1,500	550	700	1,450	1,300	1,675	5,650	2,725	1,450	6,850	5–55	20–500	240–6,000	0–5	250–800	650–1,150	1,050–1,600	0–50
475	1,525	600	725	1,450	1,300	1,675	5,650	2,750	1,450	6,825	5–85	30–750	360–9,000	0–5	300–800	650–1,150	1,050–1,600	0–150
450	1,550	650	750	1,475	1,300	1,675	5,650	2,750	1,475	6,800	5–105	40–950	460–11,400	0–5	350–800	700–1,150	1,100–1,600	0–250
425	1,575	700	775	1,500	1,300	1,675	5,650	2,750	1,475	6,775	10–140	50–1,250	600–15,000	0–5	350–800	700–1,200	1,100–1,600	0–300
400	1,600	775	800	1,525	1,325	1,675	5,650	2,750	1,475	6,750	10–190	70–1,650	800–19,800	0–10	400–850	700–1,200	1,100–1,650	0–300
375	1,600	850	800	1,550	1,325	1,650	5,650	2,750	1,500	6,700	10–240	90–2,150	1,040–25,800	0–10	450–850	750–1,200	1,100–1,650	0–350
350	1,625	900	825	1,550	1,325	1,650	5,650	2,750	1,500	6,675	15–300	110–2,650	1,280–31,800	0–10	450–850	750–1,250	1,100–1,650	0–400
325	1,650	925	850	1,575	1,325	1,650	5,500	2,700	1,500	6,650	15–370	140–3,300	1,600–39,600	0–10	450–850	750–1,250	1,150–1,650	0–400
300	1,650	950	850	1,575	1,350	1,650	5,325	2,625	1,450	6,625	20–430	160–3,900	1,880–46,800	0–15	500–850	750–1,250	1,150–1,650	0–400
275	1,650	950	875	1,600	1,350	1,650	5,150	2,525	1,400	6,575	25–520	190–4,700	2,260–56,400	0–15	500–900	800–1,250	1,150–1,650	0–450
250	1,650	950	900	1,600	1,350	1,650	4,950	2,450	1,375	6,550	25–610	220–5,500	2,640–66,000	0–15	500–900	800–1,250	1,150–1,650	0–450
225	1,650	975	900	1,600	1,375	1,650	4,775	2,350	1,325	6,525	30–720	260–6,500	3,120–78,000	0–20	550–900	800–1,250	1,150–1,650	0–450
200	1,625	975	925	1,600	1,375	1,650	4,600	2,275	1,275	6,475	40–990	360–9,000	4,320–108,000	0–25	550–900	800–1,250	1,150–1,650	0–500
175	1,625	975	925	1,600	1,375	1,625	4,400	2,175	1,225	6,450	50–1,210	440–11,000	5,280–132,000	0–30	550–900	800–1,250	1,150–1,650	0–500
150	1,600	975	925	1,575	1,350	1,600	4,225	2,100	1,175	6,400	65–1,540	560–14,000	6,720–168,000	5–40	550–900	800–1,250	1,150–1,650	50–500
125	1,575	975	900	1,550	1,325	1,575	4,025	2,025	1,150	6,375								
100	1,525	950	850	1,500	1,300	1,525	3,850	1,925	1,100	6,350								
75	1,450	925	825	1,475	1,250	1,475	3,675	1,850	1,050	6,300								
50	1,350	875	750	1,400	1,175	1,425	3,475	1,750	1,000	6,275								
25	1,225	825	675	1,325	1,100	1,375	3,300	1,675	950	6,225								
0	1,100	750	600	1,250	1,075	1,325	3,100	1,575	925	6,200								

FALLOUT GOVERNS

Figure 9.6e continued.

FTR ACFT 1

[1]Fighter Aircraft.

CASUALTY and DAMAGE Tables
Fighter Aircraft

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,700		750	0	0		400			3,350	3,350	5,850	5,850	15,200	11,775	10,350	9,775	6,275	4,750	5,850	4,000	1,700
1,600	0	950	275	275		700			3,375	3,375	5,750	5,750	15,200	11,800	10,375	9,800	6,300	4,800	5,725	3,925	1,925
1,500	175	1,100	500	500	0	900			3,375	3,375	5,600	5,600	15,225	11,800	10,400	9,800	6,325	4,825	5,600	3,850	2,200
1,400	2,450	2,450	675	675	200	1,050			3,350	3,350	5,450	5,450	15,225	11,825	10,400	9,825	6,350	4,850	5,475	3,775	2,350
1,300	2,800	2,800	825	825	550	1,175		0	3,300	3,300	5,300	5,300	15,250	11,825	10,400	9,825	6,375	4,875	5,325	3,675	2,325
1,200	2,875	2,875	900	900	750	1,275		325	3,250	3,250	5,150	5,150	15,250	11,850	10,425	9,850	6,375	4,900	5,175	3,575	2,275
1,100	2,875	2,875	975	975	900	1,350		575	3,175	3,175	5,000	5,000	15,250	11,850	10,425	9,850	6,400	4,925	5,025	3,450	2,200
1,050	2,875	2,875	1,025	1,025	950	1,400		675	3,150	3,150	4,900	4,900	15,275	11,850	10,450	9,850	6,400	4,950	4,925	3,400	2,150
1,000	2,875	2,875	1,025	1,025	1,000	1,425	0	750	3,100	3,100	4,850	4,850	15,275	11,850	10,450	9,850	6,425	4,950	4,850	3,350	2,100
950	2,875	2,875	1,050	1,100	1,050	1,475	250	800	3,050	3,050	4,750	4,750	15,275	11,850	10,450	9,850	6,425	4,975	4,750	3,325	2,050
900	2,875	2,875	1,075	1,125	1,100	1,500	400	850	3,000	3,000	4,700	4,700	15,275	11,850	10,450	9,875	6,425	4,975	4,650	3,275	2,000
850	2,875	2,875	1,075	1,175	1,150	1,525	500	900	2,950	2,950	4,600	4,600	15,275	11,850	10,450	9,875	6,425	4,975	4,550	3,250	1,925
800	2,875	2,875	1,050	1,200	1,175	1,550	575	950	2,900	2,900	4,550	4,550	15,275	11,875	10,450	9,875	6,450	5,000	4,475	3,200	1,875
750	2,875	2,875	1,050	1,225	1,200	1,575	625	1,000	2,875	2,875	4,450	4,450	15,275	11,875	10,475	9,875	6,450	5,000	4,425	3,175	1,825
700	2,875	2,875	1,050	1,275	1,225	1,600	700	1,025	2,825	2,825	4,400	4,400	15,275	11,875	10,475	9,875	6,450	5,000	4,350	3,125	1,775
650	2,875	2,875	1,025	1,300	1,275	1,625	750	1,075	2,775	2,775	4,350	4,350	15,300	11,875	10,475	9,900	6,475	5,000	4,300	3,100	1,725
600	2,875	2,875	1,025	1,325	1,300	1,650	775	1,100	2,750	2,750	4,250	4,250	15,300	11,875	10,475	9,900	6,475	5,025	4,225	3,050	1,700
550	2,875	2,875	1,025	1,325	1,300	1,650	825	1,125	2,700	2,700	4,200	4,200	15,300	11,875	10,475	9,900	6,475	5,025	4,175	3,025	1,675
500	2,875	2,875	1,050	1,350	1,325	1,675	850	1,150	2,650	2,650	4,150	4,150	15,300	11,875	10,475	9,900	6,475	5,025	4,125	3,000	1,700
450	2,875	2,875	1,050	1,375	1,350	1,700	875	1,150	2,625	2,625	4,100	4,100	15,250	11,800	10,300	9,750	6,450	5,025	4,050	2,975	1,700
400	2,850	2,850	1,075	1,375	1,375	1,700	900	1,175	2,600	2,600	4,050	4,050	14,450	11,200	9,825	9,250	6,125	4,800	4,000	2,950	1,725
300	2,800	2,800	1,100	1,425	1,400	1,725	925	1,200	2,500	2,500	3,950	3,950	12,850	9,950	8,750	8,300	5,500	4,325	3,900	2,900	1,750
200	2,700	2,700	1,125	1,425	1,400	1,750	950	1,225	2,450	2,450	3,850	3,850	11,400	8,850	7,700	7,400	4,850	3,850	3,825	2,850	1,750
100	2,525	2,525	1,150	1,450	1,425	1,750	975	1,250	2,400	2,400	3,800	3,800	9,850	7,700	6,700	6,450	4,225	3,375	3,725	2,800	1,750
0	2,250	2,250	1,225	1,450	1,425	1,750	975	1,250	2,350	2,350	3,700	3,700	8,250	6,700	5,700	5,500	3,650	2,900	3,650	2,775	1,775

HOB_{fs} = 327m
Low HOB_{min} = 310m
High HOB_{min} = 702
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 9.6f.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,700				0			7,300	3,250	1,225	9,575			0–5				0–600	
1,600				250		0	7,325	3,300	1,350	9,525			0–10				0–850	
1,500				575		2,000	7,350	3,350	1,475	9,450			0–10				0–1,000	
1,400	0			825		2,250	7,375	3,375	1,575	9,375		0	0–20			0	0–1,150	
1,300	150			1,075	0	2,275	7,375	3,425	1,650	9,300		0–5	0–35			0–400	0–1,250	
1,200	450			1,275	1,625	2,275	7,400	3,450	1,725	9,225		0–5	5–60			0–650	400–1,350	
1,100	750		0	1,425	1,650	2,250	7,425	3,500	1,800	9,125		0–10	5–120			0–800	600–1,450	
1,050	950		150	1,500	1,650	2,250	7,425	3,500	1,825	9,075	0	0–15	10–160		0	0–850	700–1,500	
1,000	1,350	0	300	1,550	1,675	2,250	7,425	3,525	1,850	9,025	0–5	0–20	10–230		0–50	0–950	800–1,500	
950	1,575	100	425	1,600	1,675	2,250	7,450	3,525	1,875	8,975	0–5	0–30	15–320		0–300	0–1,000	850–1,550	
900	1,675	200	550	1,650	1,700	2,250	7,450	3,550	1,900	8,925	0–5	0–40	20–440		0–450	0–1,050	900–1,600	
850	1,750	300	650	1,700	1,725	2,225	7,450	3,550	1,925	8,875	0–10	5–55	25–630		0–550	50–1,050	950–1,600	
800	1,800	400	725	1,750	1,725	2,225	7,450	3,575	1,950	8,825	0–10	5–75	40–890		0–600	300–1,100	1,000–1,650	
750	1,875	475	800	1,800	1,725	2,225	7,450	3,575	1,950	8,775	0–15	5–110	55–1,320		0–700	400–1,150	1,050–1,650	
700	1,925	575	850	1,850	1,725	2,225	7,475	3,600	1,975	8,725	0–20	10–165	80–1,980		0–750	500–1,200	1,050–1,700	
650	1,975	675	900	1,875	1,750	2,225	7,475	3,600	2,000	8,675	0–30	15–260	125–3,120		0–800	550–1,200	1,100–1,700	
600	2,025	775	950	1,925	1,750	2,200	7,475	3,600	2,025	8,600	5–45	20–400	200–4,800	0	50–800	600–1,250	1,100–1,700	0
550	2,050	900	1,000	1,975	1,775	2,200	7,475	3,625	2,025	8,550	5–70	25–620	300–7,440	0–5	250–850	650–1,250	1,150–1,750	0–50
500	2,100	1,050	1,050	2,000	1,775	2,200	7,475	3,625	2,050	8,475	5–110	40–1,000	480–12,000	0–5	350–900	700–1,300	1,150–1,750	0–250
450	2,150	1,150	1,075	2,050	1,800	2,200	7,450	3,625	2,075	8,425	10–210	80–1,900	920–22,800	0–5	400–900	750–1,300	1,200–1,750	0–350
400	2,175	1,225	1,125	2,075	1,800	2,200	7,075	3,475	2,000	8,350	15–370	135–3,300	1,590–39,600	0–10	450–950	750–1,300	1,200–1,800	0–400
300	2,175	1,275	1,175	2,125	1,825	2,075	6,300	3,125	1,800	8,225	FALLOUT GOVERNS							
200	2,125	1,300	1,200	2,100	1,775	2,050	5,550	2,725	1,600	8,100								
100	1,950	1,225	1,100	1,950	1,700	1,925	4,775	2,450	1,425	7,950								
0	1,450	975	800	1,650	1,350	1,725	4,025	2,100	1,225	7,800								

Figure 9.6f continued.

FTR
ACFT 1

[1]Fighter Aircraft.

CASUALTY and DAMAGE Tables
Fighter Aircraft
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200		0	275	275					4,650	4,650	7,800	7,800	21,700	17,700	15,400	14,200	9,100	7,100	7,800	5,350	2,550
2,100		400	525	525		0			4,650	4,650	7,800	7,650	21,700	17,700	15,500	14,300	9,200	7,100	7,700	5,275	2,825
2,000	0	750	750	750		200			4,650	4,650	7,550	7,550	21,700	17,700	15,500	14,300	8,200	7,100	7,575	5,200	3,050
1,900	3,550	3,550	925	925		650			4,600	4,600	7,400	7,400	21,700	17,700	15,500	14,300	9,200	7,200	7,425	5,125	3,175
1,800	4,000	4,000	1,075	1,075		900			4,500	4,500	7,250	7,250	21,700	17,700	15,500	14,300	9,200	7,200	7,275	5,025	3,175
1,700	4,100	4,100	1,175	1,175	0	1,075			4,450	4,450	7,100	7,100	21,700	17,700	15,500	14,300	9,200	7,200	7,150	4,925	3,125
1,600	4,150	4,150	1,250	1,250	400	1,225			4,350	4,350	6,900	6,900	21,700	17,700	15,500	14,300	9,300	7,200	6,975	4,825	3,075
1,500	4,150	4,150	1,325	1,325	675	1,325		0	4,250	4,250	6,750	6,750	21,700	17,700	15,500	14,300	9,300	7,200	6,825	4,700	3,000
1,400	4,150	4,150	1,400	1,400	875	1,450		325	4,150	4,150	6,600	6,600	21,700	17,700	15,500	14,300	9,300	7,300	6,650	4,600	2,900
1,300	4,150	4,150	1,425	1,425	1,000	1,525	0	625	4,100	4,100	6,450	6,450	21,700	17,700	15,500	14,300	9,300	7,300	6,450	4,500	2,800
1,200	4,150	4,150	1,450	1,450	1,125	1,600	275	800	4,000	4,000	6,300	6,300	21,800	17,700	15,600	14,400	9,300	7,300	6,275	4,425	2,675
1,100	4,150	4,150	1,450	1,450	1,225	1,675	400	925	3,900	3,900	6,200	6,200	21,800	17,800	15,600	14,400	9,300	7,300	6,100	4,350	2,550
1,050	4,150	4,150	1,425	1,425	1,275	1,725	475	1,000	3,850	3,850	6,100	6,100	21,800	17,800	15,600	14,400	9,300	7,300	6,050	4,325	2,500
1,000	4,150	4,150	1,425	1,425	1,300	1,750	575	1,050	3,850	3,850	6,050	6,050	21,800	17,800	15,600	14,400	9,300	7,300	5,975	4,275	2,450
950	4,150	4,150	1,400	1,400	1,350	1,775	650	1,075	3,800	3,800	6,000	6,000	21,800	17,800	15,600	14,400	9,400	7,300	5,900	4,250	2,400
900	4,150	4,150	1,400	1,400	1,375	1,800	725	1,125	3,750	3,750	5,900	5,900	21,800	17,800	15,600	14,400	9,400	7,300	5,850	4,200	2,375
850	4,150	4,150	1,400	1,400	1,400	1,825	775	1,175	3,700	3,700	5,850	5,850	21,800	17,800	15,600	14,400	9,400	7,400	5,775	4,175	2,325
800	4,150	4,150	1,375	1,450	1,450	1,850	825	1,200	3,700	3,700	5,800	5,800	21,800	17,800	15,600	14,400	9,400	7,400	5,725	4,150	2,300
750	4,150	4,150	1,375	1,475	1,475	1,850	875	1,225	3,650	3,650	5,750	5,750	21,800	17,800	15,600	14,400	9,400	7,400	5,675	4,125	2,275
700	4,150	4,150	1,350	1,500	1,500	1,875	925	1,250	3,600	3,600	5,650	5,650	21,800	17,800	15,600	14,400	9,400	7,400	5,600	4,075	2,275
650	4,150	4,150	1,350	1,525	1,600	1,900	950	1,300	3,550	3,550	5,600	5,600	21,800	17,800	15,400	14,300	9,400	7,300	5,550	4,050	2,250
600	4,150	4,150	1,350	1,550	1,700	1,925	975	1,325	3,550	3,550	5,550	5,550	20,800	17,200	15,000	13,900	9,100	7,100	5,500	4,025	2,250
550	4,125	4,125	1,350	1,550	1,750	1,925	1,025	1,350	3,500	3,500	5,500	5,500	19,400	16,500	14,400	13,400	8,700	6,800	5,450	4,000	2,250
500	4,100	4,100	1,350	1,575	1,800	1,950	1,050	1,350	3,450	3,450	5,450	5,450	18,500	15,900	13,900	12,800	8,400	6,600	5,400	3,975	2,250
400	4,025	4,025	1,400	1,600	1,825	1,975	1,075	1,375	3,400	3,400	5,300	5,300	17,600	14,700	12,800	11,800	7,800	6,100	5,300	3,925	2,275
300	3,925	3,925	1,450	1,625	1,850	2,000	1,125	1,400	3,350	3,350	5,200	5,200	16,000	13,500	11,700	10,800	7,100	5,600	5,200	3,875	2,300
200	3,775	3,775	1,500	1,650	1,825	2,000	1,125	1,425	3,300	3,300	5,100	5,100	14,400	12,200	10,600	9,800	6,500	5,200	5,125	3,825	2,325
100	3,550	3,550	1,575	1,650	1,700	2,000	1,150	1,450	3,250	3,250	5,000	5,000	13,000	11,000	9,500	8,800	5,900	4,700	5,050	3,800	2,375
0	3,250	3,250	1,675	1,675	1,650	2,000	1,150	1,450	3,250	3,250	4,450	4,450	11,500	9,700	8,500	7,900	5,300	4,200	4,975	3,775	2,400

HOB_{fs} = 445m
Low HOB_{min} = 420m
High HOB_{min} = 953m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 9.6g.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled veh	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity of GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200				275		0	10,475	4,925	2,200	12,925								
2,100				625		3,325	10,500	4,975	2,300	12,875								
2,000				925		3,350	10,500	5,000	2,375	12,800			0				0	
1,900	0			1,200		3,350	10,525	5,050	2,450	12,725			0–5				0–450	
1,800	75			1,450	0	3,325	10,550	5,075	2,525	12,650			0–5				0–750	
1,700	425			1,675	2,150	3,300	10,575	5,125	2,600	12,575			0–10				0–1,000	
1,600	725			1,875	2,225	3,275	10,575	5,150	2,675	12,475		0	0–15			0	0–1,150	
1,500	1,050		0	2,050	2,250	3,250	10,600	5,175	2,725	12,400		0–5	0–25			0–50	0–1,250	
1,400	1,525	0	300	2,200	2,275	3,200	10,600	5,200	2,775	12,300		0–5	5–50			0–550	50–1,400	
1,300	2,250	125	600	2,325	2,300	3,175	10,625	5,225	2,825	12,200		0–10	5–85			0–750	550–1,500	
1,200	2,450	325	825	2,400	2,325	3,150	10,625	5,250	2,875	12,100	0	0–15	10–150		0	0–900	750–1,550	
1,100	2,600	525	1,025	2,525	2,350	3,125	10,650	5,275	2,900	12,000	0–5	0–25	15–290		0–350	0–1,050	900–1,650	
1,050	2,650	625	1,100	2,575	2,350	3,125	10,650	5,275	2,925	11,950	0–5	0–35	20–390		0–500	0–1,100	950–1,650	
1,000	2,700	750	1,175	2,600	2,350	3,100	10,650	5,300	2,950	11,900	0–10	5–50	25–570		0–600	50–1,150	1,000–1,700	
950	2,775	850	1,225	2,650	2,375	3,075	10,650	5,300	2,950	11,825	0–10	5–65	35–780		0–650	300–1,200	1,050–1,750	
900	2,825	950	1,275	2,700	2,375	3,050	10,650	5,325	2,975	11,775	0–10	5–90	45–1,080		0–750	450–1,200	1,100–1,750	
850	2,875	1,050	1,350	2,750	2,375	3,050	10,675	5,325	3,000	11,725	0–15	10–130	65–1,560		0–800	550–1,250	1,150–1,800	
800	2,925	1,150	1,400	2,800	2,400	3,025	10,675	5,325	3,000	11,675	0–25	10–185	90–2,220		0–850	600–1,300	1,150–1,800	
750	2,975	1,275	1,450	2,825	2,400	3,000	10,675	5,350	3,025	11,600	0–35	15–275	135–3,300	0	0–900	700–1,300	1,200–1,800	0
700	3,025	1,450	1,500	2,875	2,400	2,975	10,675	5,350	3,025	11,550	5–50	20–420	200–4,950	0–5	50–950	750–1,350	1,250–1,850	0–50
650	3,050	1,600	1,525	2,925	2,425	2,975	10,625	5,350	3,100	11,475	5–75	30–650	320–7,800	0–5	300–950	800–1,350	1,250–1,850	0–300
600	3,100	1,700	1,575	2,950	2,450	2,950	10,250	5,175	3,000	11,425	5–110	40–1,000	480–12,000	0–5	400–1,000	800–1,400	1,300–1,900	0–400
550	3,125	1,750	1,625	3,000	2,450	2,925	9,875	5,000	2,900	11,350	10–175	65–1,550	750–18,600	0–5	450–1,050	850–1,400	1,300–1,900	0–450
500	3,150	1,800	1,650	3,025	2,450	2,900	9,475	4,825	2,800	11,300	15–280	100–2,500	1,200–30,000	0–10	500–1,050	900–1,450	1,350–1,900	0–500
400	3,125	1,825	1,725	3,075	2,475	2,850	8,725	4,450	2,575	11,150	FALLOUT COVERNS							
300	3,075	1,850	1,750	3,050	2,425	2,825	7,950	4,100	2,375	11,025								
200	2,975	1,825	1,675	2,925	2,375	2,750	7,200	3,750	2,175	10,875								
100	2,650	1,700	1,475	2,725	2,200	2,625	6,425	3,375	1,975	10,750								
0	2,100	1,400	1,150	2,400	1,900	2,500	5,675	3,025	1,775	10,600								

Figure 9.6g continued.

FTR
ACFT 1

[1]Fighter Aircraft.

CASUALTY and DAMAGE Tables
Fighter Aircraft
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	*Exposed personnel*		*Protected personnel*		*Personnel in APC's*		*Personnel in 1-m earth shelters*		*Personnel in multistory apt bldgs*		*Personnel in framehouses*		*Radius of safety*								
													Unwarned, exposed			*Warned, exposed*			*Warned, protected*		
	Prompt	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Prompt*	*Delayed*	*Neg*	*Mod*	*Emer*	*Neg*	*Mod*	*Emer*	*Neg*	*Mod*	*Emer*
2,200	5,350	5,350	1,425	1,425		375			5,700	5,700	9,150	9,150	28,300	23,700	20,800	18,900	12,500	9,800	9,075	6,275	4,000
2,100	5,450	5,450	1,525	1,525		750			5,650	5,650	9,000	9,000	28,300	23,700	20,800	18,900	12,500	9,800	8,925	6,150	3,925
2,000	5,475	5,475	1,600	1,600		1,000			5,600	5,600	8,800	8,800	28,300	23,700	20,800	18,900	12,500	9,800	8,775	6,050	3,850
1,900	5,475	5,475	1,675	1,675	0	1,175			5,500	5,500	8,600	8,600	28,300	23,700	20,800	18,900	12,600	9,800	8,600	5,925	3,775
1,800	5,450	5,450	1,725	1,725	375	1,325			5,400	5,400	8,500	8,500	28,400	23,700	20,800	18,900	12,600	9,800	8,450	5,825	3,700
1,700	5,450	5,450	1,775	1,775	700	1,450	0	0	5,350	5,350	8,350	8,350	28,400	23,700	20,900	18,900	12,600	9,800	8,275	5,725	3,600
1,600	5,475	5,475	1,800	1,800	900	1,550	125	125	5,250	5,250	8,200	8,200	28,400	23,700	20,900	18,900	12,600	9,900	8,975	5,650	3,500
1,500	5,475	5,475	1,825	1,825	1,075	1,650	350	550	5,150	5,150	8,050	8,050	28,400	23,700	20,900	18,900	12,600	9,900	7,900	5,575	3,375
1,400	5,475	5,475	1,825	1,825	1,200	1,725	500	775	5,050	5,050	7,900	7,900	28,400	23,700	20,900	19,000	12,600	9,900	7,725	5,500	3,250
1,300	5,475	5,475	1,800	1,800	1,300	1,800	600	925	4,950	4,950	7,750	7,750	28,400	23,700	20,900	19,000	12,600	9,900	7,575	5,425	3,125
1,200	5,475	5,475	1,775	1,775	1,400	1,875	700	1,050	4,900	4,900	7,600	7,600	28,400	23,800	20,900	19,000	12,600	9,900	7,450	5,350	3,025
1,100	5,475	5,475	1,750	1,750	1,475	1,925	775	1,175	4,800	4,800	7,450	7,450	28,400	23,800	20,900	19,000	12,700	9,900	7,325	5,275	2,950
1,050	5,475	5,475	1,750	1,750	1,500	1,975	825	1,200	4,750	4,750	7,400	7,400	28,400	23,800	20,900	19,000	12,700	9,900	7,250	5,250	2,925
1,000	5,475	5,475	1,725	1,725	1,550	2,000	850	1,250	4,700	4,700	7,350	7,350	28,400	23,800	20,900	19,000	12,700	10,000	7,200	5,225	2,900
950	5,475	5,475	1,725	1,725	1,675	2,025	875	1,300	4,650	4,650	7,250	7,250	28,400	23,800	20,900	19,000	12,700	10,000	7,150	5,200	2,875
900	5,475	5,475	1,700	1,700	1,850	2,050	925	1,325	4,600	4,600	7,200	7,200	28,400	23,800	20,900	19,000	12,700	10,000	7,075	5,150	2,875
850	5,475	5,475	1,700	1,700	2,025	2,050	975	1,350	4,550	4,550	7,150	7,150	27,800	23,500	20,600	18,800	12,600	9,900	7,025	5,125	2,850
800	5,475	5,475	1,700	1,700	2,150	2,150	1,000	1,400	4,550	4,550	7,100	7,100	27,200	22,900	20,000	18,300	12,300	9,600	6,975	5,100	2,850
750	5,450	5,450	1,700	1,700	2,250	2,250	1,050	1,425	4,500	4,500	7,050	7,050	26,500	22,200	19,500	17,800	11,900	9,400	6,925	5,075	2,850
700	5,450	5,450	1,700	1,700	2,300	2,300	1,075	1,450	4,450	4,450	7,000	7,000	25,800	21,600	18,900	17,300	11,600	9,100	6,875	5,050	2,850
650	5,425	5,425	1,700	1,700	2,350	2,350	1,125	1,475	4,400	4,400	6,950	6,950	25,000	21,000	18,300	16,800	11,300	8,900	6,825	5,025	2,850
600	5,400	5,400	1,725	1,725	2,375	2,375	1,150	1,475	4,400	4,400	6,900	6,900	24,300	20,400	17,800	16,300	11,000	8,600	6,775	5,000	2,850
500	5,325	5,325	1,750	1,750	2,425	2,425	1,200	1,525	4,350	4,350	6,800	6,800	22,700	19,100	16,700	15,300	10,300	8,100	6,675	4,950	2,875
400	5,225	5,225	1,800	1,800	2,450	2,450	1,225	1,550	4,300	4,300	6,650	6,650	21,200	17,800	15,600	14,300	9,600	7,600	6,575	4,900	2,900
300	5,075	5,075	1,850	1,850	2,450	2,450	1,250	1,575	4,250	4,250	6,550	6,550	19,800	16,500	14,500	13,300	9,000	7,100	6,500	4,850	2,925
200	4,850	4,850	1,925	1,925	2,375	2,375	1,275	1,600	4,200	4,200	6,500	6,500	18,300	15,200	13,400	12,200	8,300	6,600	6,400	4,825	2,950
100	4,600	4,600	2,000	2,000	2,200	2,225	1,300	1,600	4,150	4,150	6,400	6,400	16,700	14,000	12,200	11,200	7,600	6,100	6,325	4,775	2,975
0	4,275	4,275	2,100	2,100	1,850	2,225	1,300	1,600	4,100	4,100	6,300	6,300	15,100	12,800	11,300	10,200	7,000	5,600	6,250	4,750	3,025

HOB_{fs} = 560m
Low HOB_{min} = 530m
High HOB_{min} = 1200m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 9.6h.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (Rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200	375			2,075	0	4,275	13,925	6,875	3,600	15,875								
2,100	700			2,300	2,750	4,250	13,950	6,900	3,650	15,800			0				0	
2,000	1,000			2,500	2,775	4,200	13,950	6,950	3,700	15,725			0–5				0–450	
1,900	1,350		0	2,675	2,800	4,150	13,975	6,975	3,750	15,625			0–5				0–800	
1,800	1,775	0	275	2,850	2,825	4,100	13,975	7,000	3,800	15,525			0–10				0–1,000	
1,700	2,675	25	600	2,975	2,850	4,050	14,000	7,025	3,850	15,450		0	0–15			0	0–1,050	
1,600	3,075	225	875	3,100	2,875	4,000	14,000	7,050	3,900	15,350		0–5	0–30			0–400	0–1,300	
1,500	3,275	450	1,125	3,200	2,900	3,975	14,025	7,075	3,925	15,250		0–5	5–50			0–700	50–1,400	
1,400	3,400	675	1,325	3,300	2,925	3,925	14,025	7,075	3,975	15,125	0	0–10	5–100		0	0–900	550–1,500	
1,300	3,525	875	1,500	3,400	2,950	3,900	14,050	7,100	4,000	15,025	0–5	0–15	10–170		0–50	0–1,050	750–1,600	
1,200	3,650	1,100	1,600	3,500	2,950	3,875	14,050	7,125	4,025	14,925	0–5	0–25	15–300		0–500	0–1,150	900–1,700	
1,100	3,750	1,325	1,725	3,600	2,975	3,850	14,050	7,125	4,075	14,800	0–10	5–50	25–580		0–700	50–1,250	1,050–1,750	
1,050	3,800	1,425	1,800	3,650	2,975	3,825	14,050	7,150	4,075	14,750	0–10	5–65	35–780		0–800	350–13,00	1,100–1,800	
1,000	3,850	1,550	1,850	3,700	3,000	3,800	14,075	7,150	4,100	14,675	0–15	5–95	50–1,140		0–850	500–1,350	1,150–1,800	
950	3,900	1,675	1,900	3,725	3,000	3,775	14,075	7,150	4,100	14,625	0–15	10–130	65–1,560		0–900	600–1,400	1,200–1,850	
900	3,950	1,850	1,950	3,775	3,025	3,775	14,075	7,175	4,125	14,575	0–20	10–180	90–2,160		0–950	650–1,400	1,200–1,850	
850	4,000	2,025	2,000	3,825	3,025	3,750	13,800	7,075	4,125	14,500	0–30	15–260	125–3,120		0–1,000	700–1,450	1,250–1,900	
800	4,050	2,150	2,050	3,875	3,050	3,750	13,400	6,900	4,025	14,450	5–45	15–370	180–4,440	0	50–1,050	800–1,450	1,300–1,900	0
750	4,100	2,250	2,075	3,900	3,050	3,725	13,025	6,700	3,925	14,375	5–65	25–550	270–6,600	0–5	300–1,100	850–1,500	1,300–1,950	0–50
700	4,125	2,300	2,125	3,950	3,050	3,700	12,625	6,525	3,825	14,325	5–95	35–835	400–9,900	0–5	400–1,100	900–1,500	1,350–1,950	0–300
650	4,125	2,350	2,175	3,975	3,075	3,675	12,225	6,350	3,725	14,250	10–145	55–1,300	63 0–15,600	0–5	500–1,150	900–1,550	1,350–1,950	0–400
600	4,150	2,375	2,200	4,000	3,075	3,650	11,850	6,150	3,625	14,175	10–220	80–2,000	960–24,000	0–10	550–12,00	950–1,550	1,400–2,000	0–450
500	4,125	2,425	2,275	4,050	3,075	3,625	11,050	5,775	3,400	14,050	FALLOUT GOVERNS							
400	4,075	2,450	2,325	4,025	3,100	3,575	10,275	5,400	3,200	13,925								
300	4,000	2,450	2,275	3,950	3,075	3,475	9,475	5,050	3,000	13,775								
200	3,825	2,375	2,125	3,975	3,050	3,400	8,700	4,675	2,800	13,625								
100	3,350	2,200	1,875	3,500	2,825	3,275	7,925	4,300	2,575	13,500								
0	2,775	1,850	1,500	3,150	2,525	3,200	7,125	3,925	2,375	13,350								

Figure 9.6h continued.

FTR
ACFT [1]

[1]Fighter Aircraft.

CONTINGENT EFFECTS Tables
Fighter Aircraft

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.
Impact burst not tabulated, fallout governs.

Yield KT	*HOB*	*Estimated radii in meters of 2 rad/hr contour of induced radiation, 1 hour after burst.*				*Estimated induced radiation intensity, 1 hour after burst, at GZ. In rad/hr.*			
		Soil type I (Liberia, Africa)	*Soil type II (Nevada desert)*	*Soil type III (lava clay, Hawaii)*	*Soil type IV (beach sand, Pensacola, Fla)*	*Soil type I*	*Soil type II*	*Soil type III*	*Soil type IV*
DELTA/5	Low	200–550	450–800	700–1,150	0–100	5–100	40–940	450–11,000	0–5
	High	0–500	400–800	700–1,150	0	0–35	15–275	140–3,300	0
ECHO/10	Low	300–600	500–900	800–1,350	0–250	10–200	75–1,850	900–22,200	0–5
	High	50–550	400–850	750–1,350	0	5–45	20–390	200–4,680	0
FOXTROT/20	Low	350–750	600–1,000	900–1,400	0–300	15–310	120–2,800	1,350–33,600	0–10
	High	50–700	500–950	850–1,400	0	5–60	25–530	260–2,360	0
GOLF/50	Low	500–800	700–1,150	1,050–1,550	0–450	25–610	220–5,500	2,640–66,000	0–15
	High	250–700	550–1,100	1,000–1,500	0–50	5–55	20–475	230–5,700	0–5
HOTEL/100	Low	550–900	800–1,250	1,150–1,650	0–500	40–990	360–9,000	4,320–108,000	0–25
	High	50–750	600–1,150	1,050–1,600	0	5–35	15–310	150–3,720	0
INDIA/200	Low	450–950	750–1,300	1,200–1,800	0–400	15–370	135–3,300	1,590–39,600	0–10
	High	0–800	550–1,200	1,100–1,700	0	0–30	15–260	125–3,120	0
JULIETT/500	Low	500–1,050	900–1,450	1,350–1,900	0–500	15–280	100–2,500	1,200–30,000	0–10
	High	0–750	450–1,200	1,100–1,750	0	0–10	5–90	45–1,080	0
KILO/1,000	Low	550–1,200	950–1,550	1,400–2,000	0–450	10–220	80–2,000	960–24,000	0–10
	High	0–700	50–1,250	1,050–1,750	0	0–10	5–50	25–580	0

NOTE: For description of chemical composition and effects of variations in chemical composition in soil types, see FM 101-31-1, app III, annex F.

Figure 9.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	*OBSTACLES TO MOVEMENT*							*CASUALTIES TO EXPOSED PERSONNEL*		
	Foot and wheeled vehicle movement				*Tracked vehicle movement*					
	Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*
DELTA/5	600	800	900	1,400	600	800	900	400	600	600
ECHO/10	750	1,000	1,100	1,900	750	1,000	1,100	600	800	900
FOXTROT/20	1,050	1,300	1,500	2,400	1,050	1,300	1,500	750	1,000	1,150
GOLF/50	1,650	2,100	2,500	3,900	1,650	2,100	2,500	1,200	1,550	1,700
HOTEL/100	2,000	2,600	3,100	5,000	2,000	2,600	3,100	1,700	2,000	2,250
INDIA/200	2,450	3,200	3,800	6,200	2,450	3,200	3,800	2,000	2,400	2,700
JULIETT/500	3,750	4,800	6,000	9,400	3,750	4,800	6,000	3,150	3,600	4,200
KILO/1,000	5,000	6,200	7,700	12,000	5,000	6,200	7,700	4,050	4,600	5,200

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 9.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	*AIRCRAFT SAFETY RADII—meters (See note 2.)*		
	Light fixed wing	*Recon and obsn hel*	*Transport and util hel*
DELTA/5	9,000	9,000	7,000
ECHO/10	10,000	10,000	9,000
FOXTROT/20	13,000	13,000	11,000
GOLF/50	17,000	16,000	15,000
HOTEL/100	22,000	21,000	18,000
INDIA/200	27,000	26,000	23,000
JULIETT/500	35,000	34,000	31,000
KILO/1,000	43,000	42,000	40,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of safety.

Figure 9.7c.

FIRE AREAS (See note.)

Yield KT	HOB	Expected radii for ignition of wildland fuels during fire season—meters							
		Dry climate (25 percent relative humidity)				Damp climate (75 percent relative humidity)			
		Class I	Class II	Class III	Class IV	Class I	Class II	Class III	Class IV
DELTA/5	Air	2,000	1,800	1,700	1,400	1,800	1,800	1,500	1,100
	Impact	1,200	1,100	1,000	800	1,100	1,100	900	700
ECHO/10	Air	2,600	2,400	2,200	1,800	2,400	2,400	2,100	1,500
	Impact	1,500	1,400	1,300	1,100	1,400	1,400	1,200	900
FOXTROT/20	Air	3,400	3,200	2,900	2,400	3,200	3,200	2,700	2,000
	Impact	2,000	1,900	1,700	1,400	1,900	1,900	1,500	1,200
GOLF/50	Air	4,900	4,500	4,100	3,300	4,500	4,500	3,800	2,900
	Impact	2,800	2,600	2,300	2,000	2,600	2,600	2,200	1,600
HOTEL/100	Air	6,400	5,900	5,400	4,400	5,900	5,900	4,800	3,700
	Impact	3,500	3,200	3,000	2,500	3,200	3,200	2,800	2,100
INDIA/200	Air	8,300	7,700	7,000	5,800	7,700	7,700	6,400	4,800
	Impact	4,500	4,200	3,800	3,200	4,200	4,200	3,500	2,700
JULIETT/500	Air	11,900	11,000	9,900	8,200	11,000	11,000	9,200	6,900
	Impact	6,200	5,700	5,300	4,400	5,700	5,700	4,900	3,800
KILO/1,000	Air	15,600	14,200	12,900	10,700	14,200	14,200	11,900	8,900
	Impact	7,800	7,200	6,600	5,600	7,200	7,200	6,200	4,800

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 9.7d.

CRATER DIMENSIONS (See note.)

Yield KT	Approx crater dimensions for various soil types—meters							
	Hard rock (granite and sandstone)		Soft rock (dry soil or soft rock)		Saturated soil (water slowly fills crater)		Saturated soil (water rapidly fills crater)	
	Radius	Depth	Radius	Depth	Radius	Depth	Radius	Depth
DELTA/5	27	8	34	10	50	15	67	7
ECHO/10	34	10	42	12	63	18	84	8
FOXTROT/20	43	11	53	14	80	21	106	10
GOLF/50	58	14	72	17	108	26	144	12
HOTEL/100	73	17	91	21	136	31	182	15
INDIA/200	92	20	115	24	172	36	229	17
JULIETT/500	124	25	155	31	233	46	310	22
KILO/1,000	156	29	196	36	293	54	391	26

NOTE: Based on contact surface burst, for more detailed analysis, see engineer element.

Figure 9.7e.

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[1]Fighter Aircraft.

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CHAPTER 10
TACTICAL BOMBER

10.1 GENERAL

a. Orientation. This chapter contains employment data for the nuclear bombs delivered by tactical bombers.

b. Weapon characteristics.

(1) *Yield.* The bombs carried by tactical bombers have yields of Hotel/100 KT, India/200 KT, Juliett/500 KT, Kilo/1 MT, Lima/2 MT, and Mike/5 MT.

(2) *Fuzing.*

(*a*) The fuzing for these bombs provides airburst and impact fuzing options. The airburst option is radar-fuzed and can be set for either high or low airburst; these are the only heights of burst available. Contact backup is provided in all cases where the airburst option is selected. The Hotel/100 KT weapon *only* has, in addition, a subsurface burst capability fuzed hy a time delay fuze. This option can be selected only as a primary means of detonation.

(*b*) The fuzes are preset at the following heights of burst:

Warhead section	*HOB option*	*HOB (meters)*	PE_h *(meters)*
Hotel/100 KT	low	490	100
	high	838	
India/200 KT	low	677	100
	high	965	
Juliett/500 KT	low	795	100
	high	1,184	
Kilo/1 MT	low	910	100
	high	1,400	
Lima/2 MT	low	1,056	100
	high	1,673	
Mike/5 MT	low	1,308	100
	high	2,146	

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The radius of action for tactical bombers varies depending on the type bomber used. For training purposes only, a maximum radius of action of 1,200 kilometers is assumed. In an actual situation, the delivery unit concerned is consulted to obtain this information.

(2) *Tactical system accuracy.* Horizontal dispersion is dependent on the proficiency of the aircraft pilot and crew and the technique of delivery. The CEP used in this chapter for tactical bomber delivery is an average value for well-trained crews. A CEP of 600 meters has been used in the computation of the weapon selection tables. The vertical probable error is 100 meters.

(3) *Response time.* The times shown below can be used as a basis for general tactical planning. For detailed tactical planning, the *response times should be the actual times obtained from the delivery unit concerned.* The times listed below are average times for normal operations after alert. Such factors as distance and routes to the bomb storage area, type of transportation, type of ground handling equipment, and enemy action influence bomb preparation and loading.

Situation	*Time (minutes)*	*Remarks*
I[1]	120	(*a*) In both situations, flight time must be added to the times shown. (*b*) Time may vary in situation I as distance from storage area to aircraft varies.
II[2]	20	

[1]Situation I (ready)—bomb is partially assembled and tested to allow shortest assembly time. The bomb is located in a storage area.

[2]Situation II (strike)—bomb is assembled and loaded on the aircraft. The aircraft and crew are on ground alert.

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(4) *Special considerations.* The target analyst coordinates closely with the liaison officer representing the delivery unit concerned. The analyst needs to know the CEP involved, because CEP varies depending on the crew assigned and the delivery technique used to attack the target. (See para 10.1*c*(2), above, for assumption made for the weapon selection tables that follow.) When an airburst fuzing option is selected, the fire mission states the desired radar HOB setting as high or low. When an impact fuzing option is selected, the fire mission specifies HOB impact. When employing these weapons, a fallout prediction is always made. When a subsurface burst fuzing option is selected for the Hotel/100 KT weapon, the fire mission specifies HOB subsurface.

[1]Tactical Bomber.

EXPOSED Personnel Targets
Tactical Bomber

Yield	HOB option (HOB-meters)	Minimum safe distance (negligible risk Unw Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
KT	(See note)	(meters)	2,400	2,800	3,200	3,600	4,000	4,400	4,800	5,200	2,400	2,800	3,200	3,600	4,000	4,400	4,800	5,200	Prompt	Delayed	(meters)
100	High (838)	12,600	.5/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.5/.7	.5/.5	.4/.4	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,125	2,125	1,100
	Low (490)	12,600	.5/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.5/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,150	2,150	(all
	Impact	*7,600	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1		.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1		1,725	1,725	yields)
			Target radius (meters)								Target radius (meters)										
			3,200	3,600	4,000	4,400	4,800	5,200	5,600	6,000	3,200	3,600	4,000	4,400	4,800	5,200	5,600	6,000			
	High (965)	16,500	.6/.7	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.2/.2	.6/.7	.5/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.2/.2	2,850	2,850	
200	Low (677)	16,500	.6/.7	.5/.6	.4/.5	.4/.4	.3/.4	.2/.3	.2/.3	.2/.2	.6/.7	.5/.6	.4/.5	.4/.4	.3/.4	.2/.3	.2/.3	.2/.2	2,875	2,875	
	Impact	*9,500	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	.1/.2	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	.1/.2	2,275	2,275	
			Target radius (meters)								Target radius (meters)										
			4,000	4,800	5,600	6,400	7,200	8,000	8,800	9,600	4,000	4,800	5,600	6,400	7,200	8,000	8,800	9,600			
	High (1,184)	23,000	.7/.8	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.8	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	4,150	4,150	
500	Low (795)	23,000	.7/.8	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.7/.8	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	4,150	4,150	
	Impact	*12,700	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		3,300	3,300	
			Target radius (meters)								Target radius (meters)										
			6,400	7,200	8,000	8,800	9,600	10,400	11,200	12,000	6,400	7,200	8,000	8,800	9,600	10,400	11,200	12,000			
	High (1,400)	29,600	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	5,475	5,475	
1,000	Low (910)	29,600	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.6/.7	.5/.6	.4/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	5,450	5,450	
	Impact	*16,300	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	4,350	4,350	
			Target radius (meters)								Target radius (meters)										
			8,000	10,000	12,000	14,000	16,000	18,000	20,000		8,000	10,000	12,000	14,000	16,000	18,000	20,000				
	High (1,673)	38,200	.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.7/.8	.5/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		7,225	7,225	
2,000	Low (1,056)	38,200	.7/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		.7/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		7,175	7,175	
	Impact	*21,300	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1				.4/.5	.3/.3	.2/.2	.1/.2	.1/.1				5,725	5,725	
			Target radius (meters)								Target radius (meters)										
			12,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000			
	High (2,146)	56,000	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	10,425	10,425	
5,000	Low (1,308)	53,700	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	.6/.7	.5/.5	.3/.4	.3/.3	.2/.3	.2/.2	.1/.2	.1/.2	10,325	10,325	
	Impact	*30,400	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1			.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1			8,250	8,250	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 10.1.

Yield KT	HOB option (HOB-meters) (See note)	Minimum safe distance (negligible risk UnW Ex) (meters)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o (meters)
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
			800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Prompt	Delayed	
100	High (838)	12,600	.2/.5	.2/.4	.2/.3	.1/.3	.1/.2	.1/.2	.1/.2	.0/.1	.3/.6	.3/.5	.2/.3	.1/.2	.1/.2	.0/.1			650	800	1,100 (all yields)
	Low (490)	12,600	.2/.6	.2/.5	.2/.4	.2/.4	.2/.3	.1/.2	.1/.2	.1/.2	.5/.7	.4/.6	.3/.5	.2/.3	.2/.3	.1/.2	.1/.1		775	1,125	
	Impact	*7,600	.4/.7	.4/.6	.3/.5	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	1,075	1,300	
			Target radius (meters)								Target radius (meters)										
			400	800	1,200	1,600	2,000	2,400	2,800	3,200	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600			
200	High (965)	16,500	.4/.8	.4/.7	.3/.5	.2/.4	.2/.3	.1/.2	.1/.1		.4/.7	.3/.6	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1		950	950	
	Low (677)	16,500	.5/.7	.4/.7	.3/.5	.3/.4	.2/.3	.1/.2	.1/.1		.5/.8	.4/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.0/.1	1,050	1,150	
	Impact	*9,500	.6/.8	.4/.8	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1	.7/.9	.5/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,150	1,450	
			Target radius (meters)								Target radius (meters)										
			800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600			
500	High (1,184)	23,000	.6/.9	.5/.8	.4/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.6/.9	.5/.8	.4/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,400	1,400	
	Low (795)	23,000	.6/.9	.5/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.2	.7/.9	.5/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	1,350	1,425	
	Impact	*12,700	.8/.9	.6/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.8/.9	.6/.8	.6/.7	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	1,675	1,675	
			Target radius (meters)								Target radius (meters)										
			1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000			
1,000	High (1,400)	29,600	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	1,800	1,800	
	Low (910)	29,600	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	.7/.9	.6/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	1,700	1,700	
	Impact	*16,300	.8/.9	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	.8/.9	.7/.9	.6/.8	.5/.7	.4/.5	.3/.4	.3/.4	.2/.3	2,100	2,100	
			Target radius (meters)								Target radius (meters)										
			1,600	2,400	3,200	4,000	4,800	5,600	6,400	7,200	1,600	2,400	3,200	4,000	4,800	5,600	6,400	7,200			
2,000	High (1,673)	38,200	.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		.8/.9	.6/.7	.4/.5	.2/.3	.2/.2	.1/.2	.1/.1		2,225	2,225	
	Low (1,056)	38,200	.8/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1		.8/.9	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1		2,150	2,150	
	Impact	*21,300	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	.9/.9	.7/.8	.5/.6	.4/.4	.2/.3	.2/.2	.1/.2	.1/.1	2,650	2,650	
			Target radius (meters)								Target radius (meters)										
			2,000	2,800	3,600	4,400	5,200	6,000	6,800	7,600	2,000	2,800	3,600	4,400	5,200	6,000	6,800	7,600			
5,000	High (2,146)	56,000	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.3/.3	.2/.3	.1/.2	.1/.2	2,925	2,925	
	Low (1,308)	53,700	.9/.9	.7/.8	.5/.6	.4/.5	.2/.3	.2/.2	.1/.2	.1/.2	.9/.9	.7/.8	.5/.6	.4/.5	.2/.3	.2/.2	.1/.2	.1/.2	2,900	2,900	
	Impact	*30,400	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	.9/.9	.8/.9	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.2/.2	3,600	3,600	

NOTE.: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst –Precludes fallout.
Impact burst –Produces fallout.

*Initial effects only. Fallout governs.

Figure 10.2.

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[1]Tactical Bomber.

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Yield	HOB option (HOB—meters)	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o
			WHEELED VEHICLES									TANKS AND ARTILLERY								
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
KT	(See note)	(meters)	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	(meters)	200	400	600	800	1,000	1,200	1,400	1,600	(meters)	(meters)
100	High (838)	12,600	.0/.5	.0/.4	.0/.3	.0/.2	.0/.1				125	.0/.0								0	1,100 (all yields)
	Low (490)	12,600	.7/.8	.5/.8	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	1,325	.0/.4	.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1	200	
	Impact	*7,600	.4/.7	.4/.6	.3/.4	.2/.3	.2/.2	.1/.2	.1/.1		1,100	.0/.6	.1/.6	.1/.5	.1/.5	.2/.4	.2/.3	.2/.3	.1/.2	750	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,400	(meters)	600	800	1,000	1,200	1,400	1,600	1,800	2,000	(meters)	
200	High (965)	16,500	.1/.5	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		575	.0/.1								0	
	Low (677)	16,500	.6/.8	.5/.7	.4/.6	.3/.5	.2/.4	.2/.3	.1/.2	.1/.2	1,725	.0/.4	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		250	
	Impact	*9,500	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		1,450	.3/.7	.3/.6	.3/.6	.3/.5	.3/.4	.2/.3	.2/.3	.2/.2	975	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			2,400	3,200	4,000	4,800	5,600	6,400	7,200	8,000	(meters)	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	(meters)	
500	High (1,184)	23,000	.5/.7	.3/.5	.2/.4	.1/.3	.0/.2	.0/.1			1,750	.0/.1								0	
	Low (795)	23,000	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	2,725	.3/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		775	
	Impact	*12,700	.5/.7	.4/.4	.2/.3	.1/.2	.1/.1				2,100	.5/.8	.4/.6	.3/.5	.3/.3	.2/.3	.1/.2	.1/.2	.1/.1	1,400	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			2,400	3,600	4,800	6,000	7,200	8,400	9,600	10,800	(meters)	1,800	2,400	3,000	3,600	4,200	4,800	5,400	6,000	(meters)	
1,000	High (1,400)	29,600	.8/.9	.6/.8	.4/.5	.2/.3	.1/.2	.1/.2	.1/.1		3,100	.0/.2	.0/.1							250	
	Low (910)	29,600	.9/.9	.8/.9	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	3,750	.4/.7	.3/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1		1,325	
	Impact	*16,300	.8/.9	.5/.6	.3/.3	.2/.2	.1/.2	.1/.1			2,775	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		1,850	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			3,600	4,800	6,000	7,200	8,400	9,600	10,800	12,000	(meters)	2,400	3,200	4,000	4,800	5,600	6,400	7,200	8,000	(meters)	
2,000	High (1,673)	38,200	.8/.9	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.2	4,350	.0/.2	.0/.1							650	
	Low (1,056)	38,200	.9/.9	.8/.9	.6/.7	.4/.5	.3/.4	.2/.3	.2/.2	.1/.2	5,100	.6/.8	.4/.6	.2/.4	.1/.3	.1/.2	.1/.2	.0/.1		2,075	
	Impact	*21,300	.7/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		3,675	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		2,450	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			9,600	10,800	12,000	13,200	14,400	15,600	16,800	18,000	(meters)	3,600	4,800	6,000	7,200	8,400	9,600	10,800	12,000	(meters)	
5,000	High (2,146)	56,000	.4/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	.1/.2	.1/.1	6,550	.1/.3	.0/.2	.0/.1						1,425	
	Low (1,308)	53,700	.6/.6	.4/.5	.3/.4	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	7,575	.8/.9	.5/.7	.3/.5	.2/.3	.1/.3	.1/.2	.1/.2	.1/.1	3,650	
	Impact	*30,400	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1				5,300	.7/.8	.5/.5	.3/.4	.2/.2	.1/.2	.1/.1			3,525	

01-2060

NOTE: High airburst—Reduces intensity of induced contamination. Precludes fallout.
Low airburst—Precludes fallout.
Impact burst—Produces fallout.
*Initial effects only. Fallout governs.

Figure 10.3.

TAC
BMR 1

[1] Tactical Bomber.

Troop Safety Distances—Meters
Tactical Bomber

Range	*Yield*	*Height of burst option*	*Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown*								
			Unwarned Exposed			*Warned Exposed*			*Warned Protected*		
			NEG Risk	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*
Range of aircraft is 800 km	HOTEL/ 100 KT	High	12,600	10,200	8,400	8,400	5,900	4,900	5,400	4,100	3,100
		Low	12,600	10,200	8,500	8,500	5,900	4,900	4,900	3,800	2,800
		Impact [1]	7,600	6,200	5,400	5,400	3,900	3,400	4,200	3,400	2,900
	INDIA/ 200 KT	High	16,500	13,100	11,700	11,100	7,700	6,200	6,300	4,800	3,500
		Low	16,500	13,100	11,700	11,100	7,700	6,300	5,800	4,500	3,200
		Impact [1]	9,500	7,900	6,900	6,700	4,900	4,100	4,900	4,000	3,000
	JULIETT/ 500 KT	High	23,000	19,000	16,800	15,600	10,600	8,600	7,700	5,800	4,100
		Low	23,000	19,000	16,800	15,600	10,600	8,600	7,200	5,500	3,600
		Impact [1]	12,700	10,900	9,700	9,100	6,500	5,400	6,200	5,000	3,600
	KILO/ 1,000 KT	High	29,600	25,000	22,100	20,200	13,900	11,200	9,200	6,900	4,700
		Low	29,600	25,000	22,100	20,200	13,900	11,200	8,600	6,500	4,200
		Impact [1]	16,300	14,000	12,500	11,400	8,200	6,800	7,500	6,000	4,300
	LIMA/ 2,000 KT	High	38,200	32,700	28,600	25,900	17,900	14,800	11,100	8,200	5,400
		Low	38,200	32,700	28,600	25,900	17,900	14,800	10,400	7,800	4,800
		Impact [1]	21,300	17,900	16,500	14,700	10,400	8,400	9,100	7,200	4,900
	MIKE/ 5,000 KT	High	56,000	46,900	39,600	36,800	26,300	21,300	14,400	10,600	6,700
		Low	53,700	45,000	38,100	35,300	25,300	20,500	13,300	10,000	6,100
		Impact [1]	30,400	25,900	22,700	20,400	14,900	12,000	12,000	9,400	6,400

NOTE: The troop safety distances include the safety radius for the yield plus the buffer distance for delivery perpendicular to a straight-line friendly disposition. See figure 10.5 for special friendly troop orientations.

[1] Initial effects only. Fallout governs.

Figure 10.4.

SUPPLEMENTARY TROOP SAFETY Tables
Tactical Bomber

The troop safety distances in figure 10.4 are based on the friendly troop orientation shown in figure 1, below. The circular delivery pattern of the tactical bomber may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ - Desired ground zero
R_s – Safety radius.
d_b – Buffer distance.
-Friendly troops.
-Direction of fire.

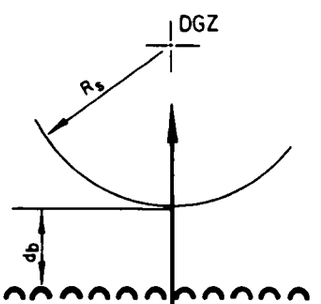

Figure 1. Straight line, perpendicular delivery.

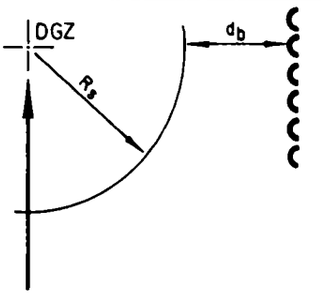

Figure 2. Straight line, parallel delivery.

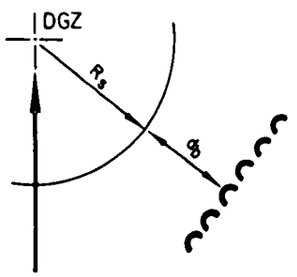

Figure 3. Straight line, 45° delivery.

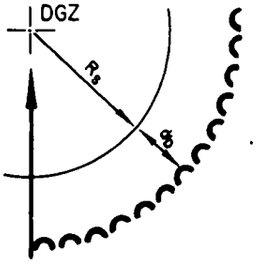

Figure 4. Quarter circle.

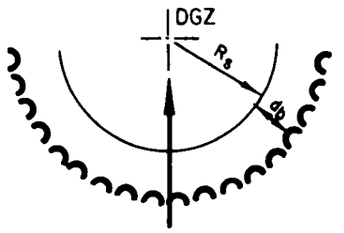

Figure 5. Half circle.

When the special friendly troop orientations shown above, occur, the tabulated troop safety distances in figure 10.4 must be increased where plus (+) values are shown below; the tabulated troop safety distancea may be decreased where minus (–) valuea are shown below. All figurea shown in meters.

All Height of Burst Options–All Yields				
Range (meters)	*Straight line, parallel delivery (fig 2)*	*Straight line, 45° delivery (fig 3)*	*Quarter circle (fig 4)*	*Half circle (fig 5)*
All ranges	0	0	+200	+400

Figure 10.5.

TAC
BMR [1]

[1] Tactical Bomber.

CASUALTY and DAMAGE Tables
Tactical Bomber
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,350		975	0	0		800			2,650	2,650	4,600	4,600	11,325	8,900	7,575	7,100	4,475	3,400	4,625	3,150	1,350
1,300		1,025	125	125	0	875			2,700	2,700	4,550	4,550	11,325	8,900	7,600	7,100	4,475	3,425	4,575	3,125	1,475
1,250		1,100	250	375	200	950			2,700	2,700	4,500	4,500	11,350	8,900	7,600	7,125	4,500	3,425	4,525	3,100	1,600
1,200		1,150	375	500	400	1,000			2,700	2,700	4,450	4,450	11,350	8,925	7,600	7,125	4,500	3,450	4,475	3,075	1,725
1,150	0	1,200	475	625	525	1,075		0	2,675	2,675	4,400	4,400	11,350	8,925	7,625	7,125	4,525	3,475	4,400	3,025	1,825
1,100	1,950	1,950	550	700	625	1,125		175	2,650	2,650	4,300	4,300	11,350	8,925	7,625	7,125	4,525	3,475	4,325	2,975	1,875
1,050	2,100	2,100	625	775	700	1,175		375	2,600	2,600	4,250	4,250	11,350	8,950	7,625	7,150	4,550	3,500	4,250	2,925	1,850
1,000	2,150	2,150	675	825	775	1,200		500	2,600	2,600	4,150	4,150	11,350	8,950	7,625	7,150	4,550	3,525	4,175	2,875	1,825
950	2,175	2,175	725	900	825	1,250		575	2,575	2,575	4,050	4,050	11,350	8,950	7,650	7,150	4,575	3,525	4,100	2,825	1,800
900	2,175	2,175	775	950	900	1,275	0	650	2,525	2,525	4,000	4,000	11,375	8,950	7,650	7,175	4,575	3,550	4,025	2,775	1,775
850	2,175	2,175	800	1,000	950	1,325	175	725	2,475	2,475	3,900	3,900	11,375	8,950	7,650	7,175	4,575	3,550	3,950	2,725	1,725
800	2,175	2,175	825	1,025	975	1,350	350	775	2,450	2,450	3,800	3,800	11,375	8,950	7,650	7,175	4,600	3,575	3,850	2,675	1,675
775	2,175	2,175	825	1,050	1,000	1,350	400	800	2,425	2,425	3,800	3,800	11,375	8,975	7,650	7,175	4,600	3,575	3,800	2,650	1,650
750	2,175	2,175	825	1,075	1,025	1,375	450	825	2,400	2,400	3,750	3,750	11,375	8,975	7,675	7,175	4,600	3,575	3,775	2,625	1,625
725	2,175	2,175	850	1,075	1,050	1,400	475	850	2,375	2,375	3,700	3,700	11,375	8,975	7,675	7,175	4,600	3,575	3,725	2,600	1,600
700	2,175	2,175	850	1,100	1,050	1,400	525	875	2,350	2,350	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,675	2,600	1,575
675	2,175	2,175	850	1,100	1,075	1,425	550	875	2,325	2,325	3,650	3,650	11,400	8,975	7,675	7,200	4,625	3,600	3,625	2,575	1,500
650	2,175	2,175	850	1,125	1,075	1,425	575	900	2,300	2,300	3,600	3,600	11,400	8,975	7,675	7,200	4,625	3,600	3,575	2,550	1,525
625	2,175	2,175	850	1,150	1,100	1,450	600	925	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,550	2,525	1,525
600	2,175	2,175	850	1,150	1,125	1,450	625	950	2,275	2,275	3,550	3,550	11,400	8,975	7,675	7,200	4,625	3,600	3,525	2,525	1,550
575	2,175	2,175	875	1,175	1,125	1,450	650	950	2,250	2,250	3,500	3,500	11,400	9,000	7,675	7,200	4,625	3,625	3,475	2,500	1,550
550	2,175	2,175	900	1,175	1,150	1,475	675	975	2,225	2,225	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,450	2,475	1,550
525	2,175	2,175	900	1,200	1,150	1,475	700	975	2,200	2,200	3,450	3,450	11,400	9,000	7,675	7,200	4,625	3,625	3,425	2,475	1,575
500	2,175	2,175	925	1,200	1,150	1,475	725	1,000	2,175	2,175	3,400	3,400	11,400	9,000	7,675	7,200	4,650	3,625	3,375	2,450	1,575
475	2,175	2,175	925	1,225	1,175	1,500	725	1,000	2,175	2,175	3,350	3,350	11,400	9,000	7,675	7,200	4,650	3,625	3,350	2,425	1,600
450	2,175	2,175	950	1,225	1,175	1,500	750	1,025	2,150	2,150	3,350	3,350	11,400	9,000	7,675	7,225	4,650	3,625	3,325	2,425	1,600
425	2,175	2,175	950	1,225	1,200	1,500	750	1,025	2,125	2,125	3,300	3,300	11,400	9,000	7,675	7,225	4,650	3,625	3,300	2,400	1,600
400	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,100	2,100	3,250	3,250	11,400	9,000	7,675	7,225	4,650	3,625	3,275	2,375	1,600
375	2,175	2,175	975	1,250	1,200	1,525	775	1,050	2,075	2,075	3,250	3,250	11,400	9,000	7,700	7,225	4,650	3,625	3,250	2,375	1,625
350	2,175	2,175	975	1,250	1,225	1,525	800	1,050	2,075	2,075	3,200	3,200	11,400	9,000	7,700	7,225	4,650	3,650	3,225	2,350	1,625
325	2,175	2,175	1,000	1,250	1,225	1,525	800	1,075	2,050	2,050	3,200	3,200	11,200	8,650	7,525	7,050	4,550	3,550	3,200	2,350	1,625
300	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,050	2,050	3,150	3,150	10,850	8,400	7,275	6,825	4,400	3,450	3,150	2,325	1,625
275	2,150	2,150	1,000	1,275	1,225	1,550	825	1,075	2,025	2,025	3,150	3,150	10,400	8,125	7,025	6,600	4,275	3,350	3,125	2,325	1,625
250	2,125	2,125	1,025	1,275	1,250	1,550	825	1,075	2,025	2,025	3,100	3,100	10,100	7,850	6,775	6,375	4,125	3,250	3,125	2,300	1,650
225	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,100	3,100	9,800	7,550	6,550	6,150	3,975	3,125	3,100	2,300	1,650
200	2,100	2,100	1,025	1,275	1,250	1,550	850	1,100	2,000	2,000	3,050	3,050	9,400	7,250	6,300	5,925	3,825	3,025	3,075	2,275	1,650
175	2,075	2,075	1,025	1,300	1,250	1,550	850	1,100	1,975	1,975	3,050	3,050	9,050	6,950	6,050	5,700	3,675	2,900	3,050	2,275	1,650
150	2,025	2,025	1,025	1,300	1,250	1,550	850	1,100	1,950	1,950	3,000	3,000	8,700	6,650	5,800	5,475	3,525	2,800	3,025	2,250	1,650
125	2,000	2,000	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	3,000	3,000	8,350	6,375	5,550	5,225	3,375	2,700	3,000	2,250	1,650
100	1,950	1,950	1,050	1,300	1,250	1,575	875	1,100	1,925	1,925	2,950	2,950	7,975	6,100	5,300	5,000	3,250	2,600	2,975	2,225	1,650
75	1,900	1,900	1,050	1,300	1,275	1,575	875	1,100	1,900	1,900	2,950	2,950	7,600	5,825	5,050	4,750	3,125	2,500	2,950	2,225	1,650
50	1,850	1,850	1,050	1,300	1,275	1,575	875	1,125	1,900	1,900	2,900	2,900	7,250	5,550	4,825	4,525	2,950	2,375	2,950	2,225	1,650
25	1,775	1,775	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,825	5,275	4,600	4,325	2,825	2,250	2,925	2,200	1,650
0	1,700	1,700	1,050	1,300	1,275	1,575	875	1,125	1,875	1,875	2,900	2,900	6,400	5,000	4,350	4,125	2,700	2,150	2,900	2,200	1,650

HOB_{fs} = 140 m

Low HOB_{min} = 246 m

High HOB_{min} = 557 m

$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m

$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m

$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 10.6a.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod Dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced Contamination							
											Intensity at GZ (rad/hr)				2 rad/hr radius			
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
1,350				0			5,500	2,425	725	7,600			0–15				0–950	
1,300				100			5,525	2,450	825	7,575		0	0–20			0	0–1,050	
1,250				250			5,525	2,475	900	7,550		0–5	0–25			0–50	0–1,100	
1,200				400		0	5,550	2,500	950	7,500		0–5	0–30			0–400	0–1,150	
1,150				525		1,550	5,550	2,525	1,025	7,475		0–5	5–45			0–550	50–1,200	
1,100	0			650		1,650	5,550	2,550	1,075	7,425		0–5	5–60			0–600	350–1,250	
1,050	50			775		1,675	5,575	2,575	1,125	7,400		0–10	5–80			0–700	500–1,300	
1,000	200			875		1,675	5,575	2,600	1,175	7,350		0–10	5–120			0–800	600–1,350	
950	350			950	0	1,675	5,600	2,625	1,200	7,325	0	0–15	10–160		0	0–850	650–1,400	
900	475		0	1,050	1,175	1,675	5,600	2,625	1,250	7,275	0–5	0–20	10–220		0–50	0–900	750–1,400	
850	650		75	1,125	1,200	1,675	5,600	2,650	1,275	7,225	0–5	0–30	15–320		0–350	0–950	800–1,450	
800	950	0	200	1,175	1,225	1,675	5,625	2,650	1,300	7,175	0–5	5–40	20–450		0–450	50–1,000	850–1,450	
775	1,150	25	275	1,200	1,250	1,675	5,625	2,675	1,325	7,150	0–5	5–45	25–530		0–500	200–1,000	850–1,500	
750	1,200	75	325	1,225	1,250	1,675	5,625	2,675	1,350	7,125	0–10	5–55	30–660		0–550	300–1,050	900–1,500	
725	1,250	125	400	1,250	1,250	1,675	5,625	2,675	1,350	7,100	0–10	5–70	35–810		0–550	350–1,050	900–1,500	
700	1,300	175	450	1,275	1,275	1,675	5,625	2,700	1,375	7,075	0–10	5–90	40–990		0–600	400–1,050	950–1,500	
675	1,325	225	475	1,300	1,275	1,675	5,625	2,700	1,375	7,050	0–15	5–110	50–1,230		0–600	450–1,100	950–1,550	
650	1,350	275	525	1,325	1,275	1,675	5,625	2,700	1,400	7,025	0–15	10–130	65–1,560		0–650	500–1,100	950–1,550	
625	1,375	325	575	1,325	1,275	1,675	5,625	2,700	1,400	7,000	0–20	10–160	80–1,920		0–700	500–1,100	1,000–1,550	
600	1,400	350	600	1,350	1,275	1,675	5,650	2,725	1,425	6,975	0–25	10–200	100–2,400		0–700	550–1,100	1,000–1,550	
575	1,425	400	625	1,375	1,275	1,675	5,650	2,725	1,425	6,950	0–30	10–245	120–2,940		0–700	600–1,150	1,000–1,550	
550	1,450	450	650	1,400	1,300	1,675	5,650	2,725	1,425	6,925	5–35	15–310	150–3,720		50–750	600–1,150	1,050–1,600	
525	1,475	500	675	1,425	1,300	1,675	5,650	2,725	1,450	6,875	5–50	20–410	200–4,920	0	100–750	650–1,150	1,050–1,600	0
500	1,500	550	700	1,450	1,300	1,675	5,650	2,725	1,450	6,850	5–55	20–500	240–6,000	0–5	250–800	650–1,150	1,050–1,600	0–50
475	1,525	600	725	1,450	1,300	1,675	5,650	2,750	1,450	6,825	5–85	30–750	360–9,000	0–5	300–800	650–1,150	1,050–1,600	0–150
450	1,550	650	750	1,475	1,300	1,675	5,650	2,750	1,475	6,800	5–105	40–950	460–11,400	0–5	350–800	700–1,150	1,100–1,600	0–250
425	1,575	700	775	1,500	1,300	1,675	5,650	2,750	1,475	6,775	10–140	50–1,250	600–15,000	0–5	350–800	700–1,200	1,100–1,600	0–300
400	1,600	775	800	1,525	1,325	1,675	5,650	2,750	1,475	6,750	10–190	70–1,650	800–19,800	0–10	400–850	700–1,200	1,100–1,650	0–300
375	1,600	850	800	1,550	1,325	1,650	5,650	2,750	1,500	6,700	10–240	90–2,150	1,040–25,800	0–10	450–850	750–1,200	1,100–1,650	0–350
350	1,625	900	825	1,550	1,325	1,650	5,650	2,750	1,500	6,675	15–300	110–2,650	1,280–31,800	0–10	450–850	750–1,250	1,100–1,650	0–400
325	1,650	925	850	1,575	1,325	1,650	5,500	2,700	1,500	6,650	15–370	140–3,300	1,600–39,600	0–10	450–850	750–1,250	1,150–1,650	0–400
300	1,650	950	850	1,575	1,350	1,650	5,325	2,625	1,450	6,625	20–430	160–3,900	1,880–46,800	0–15	500–850	750–1,250	1,150–1,650	0–400
275	1,650	950	875	1,600	1,350	1,650	5,150	2,525	1,400	6,575	25–520	190–4,700	2,260–56,400	0–15	500–900	800–1,250	1,150–1,650	0–450
250	1,650	950	900	1,600	1,350	1,650	4,950	2,450	1,375	6,550	25–610	220–5,500	2,640–66,000	0–15	500–900	800–1,250	1,150–1,650	0–450
225	1,650	975	900	1,600	1,375	1,650	4,775	2,350	1,325	6,525	30–720	260–6,500	3,120–78,000	0–20	550–900	800–1,250	1,150–1,650	0–450
200	1,625	975	925	1,600	1,375	1,650	4,600	2,275	1,275	6,475	40–990	360–9,000	4,320–108,000	0–25	550–900	800–1,250	1,150–1,650	0–500
175	1,625	975	925	1,600	1,375	1,625	4,400	2,175	1,225	6,450	50–1,210	440–11,000	5,280–132,000	0–30	550–900	800–1,250	1,150–1,650	0–500
150	1,600	975	925	1,575	1,350	1,600	4,225	2,100	1,175	6,400	65–1,540	560–14,000	6,720–168,000	5–40	550–900	800–1,250	1,150–1,650	50–500
125	1,575	975	900	1,550	1,325	1,575	4,025	2,025	1,150	6,375								
100	1,525	950	850	1,500	1,300	1,525	3,850	1,925	1,100	6,350	FALLOUT GOVERNS							
75	1,450	925	825	1,475	1,250	1,475	3,675	1,850	1,050	6,300								
50	1,350	875	750	1,400	1,175	1,425	3,475	1,750	1,000	6,275								
25	1,225	825	675	1,325	1,100	1,375	3,300	1,675	950	6,225								
0	1,100	750	600	1,250	1,075	1,325	3,100	1,575	925	6,200								

Figure 10.6a continued.

[1]Tactical Bomber.

CASUALTY and DAMAGE Tables
Tactical Bomber
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
1,700		750	0	0		400			3,350	3,350	5,850	5,850	15,200	11,775	10,350	9,775	6,275	4,750	5,850	4,000	1,700
1,600	0	950	275	275		700			3,375	3,375	5,750	5,750	15,200	11,800	10,375	9,800	6,300	4,800	5,725	3,925	1,925
1,500	175	1,100	500	500	0	900			3,375	3,375	5,600	5,600	15,225	11,800	10,400	9,800	6,325	4,825	5,600	3,850	2,200
1,400	2,450	2,450	675	675	200	1,050			3,350	3,350	5,450	5,450	15,225	11,825	10,400	9,825	6,350	4,850	5,475	3,775	2,350
1,300	2,800	2,800	825	825	550	1,175		0	3,300	3,300	5,300	5,300	15,250	11,825	10,400	9,825	6,375	4,875	5,325	3,675	2,325
1,200	2,875	2,875	900	900	750	1,275		325	3,250	3,250	5,150	5,150	15,250	11,850	10,425	9,850	6,375	4,900	5,175	3,575	2,275
1,100	2,875	2,875	975	975	900	1,350		575	3,175	3,175	5,000	5,000	15,250	11,850	10,425	9,850	6,400	4,925	5,025	3,450	2,200
1,050	2,875	2,875	1,025	1,025	950	1,400		675	3,150	3,150	4,900	4,900	15,275	11,850	10,450	9,850	6,400	4,950	4,925	3,400	2,150
1,000	2,875	2,875	1,025	1,025	1,000	1,425	0	750	3,100	3,100	4,850	4,850	15,275	11,850	10,450	9,850	6,425	4,950	4,850	3,350	2,100
950	2,875	2,875	1,050	1,100	1,050	1,475	250	800	3,050	3,050	4,750	4,750	15,275	11,850	10,450	9,850	6,425	4,975	4,750	3,325	2,050
900	2,875	2,875	1,075	1,125	1,100	1,500	400	850	3,000	3,000	4,700	4,700	15,275	11,850	10,450	9,875	6,425	4,975	4,650	3,275	2,000
850	2,875	2,875	1,075	1,175	1,150	1,525	500	900	2,950	2,950	4,600	4,600	15,275	11,850	10,450	9,875	6,425	4,975	4,550	3,250	1,925
800	2,875	2,875	1,050	1,200	1,175	1,550	575	950	2,900	2,900	4,550	4,550	15,275	11,875	10,450	9,875	6,450	5,000	4,475	3,200	1,875
750	2,875	2,875	1,050	1,225	1,200	1,575	625	1,000	2,875	2,875	4,450	4,450	15,275	11,875	10,475	9,875	6,450	5,000	4,425	3,175	1,825
700	2,875	2,875	1,050	1,275	1,225	1,600	700	1,025	2,825	2,825	4,400	4,400	15,275	11,875	10,475	9,875	6,450	5,000	4,350	3,125	1,775
650	2,875	2,875	1,025	1,300	1,275	1,625	750	1,075	2,775	2,775	4,350	4,350	15,300	11,875	10,475	9,900	6,475	5,000	4,300	3,100	1,725
600	2,875	2,875	1,025	1,325	1,300	1,650	775	1,100	2,750	2,750	4,250	4,250	15,300	11,875	10,475	9,900	6,475	5,025	4,225	3,050	1,700
550	2,875	2,875	1,025	1,325	1,300	1,650	825	1,125	2,700	2,700	4,200	4,200	15,300	11,875	10,475	9,900	6,475	5,025	4,175	3,025	1,675
500	2,875	2,875	1,050	1,350	1,325	1,675	850	1,150	2,650	2,650	4,150	4,150	15,300	11,875	10,475	9,900	6,475	5,025	4,125	3,000	1,700
450	2,875	2,875	1,050	1,375	1,350	1,700	875	1,150	2,625	2,625	4,100	4,100	15,250	11,800	10,300	9,750	6,450	5,025	4,050	2,975	1,700
400	2,850	2,850	1,075	1,375	1,375	1,700	900	1,175	2,600	2,600	4,050	4,050	14,450	11,200	9,825	9,250	6,125	4,800	4,000	2,950	1,725
300	2,800	2,800	1,100	1,425	1,400	1,725	925	1,200	2,500	2,500	3,950	3,950	12,850	9,950	8,750	8,300	5,500	4,325	3,900	2,900	1,750
200	2,700	2,700	1,125	1,425	1,400	1,750	950	1,225	2,450	2,450	3,850	3,850	11,400	8,850	7,700	7,400	4,850	3,850	3,825	2,850	1,750
100	2,525	2,525	1,150	1,450	1,425	1,750	975	1,250	2,400	2,400	3,800	3,800	9,850	7,700	6,700	6,450	4,225	3,375	3,725	2,800	1,750
0	2,250	2,250	1,225	1,450	1,425	1,750	975	1,250	2,350	2,350	3,700	3,700	8,250	6,700	5,700	5,500	3,650	2,900	3,650	2,775	1,775

HOB_{fs} = 327m
Low HOB_{min} = 310m
High HOB_{min} = 702
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 10.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	*Mod dam wheeled vehs*	*Mod dam tks and arty*	*Severe dam sup deps*	*Severe dam radios and elec equip*	*Severe dam hwy and RR brgs*	*Severe dam float brgs*	*2d-degree burns*			*1 PSI over-pressure*	*Induced contamination*							
							Exposed skin	*2-layer summer uniform*	*4-layer winter uniform*		*Intensity at GZ (rad/hr)*				*2 rad/hr radius*			
											Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Type II*	*Type III*	*Type IV*
1,700				0			7,300	3,250	1,225	9,575			0–5				0–600	
1,600				250		0	7,325	3,300	1,350	9,525			0–10				0–850	
1,500				575		2,000	7,350	3,350	1,475	9,450			0–10				0–1,000	
1,400	0			825		2,250	7,375	3,375	1,575	9,375		0	0–20			0	0–1,150	
1,300	150			1,075	0	2,275	7,375	3,425	1,650	9,300		0–5	0–35			0–400	0–1,250	
1,200	450			1,275	1,625	2,275	7,400	3,450	1,725	9,225		0–5	5–60			0–650	400–1,350	
1,100	750		0	1,425	1,650	2,250	7,425	3,500	1,800	9,125		0–10	5–120			0–800	600–1,450	
1,050	950		150	1,500	1,650	2,250	7,425	3,500	1,825	9,075	0	0–15	10–160		0	0–850	700–1,500	
1,000	1,350	0	300	1,550	1,675	2,250	7,425	3,525	1,850	9,025	0–5	0–20	10–230		0–50	0–950	800–1,500	
950	1,575	100	425	1,600	1,675	2,250	7,450	3,525	1,875	8,975	0–5	0–30	15–320		0–300	0–1,000	850–1,550	
900	1,675	200	550	1,650	1,700	2,250	7,450	3,550	1,900	8,925	0–5	0–40	20–440		0–450	0–1,050	900–1,600	
850	1,750	300	650	1,700	1,725	2,225	7,450	3,550	1,925	8,875	0–10	5–55	25–630		0–550	50–1,050	950–1,600	
800	1,800	400	725	1,750	1,725	2,225	7,450	3,575	1,950	8,825	0–10	5–75	40–890		0–600	300–1,100	1,000–1,650	
750	1,875	475	800	1,800	1,725	2,225	7,450	3,575	1,950	8,775	0–15	5–110	55–1,320		0–700	400–1,150	1,050–1,650	
700	1,925	575	850	1,850	1,725	2,225	7,475	3,600	1,975	8,725	0–20	10–165	80–1,980		0–750	500–1,200	1,050–1,700	
650	1,975	675	900	1,875	1,750	2,225	7,475	3,600	2,000	8,675	0–30	15–260	125–3,120		0–800	550–1,200	1,100–1,700	
600	2,025	775	950	1,925	1,750	2,200	7,475	3,600	2,025	8,600	5–45	20–400	200–4,800	0	50–800	600–1,250	1,100–1,700	0
550	2,050	900	1,000	1,975	1,775	2,200	7,475	3,625	2,025	8,550	5–70	25–620	300–7,440	0–5	250–850	650–1,250	1,150–1,750	0–50
500	2,100	1,050	1,050	2,000	1,775	2,200	7,475	3,625	2,050	8,475	5–110	40–1,000	480–12,000	0–5	350–900	700–1,300	1,150–1,750	0–250
450	2,150	1,150	1,075	2,050	1,800	2,200	7,450	3,625	2,075	8,425	10–210	80–1,900	920–22,800	0–5	400–900	750–1,300	1,200–1,750	0–350
400	2,175	1,225	1,125	2,075	1,800	2,200	7,075	3,475	2,000	8,350	15–370	135–3,300	1,590–39,600	0–10	450–950	750–1,300	1,200–1,800	0–400
300	2,175	1,275	1,175	2,125	1,825	2,075	6,300	3,125	1,800	8,225	FALLOUT GOVERNS							
200	2,125	1,300	1,200	2,100	1,775	2,050	5,550	2,725	1,600	8,100								
100	1,950	1,225	1,100	1,950	1,700	1,925	4,775	2,450	1,425	7,950								
0	1,450	975	800	1,650	1,350	1,725	4,025	2,100	1,225	7,800								

Figure 10.6b continued.

[1]Tactical Bomber.

CASUALTY and DAMAGE Tables
Tactical Bomber

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200		0	275	275					4,650	4,650	7,800	7,800	21,700	17,700	15,400	14,200	9,100	7,100	7,800	5,350	2,550
2,100		400	525	525		0			4,650	4,650	7,800	7,650	21,700	17,700	15,500	14,300	9,200	7,100	7,700	5,275	2,825
2,000	0	750	750	750		200			4,650	4,650	7,550	7,550	21,700	17,700	15,500	14,300	8,200	7,100	7,575	5,200	3,050
1,900	3,550	3,550	925	925		650			4,600	4,600	7,400	7,400	21,700	17,700	15,500	14,300	9,200	7,200	7,425	5,125	3,175
1,800	4,000	4,000	1,075	1,075		900			4,500	4,500	7,250	7,250	21,700	17,700	15,500	14,300	9,200	7,200	7,275	5,025	3,175
1,700	4,100	4,100	1,175	1,175	0	1,075			4,450	4,450	7,100	7,100	21,700	17,700	15,500	14,300	9,200	7,200	7,150	4,925	3,125
1,600	4,150	4,150	1,250	1,250	400	1,225			4,350	4,350	6,900	6,900	21,700	17,700	15,500	14,300	9,300	7,200	6,975	4,825	3,075
1,500	4,150	4,150	1,325	1,325	675	1,325		0	4,250	4,250	6,750	6,750	21,700	17,700	15,500	14,300	9,300	7,200	6,825	4,700	3,000
1,400	4,150	4,150	1,400	1,400	875	1,450		325	4,150	4,150	6,600	6,600	21,700	17,700	15,500	14,300	9,300	7,300	6,650	4,600	2,900
1,300	4,150	4,150	1,425	1,425	1,000	1,525	0	625	4,100	4,100	6,450	6,450	21,700	17,700	15,500	14,300	9,300	7,300	6,450	4,500	2,800
1,200	4,150	4,150	1,450	1,450	1,125	1,600	275	800	4,000	4,000	6,300	6,300	21,800	17,700	15,600	14,400	9,300	7,300	6,275	4,425	2,675
1,100	4,150	4,150	1,450	1,450	1,225	1,675	400	925	3,900	3,900	6,200	6,200	21,800	17,800	15,600	14,400	9,300	7,300	6,100	4,350	2,550
1,050	4,150	4,150	1,425	1,425	1,275	1,725	475	1,000	3,850	3,850	6,100	6,100	21,800	17,800	15,600	14,400	9,300	7,300	6,050	4,325	2,500
1,000	4,150	4,150	1,425	1,425	1,300	1,750	575	1,050	3,850	3,850	6,050	6,050	21,800	17,800	15,600	14,400	9,300	7,300	5,975	4,275	2,450
950	4,150	4,150	1,400	1,400	1,350	1,775	650	1,075	3,800	3,800	6,000	6,000	21,800	17,800	15,600	14,400	9,400	7,300	5,900	4,250	2,400
900	4,150	4,150	1,400	1,400	1,375	1,800	725	1,125	3,750	3,750	5,900	5,900	21,800	17,800	15,600	14,400	9,400	7,300	5,850	4,200	2,375
850	4,150	4,150	1,400	1,400	1,400	1,825	775	1,175	3,700	3,700	5,850	5,850	21,800	17,800	15,600	14,400	9,400	7,400	5,775	4,175	2,325
800	4,150	4,150	1,375	1,450	1,450	1,850	825	1,200	3,700	3,700	5,800	5,800	21,800	17,800	15,600	14,400	9,400	7,400	5,725	4,150	2,300
750	4,150	4,150	1,375	1,475	1,475	1,850	875	1,225	3,650	3,650	5,750	5,750	21,800	17,800	15,600	14,400	9,400	7,400	5,675	4,125	2,275
700	4,150	4,150	1,350	1,500	1,500	1,875	925	1,250	3,600	3,600	5,650	5,650	21,800	17,800	15,600	14,400	9,400	7,400	5,600	4,075	2,275
650	4,150	4,150	1,350	1,525	1,600	1,900	950	1,300	3,550	3,550	5,600	5,600	21,800	17,800	15,400	14,300	9,400	7,300	5,550	4,050	2,250
600	4,150	4,150	1,350	1,550	1,700	1,925	975	1,325	3,550	3,550	5,550	5,550	20,800	17,200	15,000	13,900	9,100	7,100	5,500	4,025	2,250
550	4,125	4,125	1,350	1,550	1,750	1,925	1,025	1,350	3,500	3,500	5,500	5,500	19,400	16,500	14,400	13,400	8,700	6,800	5,450	4,000	2,250
500	4,100	4,100	1,350	1,575	1,800	1,950	1,050	1,350	3,450	3,450	5,450	5,450	18,500	15,900	13,900	12,800	8,400	6,600	5,400	3,975	2,250
400	4,025	4,025	1,400	1,600	1,825	1,975	1,075	1,375	3,400	3,400	5,300	5,300	17,600	14,700	12,800	11,800	7,800	6,100	5,300	3,925	2,275
300	3,925	3,925	1,450	1,625	1,850	2,000	1,125	1,400	3,350	3,350	5,200	5,200	16,000	13,500	11,700	10,800	7,100	5,600	5,200	3,875	2,300
200	3,775	3,775	1,500	1,650	1,825	2,000	1,125	1,425	3,300	3,300	5,100	5,100	14,400	12,200	10,600	9,800	6,500	5,200	5,125	3,825	2,325
100	3,550	3,550	1,575	1,650	1,700	2,000	1,150	1,450	3,250	3,250	5,000	5,000	13,000	11,000	9,500	8,800	5,900	4,700	5,050	3,800	2,375
0	3,250	3,250	1,675	1,675	1,650	2,000	1,150	1,450	3,250	3,250	4,450	4,450	11,500	9,700	8,500	7,900	5,300	4,200	4,975	3,775	2,400

HOB_{fs} = 445m
Low HOB_{min} = 420m
High HOB_{min} = 953m
HOB_{99} = HOB_{fs} + 3.5 PE_h m
HOB_{98} = HOB_{fs} + 3.0 PE_h m
HOB_{90} = HOB_{fs} + 1.9 PE_h m

Figure 10.6c.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled veh	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity of GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200				275		0	10,475	4,925	2,200	12,925								
2,100				625		3,325	10,500	4,975	2,300	12,875								
2,000				925		3,350	10,500	5,000	2,375	12,800			0				0	
1,900	0			1,200		3,350	10,525	5,050	2,450	12,725			0–5				0–450	
1,800	75			1,450	0	3,325	10,550	5,075	2,525	12,650			0–5				0–750	
1,700	425			1,675	2,150	3,300	10,575	5,125	2,600	12,575			0–10				0–1,000	
1,600	725			1,875	2,225	3,275	10,575	5,150	2,675	12,475		0	0–15			0	0–1,150	
1,500	1,050		0	2,050	2,250	3,250	10,600	5,175	2,725	12,400		0–5	0–25			0–50	0–1,250	
1,400	1,525	0	300	2,200	2,275	3,200	10,600	5,200	2,775	12,300		0–5	5–50			0–550	50–1,400	
1,300	2,250	125	600	2,325	2,300	3,175	10,625	5,225	2,825	12,200		0–10	5–85			0–750	550–1,500	
1,200	2,450	325	825	2,400	2,325	3,150	10,625	5,250	2,875	12,100	0	0–15	10–150		0	0–900	750–1,550	
1,100	2,600	525	1,025	2,525	2,350	3,125	10,650	5,275	2,900	12,000	0–5	0–25	15–290		0–350	0–1,050	900–1,650	
1,050	2,650	625	1,100	2,575	2,350	3,125	10,650	5,275	2,925	11,950	0–5	0–35	20–390		0–500	0–1,100	950–1,650	
1,000	2,700	750	1,175	2,600	2,350	3,100	10,650	5,300	2,950	11,900	0–10	5–50	25–570		0–600	50–1,150	1,000–1,700	
950	2,775	850	1,225	2,650	2,375	3,075	10,650	5,300	2,950	11,825	0–10	5–65	35–780		0–650	300–1,200	1,050–1,750	
900	2,825	950	1,275	2,700	2,375	3,050	10,650	5,325	2,975	11,775	0–10	5–90	45–1,080		0–750	450–1,200	1,100–1,750	
850	2,875	1,050	1,350	2,750	2,375	3,050	10,675	5,325	3,000	11,725	0–15	10–130	65–1,560		0–800	550–1,250	1,150–1,800	
800	2,925	1,150	1,400	2,800	2,400	3,025	10,675	5,325	3,000	11,675	0–25	10–185	90–2,220		0–850	600–1,300	1,150–1,800	
750	2,975	1,275	1,450	2,825	2,400	3,000	10,675	5,350	3,025	11,600	0–35	15–275	135–3,300	0	0–900	700–1,300	1,200–1,800	0
700	3,025	1,450	1,500	2,875	2,400	2,975	10,675	5,350	3,025	11,550	5–50	20–420	200–4,950	0–5	50–950	750–1,350	1,250–1,850	0–50
650	3,050	1,600	1,525	2,925	2,425	2,975	10,625	5,350	3,100	11,475	5–75	30–650	320–7,800	0–5	300–950	800–1,350	1,250–1,850	0–300
600	3,100	1,700	1,575	2,950	2,450	2,950	10,250	5,175	3,000	11,425	5–110	40–1,000	480–12,000	0–5	400–1,000	800–1,400	1,300–1,900	0–400
550	3,125	1,750	1,625	3,000	2,450	2,925	9,875	5,000	2,900	11,350	10–175	65–1,550	750–18,600	0–5	450–1,050	850–1,400	1,300–1,900	0–450
500	3,150	1,800	1,650	3,025	2,450	2,900	9,475	4,825	2,800	11,300	15–280	100–2,500	1,200–30,000	0–10	500–1,050	900–1,450	1,350–1,900	0–500
400	3,125	1,825	1,725	3,075	2,475	2,850	8,725	4,450	2,575	11,150	FALLOUT GOVERNS							
300	3,075	1,850	1,750	3,050	2,425	2,825	7,950	4,100	2,375	11,025								
200	2,975	1,825	1,675	2,925	2,375	2,750	7,200	3,750	2,175	10,875								
100	2,650	1,700	1,475	2,725	2,200	2,625	6,425	3,375	1,975	10,750								
0	2,100	1,400	1,150	2,400	1,900	2,500	5,675	3,025	1,775	10,600								

Figure 10.6c continued.

[1]Tactical Bomber.

CASUALTY and DAMAGE Tables
Tactical Bomber

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200	5,350	5,350	1,425	1,425		375			5,700	5,700	9,150	9,150	28,300	23,700	20,800	18,900	12,500	9,800	9,075	6,275	4,000
2,100	5,450	5,450	1,525	1,525		750			5,650	5,650	9,000	9,000	28,300	23,700	20,800	18,900	12,500	9,800	8,925	6,150	3,925
2,000	5,475	5,475	1,600	1,600		1,000			5,600	5,600	8,800	8,800	28,300	23,700	20,800	18,900	12,500	9,800	8,775	6,050	3,850
1,900	5,475	5,475	1,675	1,675	0	1,175			5,500	5,500	8,600	8,600	28,300	23,700	20,800	18,900	12,600	9,800	8,600	5,925	3,775
1,800	5,450	5,450	1,725	1,725	375	1,325			5,400	5,400	8,500	8,500	28,400	23,700	20,800	18,900	12,600	9,800	8,450	5,825	3,700
1,700	5,450	5,450	1,775	1,775	700	1,450	0	0	5,350	5,350	8,350	8,350	28,400	23,700	20,900	18,900	12,600	9,800	8,275	5,725	3,600
1,600	5,475	5,475	1,800	1,800	900	1,550	125	125	5,250	5,250	8,200	8,200	28,400	23,700	20,900	18,900	12,600	9,900	8,975	5,650	3,500
1,500	5,475	5,475	1,825	1,825	1,075	1,650	350	550	5,150	5,150	8,050	8,050	28,400	23,700	20,900	18,900	12,600	9,900	7,900	5,575	3,375
1,400	5,475	5,475	1,825	1,825	1,200	1,725	500	775	5,050	5,050	7,900	7,900	28,400	23,700	20,900	19,000	12,600	9,900	7,725	5,500	3,250
1,300	5,475	5,475	1,800	1,800	1,300	1,800	600	925	4,950	4,950	7,750	7,750	28,400	23,700	20,900	19,000	12,600	9,900	7,575	5,425	3,125
1,200	5,475	5,475	1,775	1,775	1,400	1,875	700	1,050	4,900	4,900	7,600	7,600	28,400	23,800	20,900	19,000	12,600	9,900	7,450	5,350	3,025
1,100	5,475	5,475	1,750	1,750	1,475	1,925	775	1,175	4,800	4,800	7,450	7,450	28,400	23,800	20,900	19,000	12,700	9,900	7,325	5,275	2,950
1,050	5,475	5,475	1,750	1,750	1,500	1,975	825	1,200	4,750	4,750	7,400	7,400	28,400	23,800	20,900	19,000	12,700	9,900	7,250	5,250	2,925
1,000	5,475	5,475	1,725	1,725	1,550	2,000	850	1,250	4,700	4,700	7,350	7,350	28,400	23,800	20,900	19,000	12,700	10,000	7,200	5,225	2,900
950	5,475	5,475	1,725	1,725	1,675	2,025	875	1,300	4,650	4,650	7,250	7,250	28,400	23,800	20,900	19,000	12,700	10,000	7,150	5,200	2,875
900	5,475	5,475	1,700	1,700	1,850	2,050	925	1,325	4,600	4,600	7,200	7,200	28,400	23,800	20,900	19,000	12,700	10,000	7,075	5,150	2,875
850	5,475	5,475	1,700	1,700	2,025	2,050	975	1,350	4,550	4,550	7,150	7,150	27,800	23,500	20,600	18,800	12,600	9,900	7,025	5,125	2,850
800	5,475	5,475	1,700	1,700	2,150	2,150	1,000	1,400	4,550	4,550	7,100	7,100	27,200	22,900	20,000	18,300	12,300	9,600	6,975	5,100	2,850
750	5,450	5,450	1,700	1,700	2,250	2,250	1,050	1,425	4,500	4,500	7,050	7,050	26,500	22,200	19,500	17,800	11,900	9,400	6,925	5,075	2,850
700	5,450	5,450	1,700	1,700	2,300	2,300	1,075	1,450	4,450	4,450	7,000	7,000	25,800	21,600	18,900	17,300	11,600	9,100	6,875	5,050	2,850
650	5,425	5,425	1,700	1,700	2,350	2,350	1,125	1,475	4,400	4,400	6,950	6,950	25,000	21,000	18,300	16,800	11,300	8,900	6,825	5,025	2,850
600	5,400	5,400	1,725	1,725	2,375	2,375	1,150	1,475	4,400	4,400	6,900	6,900	24,300	20,400	17,800	16,300	11,000	8,600	6,775	5,000	2,850
500	5,325	5,325	1,750	1,750	2,425	2,425	1,200	1,525	4,350	4,350	6,800	6,800	22,700	19,100	16,700	15,300	10,300	8,100	6,675	4,950	2,875
400	5,225	5,225	1,800	1,800	2,450	2,450	1,225	1,550	4,300	4,300	6,650	6,650	21,200	17,800	15,600	14,300	9,600	7,600	6,575	4,900	2,900
300	5,075	5,075	1,850	1,850	2,450	2,450	1,250	1,575	4,250	4,250	6,550	6,550	19,800	16,500	14,500	13,300	9,000	7,100	6,500	4,850	2,925
200	4,850	4,850	1,925	1,925	2,375	2,375	1,275	1,600	4,200	4,200	6,500	6,500	18,300	15,200	13,400	12,200	8,300	6,600	6,400	4,825	2,950
100	4,600	4,600	2,000	2,000	2,200	2,225	1,300	1,600	4,150	4,150	6,400	6,400	16,700	14,000	12,200	11,200	7,600	6,100	6,325	4,775	2,975
0	4,275	4,275	2,100	2,100	1,850	2,225	1,300	1,600	4,100	4,100	6,300	6,300	15,100	12,800	11,300	10,200	7,000	5,600	6,250	4,750	3,025

HOB_{fs} = 560
Low HOB_{min} = 530m
High HOB_{min} = 1200m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 10.6d.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (Rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200	375			2,075	0	4,275	13,925	6,875	3,600	15,875								
2,100	700			2,300	2,750	4,250	13,950	6,900	3,650	15,800			0				0	
2,000	1,000			2,500	2,775	4,200	13,950	6,950	3,700	15,725			0–5				0–450	
1,900	1,350		0	2,675	2,800	4,150	13,975	6,975	3,750	15,625			0–5				0–800	
1,800	1,775	0	275	2,850	2,825	4,100	13,975	7,000	3,800	15,525			0–10				0–1,000	
1,700	2,675	25	600	2,975	2,850	4,050	14,000	7,025	3,850	15,450		0	0–15			0	0–1,050	
1,600	3,075	225	875	3,100	2,875	4,000	14,000	7,050	3,900	15,350		0–5	0–30			0–400	0–1,300	
1,500	3,275	450	1,125	3,200	2,900	3,975	14,025	7,075	3,925	15,250		0–5	5–50			0–700	50–1,400	
1,400	3,400	675	1,325	3,300	2,925	3,925	14,025	7,075	3,975	15,125	0	0–10	5–100		0	0–900	550–1,500	
1,300	3,525	875	1,500	3,400	2,950	3,900	14,050	7,100	4,000	15,025	0–5	0–15	10–170		0–50	0–1,050	750–1,600	
1,200	3,650	1,100	1,600	3,500	2,950	3,875	14,050	7,125	4,025	14,925	0–5	0–25	15–300		0–500	0–1,150	900–1,700	
1,100	3,750	1,325	1,725	3,600	2,975	3,850	14,050	7,125	4,075	14,800	0–10	5–50	25–580		0–700	50–1,250	1,050–1,750	
1,050	3,800	1,425	1,800	3,650	2,975	3,825	14,050	7,150	4,075	14,750	0–10	5–65	35–780		0–800	350–13,00	1,100–1,800	
1,000	3,850	1,550	1,850	3,700	3,000	3,800	14,075	7,150	4,100	14,675	0–15	5–95	50–1,140		0–850	500–1,350	1,150–1,800	
950	3,900	1,675	1,900	3,725	3,000	3,775	14,075	7,150	4,100	14,625	0–15	10–130	65–1,560		0–900	600–1,400	1,200–1,850	
900	3,950	1,850	1,950	3,775	3,025	3,775	14,075	7,175	4,125	14,575	0–20	10–180	90–2,160		0–950	650–1,400	1,200–1,850	
850	4,000	2,025	2,000	3,825	3,025	3,750	13,800	7,075	4,125	14,500	0–30	15–260	125–3,120		0–1,000	700–1,450	1,250–1,900	
800	4,050	2,150	2,050	3,875	3,050	3,750	13,400	6,900	4,025	14,450	5–45	15–370	180–4,440	0	50–1,050	800–1,450	1,300–1,900	0
750	4,100	2,250	2,075	3,900	3,050	3,725	13,025	6,700	3,925	14,375	5–65	25–550	270–6,600	0–5	300–1,100	850–1,500	1,300–1,950	0–50
700	4,125	2,300	2,125	3,950	3,050	3,700	12,625	6,525	3,825	14,325	5–95	35–835	400–9,900	0–5	400–1,100	900–1,500	1,350–1,950	0–300
650	4,125	2,350	2,175	3,975	3,075	3,675	12,225	6,350	3,725	14,250	10–145	55–1,300	63 0–15,600	0–5	500–1,150	900–1,550	1,350–1,950	0–400
600	4,150	2,375	2,200	4,000	3,075	3,650	11,850	6,150	3,625	14,175	10–220	80–2,000	960–24,000	0–10	550–12,00	950–1,550	1,400–2,000	0–450
500	4,125	2,425	2,275	4,050	3,075	3,625	11,050	5,775	3,400	14,050	FALLOUT GOVERNS							
400	4,075	2,450	2,325	4,025	3,100	3,575	10,275	5,400	3,200	13,925								
300	4,000	2,450	2,275	3,950	3,075	3,475	9,475	5,050	3,000	13,775								
200	3,825	2,375	2,125	3,975	3,050	3,400	8,700	4,675	2,800	13,625								
100	3,350	2,200	1,875	3,500	2,825	3,275	7,925	4,300	2,575	13,500								
0	2,775	1,850	1,500	3,150	2,525	3,200	7,125	3,925	2,375	13,350								

Figure 10.6d continued.

[1]Tactical Bomber.

CASUALTY and DAMAGE Tables
Tactical Bomber

All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200	7,200	7,200	2,225	2,225		1,150			6,700	6,700	10,450	10,450	37,000	31,400	27,300	24,600	16,600	13,400	10,525	7,275	4,600
2,100	7,200	7,200	2,250	2,250	0	1,300	0	0	6,600	6,600	10,300	10,300	37,000	31,400	27,300	24,600	16,600	13,400	10,325	7,200	4,500
2,000	7,225	7,225	2,275	2,275	500	1,450	200	200	6,550	6,550	10,150	10,150	37,000	31,400	27,300	24,600	16,600	13,400	10,150	7,100	4,375
1,900	7,225	7,225	2,300	2,300	800	1,575	425	425	6,450	6,450	10,000	10,000	37,000	31,400	27,300	24,600	16,600	13,500	9,975	7,025	4,250
1,800	7,225	7,225	2,300	2,300	1,000	1,700	600	600	6,400	6,400	9,850	9,850	37,000	31,400	27,300	24,700	16,600	13,500	9,775	6,950	4,125
1,700	7,225	7,225	2,275	2,275	1,175	1,800	700	700	6,300	6,300	9,700	9,700	37,000	31,500	27,400	24,700	16,600	13,500	9,625	6,875	4,000
1,600	7,225	7,225	2,250	2,250	1,300	1,875	800	800	6,200	6,200	9,550	9,550	37,000	31,500	27,400	24,700	16,600	13,500	9,500	6,800	3,900
1,500	7,225	7,225	2,225	2,225	1,475	1,975	900	975	6,150	6,150	9,400	9,400	37,000	31,500	27,400	24,700	16,600	13,500	9,375	6,725	3,825
1,400	7,225	7,225	2,225	2,225	1,700	2,050	975	1,125	6,050	6,050	9,250	9,250	37,000	31,500	27,400	24,700	16,600	13,500	9,250	6,675	3,750
1,300	7,225	7,225	2,200	2,200	1,950	2,100	1,050	1,225	5,950	5,950	9,100	9,100	37,000	31,500	27,400	24,700	16,700	13,500	9,125	6,600	3,675
1,200	7,225	7,225	2,175	2,175	2,200	2,200	1,100	1,325	5,900	5,900	8,950	8,950	37,000	31,500	27,400	24,700	16,700	13,500	9,000	6,550	3,625
1,100	7,225	7,225	2,150	2,150	2,550	2,550	1,150	1,425	5,800	5,800	8,800	8,800	36,300	30,900	27,000	24,200	16,300	13,300	8,900	6,475	3,600
1,050	7,225	7,225	2,125	2,125	2,700	2,700	1,175	1,450	5,800	5,800	8,700	8,700	35,500	30,200	26,500	23,700	16,000	13,000	8,850	6,450	3,600
1,000	7,225	7,225	2,125	2,125	2,850	2,850	1,175	1,500	5,750	5,750	8,650	8,650	34,800	29,600	26,000	23,200	15,700	12,700	8,775	6,425	3,575
950	7,200	7,200	2,125	2,125	2,950	2,950	1,200	1,525	5,700	5,700	8,550	8,550	34,000	29,000	25,400	22,700	15,400	12,500	8,725	6,400	3,575
900	7,175	7,175	2,150	2,150	3,025	3,025	1,225	1,550	5,650	5,650	8,450	8,450	33,300	28,300	24,900	22,200	15,000	12,200	8,675	6,375	3,575
850	7,175	7,175	2,150	2,150	3,075	3,075	1,225	1,575	5,600	5,600	8,400	8,400	32,600	27,700	24,300	21,700	14,600	11,900	8,625	6,350	3,575
800	7,150	7,150	2,150	2,150	3,125	3,125	1,250	1,600	5,600	5,600	8,350	8,350	31,800	27,000	23,800	21,200	14,300	11,600	8,575	6,325	3,575
750	7,100	7,100	2,175	2,175	3,150	3,150	1,275	1,625	5,550	5,550	8,250	8,250	31,100	26,400	23,300	20,700	14,000	11,300	8,525	6,275	3,600
700	7,075	7,075	2,175	2,175	3,175	3,175	1,275	1,650	5,500	5,500	8,200	8,200	30,400	25,700	22,800	20,200	13,700	11,100	8,475	6,250	3,600
650	7,025	7,025	2,200	2,200	3,200	3,200	1,300	1,675	5,450	5,450	8,150	8,150	29,600	25,100	22,300	19,800	13,400	10,700	8,425	6,250	3,625
600	6,975	6,975	2,225	2,225	3,200	3,200	1,325	1,700	5,450	5,450	8,050	8,050	28,900	24,400	21,700	19,300	13,000	10,500	8,375	6,225	3,625
500	6,875	6,875	2,275	2,275	3,225	3,225	1,375	1,725	5,350	5,350	7,950	7,950	27,400	23,200	20,700	18,300	12,400	10,000	8,275	6,175	3,650
400	6,725	6,725	2,325	2,325	3,250	3,250	1,400	1,750	5,300	5,300	7,850	7,850	25,900	21,900	19,600	17,300	11,700	9,400	8,200	6,125	3,675
300	6,525	6,525	2,400	2,400	3,175	3,175	1,425	1,775	5,200	5,200	7,750	7,750	24,500	20,600	18,500	16,400	11,100	8,900	8,100	6,075	3,700
200	6,275	6,275	2,475	2,475	3,050	3,050	1,450	1,775	5,150	5,150	7,650	7,650	22,200	19,300	17,400	15,400	10,400	8,400	8,025	6,025	3,750
100	5,975	5,975	2,550	2,550	2,825	2,825	1,450	1,800	5,100	5,100	7,550	7,550	21,500	18,000	16,400	14,500	9,700	7,800	7,950	6,000	3,775
0	5,650	5,650	2,650	2,650	2,450	2,475	1,450	1,800	5,050	5,050	7,500	7,500	20,100	16,700	15,300	13,500	9,200	7,300	7,875	5,975	3,800

HOB_{fs} = 706m
Low HOB_{min} = 668m
High HOB_{min} = 1,512m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 10.6e.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HQB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200	2,875	0	600	3,850	3,500	5,075	18,475	9,350	5,125	19,500			0				0	
2,100	3,825	125	925	3,975	3,525	5,050	18,475	9,375	5,175	19,400			0–5				0–450	
2,000	4,075	350	1,200	4,100	3,550	5,000	18,500	9,400	5,200	19,325			0–5				0–800	
1,900	4,300	575	1,450	4,200	3,575	4,975	18,500	9,400	5,250	19,200			0–10				0–1,000	
1,800	4,425	800	1,675	4,325	3,600	4,925	18,525	9,425	5,275	19,100		0	0–20			0	0–1,200	
1,700	4,575	1,025	1,875	4,425	3,625	4,900	18,525	9,450	5,325	19,000		0–5	0–30			0–400	0–1,350	
1,600	4,700	1,250	2,025	4,525	3,625	4,875	18,525	9,475	5,350	18,900		0–5	5–55			0–700	400–1,450	
1,500	4,825	1,475	2,150	4,650	3,650	4,850	18,550	9,475	5,375	18,775		0–10	5–100			0–900	700–1,550	
1,400	4,950	1,700	2,275	4,750	3,675	4,800	18,550	9,500	5,400	18,675	0	0–20	10–190		0	0–1,050	900–1,650	
1,300	5,050	1,950	2,400	4,825	3,700	4,775	18,550	9,500	5,425	18,550	0–5	0–30	15–340		0–50	0–1,200	1,050–1,750	
1,200	5,150	2,200	2,500	4,925	3,725	4,750	18,550	9,525	5,450	18,425	0–5	5–50	25–600		0–750	50–1,300	1,150–1,800	
1,100	5,250	2,550	2,600	5,025	3,750	4,700	18,025	9,325	5,425	18,300	0–10	5–100	50–1,160		0–900	500–1,400	1,250–1,850	
1,050	5,300	2,700	2,650	5,075	3,750	4,675	17,625	9,125	5,325	18,250	0–15	10–130	65–1,560		0–950	600–1,400	1,300–1,900	
1,000	5,350	2,850	2,700	5,125	3,775	4,650	17,225	8,925	5,225	18,175	0–25	10–190	95–2,280		0–1,000	700–1,450	1,350–1,950	
950	5,400	2,950	2,750	5,150	3,775	4,650	16,825	8,750	5,125	18,125	0–30	15–260	125–3,120		0–1,050	750–1,500	1,400–1,950	
900	5,425	3,025	2,800	5,200	3,800	4,625	16,400	8,550	5,000	18,050	5–40	15–360	175–4,320		50–1,100	800–1,550	1,400–2,000	
850	5,450	3,075	2,825	5,225	3,800	4,600	16,000	8,350	4,900	18,000	5–60	25–520	250–6,240	0	350–1,150	850–1,550	1,450–2,000	0
800	5,475	3,125	2,875	5,275	3,825	4,575	15,600	8,150	4,800	17,925	5–85	30–740	360–8,880	0–5	450–1,600	900–1,600	1,450–2,000	0–50
750	5,475	3,150	2,900	5,300	3,825	4,575	15,200	7,950	4,700	17,875	5–125	45–1,100	530–13,200	0–5	550–1,200	950–1,600	1,500–2,050	0–300
700	5,475	3,175	2,950	5,325	3,850	4,550	14,800	7,750	4,575	17,800	FALLOUT GOVERNS							
650	5,450	3,200	2,975	5,350	3,850	4,525	14,400	7,575	4,475	17,725								
600	5,450	3,200	3,000	5,350	3,850	4,475	14,000	7,375	4,375	17,675								
500	5,375	3,225	3,050	5,325	3,850	4,450	13,175	6,975	4,175	17,525								
400	5,300	3,250	3,025	5,225	3,825	4,400	12,375	6,600	3,950	17,400								
300	5,175	3,175	2,900	5,075	3,750	4,300	11,575	6,200	3,750	17,250								
200	4,825	3,050	2,700	4,850	3,625	4,175	10,750	5,800	3,525	17,100								
100	4,275	2,825	2,400	4,525	3,425	4,075	9,950	5,425	3,325	16,950								
0	3,675	2,450	2,000	4,150	3,200	3,925	9,150	5,025	3,100	16,800								

Figure 10.6e continued.

[1]Tactical Bomber.

CASUALTY and DAMAGE Tables
Tactical Bomber
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,500	10,425	10,425	3,125	3,125	1,025	1,475	725	725	8,700	8,700	13,600	13,600	54,500	45,600	38,400	35,500	25,000	19,900	13,350	9,475	5,675
2,400	10,425	10,425	3,100	3,100	1,250	1,625	850	850	8,600	8,600	13,450	13,450	54,500	45,700	38,400	35,500	25,000	19,900	13,200	9,400	5,550
2,300	10,425	10,425	3,075	3,075	1,500	1,750	950	950	8,500	8,500	13,300	13,300	54,500	45,700	38,400	35,500	25,000	20,000	13,075	9,325	5,425
2,200	10,425	10,425	3,075	3,075	1,750	1,875	1,050	1,050	8,400	8,400	13,200	13,200	54,500	45,700	38,400	35,500	25,000	20,000	12,925	9,250	5,325
2,100	10,425	10,425	3,050	3,050	1,975	2,000	1,150	1,150	8,350	8,350	13,050	13,050	54,500	45,700	38,400	35,500	25,000	20,000	12,800	9,175	5,225
2,000	10,425	10,425	3,025	3,025	2,225	2,225	1,250	1,250	8,250	8,250	12,900	12,900	54,500	45,700	38,400	35,500	25,000	20,000	12,675	9,125	5,150
1,900	10,425	10,425	3,000	3,000	2,475	2,475	1,325	1,325	8,200	8,200	12,750	12,750	54,500	45,700	38,400	35,500	25,000	20,000	12,550	9,050	5,075
1,800	10,425	10,425	2,975	2,975	2,725	2,725	1,400	1,400	8,100	8,100	12,650	12,650	54,500	45,700	38,400	35,600	25,000	20,000	12,425	8,975	5,025
1,700	10,425	10,425	2,950	2,950	2,950	2,950	1,450	1,450	8,050	8,050	12,500	12,500	54,500	45,700	38,400	35,600	25,000	20,000	12,300	8,925	4,950
1,600	10,425	10,425	2,925	2,925	3,275	3,275	1,500	1,500	8,000	8,000	12,400	12,400	53,700	45,300	37,900	35,100	24,600	19,800	12,175	8,850	4,925
1,500	10,425	10,425	2,925	2,925	3,650	3,650	1,550	1,550	7,900	7,900	12,300	12,300	52,200	44,000	36,900	34,000	23,900	19,200	12,075	8,800	4,875
1,400	10,425	10,425	2,875	2,875	4,000	4,000	1,600	1,600	7,850	7,850	12,200	12,200	50,600	42,700	35,900	33,000	23,200	18,600	11,950	8,750	4,875
1,300	10,400	10,400	2,900	2,900	4,250	4,250	1,625	1,675	7,800	7,800	12,050	12,050	49,000	41,400	34,800	32,100	22,500	18,000	11,850	8,675	4,850
1,200	10,375	10,375	2,900	2,900	4,400	4,400	1,650	1,750	7,750	7,750	11,950	11,950	47,500	40,000	33,800	31,100	21,800	17,500	11,750	8,625	4,850
1,100	10,300	10,300	2,925	2,925	4,500	4,500	1,700	1,825	7,700	7,700	11,850	11,850	46,000	38,900	32,800	30,100	21,100	17,000	11,650	8,575	4,850
1,050	10,275	10,275	2,950	2,950	4,525	4,525	1,700	1,850	7,650	7,650	11,800	11,800	45,200	38,200	32,300	29,600	20,700	16,700	11,600	8,550	4,875
1,000	10,250	10,250	2,950	2,950	4,550	4,550	1,725	1,875	7,600	7,600	11,750	11,750	44,400	37,600	31,800	29,100	20,400	16,400	11,550	8,525	4,875
950	10,200	10,200	2,975	2,975	4,575	4,575	1,725	1,900	7,600	7,600	11,700	11,700	53,600	36,800	31,200	28,600	20,000	16,100	11,500	8,500	4,900
900	10,150	10,150	2,975	2,975	4,600	4,600	1,750	1,925	7,550	7,550	11,650	11,650	42,900	36,200	30,700	28,100	19,700	15,800	11,450	8,475	4,900
850	10,100	10,100	3,000	3,000	4,625	4,625	1,750	1,950	7,500	7,500	11,600	11,600	42,100	35,600	30,200	27,600	19,300	15,500	11,400	8,450	4,925
800	10,050	10,050	3,025	3,025	4,625	4,625	1,775	1,975	7,500	7,500	11,550	11,550	41,400	35,000	29,700	27,100	19,000	15,200	11,350	8,425	4,925
750	10,000	10,000	3,050	3,050	4,650	4,650	1,775	2,000	7,450	7,450	11,500	11,500	40,600	34,400	29,200	26,600	18,600	14,700	11,300	8,400	4,950
700	9,950	9,950	3,075	3,075	4,650	4,650	1,800	2,000	7,450	7,450	11,450	11,450	39,800	33,700	28,700	26,100	18,300	14,400	11,250	8,375	4,950
600	9,800	9,800	3,125	3,125	4,675	4,675	1,825	2,050	7,350	7,350	11,350	11,350	38,200	32,400	27,700	25,100	17,600	14,100	11,175	8,325	4,975
500	9,625	9,625	3,200	3,200	4,675	4,675	1,825	2,075	7,300	7,300	11,250	11,250	36,700	31,100	26,600	24,100	16,900	13,500	11,075	8,300	5,000
400	9,400	9,400	3,250	3,250	4,575	4,575	1,850	2,100	7,250	7,250	11,150	11,150	35,200	29,800	25,600	23,100	16,200	13,000	11,000	8,250	5,050
300	9,125	9,125	3,325	3,325	4,450	4,450	1,875	2,100	7,200	7,200	11,050	11,050	33,600	28,500	24,600	22,100	15,500	12,400	10,925	8,225	5,075
200	8,850	8,850	3,425	3,425	4,250	4,250	1,875	2,100	7,150	7,150	10,950	10,950	32,100	27,200	23,600	21,100	14,800	11,900	10,850	8,175	5,100
100	8,500	8,500	3,500	3,500	3,925	3,925	1,900	2,125	7,100	7,100	10,850	10,850	30,600	26,000	22,500	20,200	14,200	11,300	10,775	8,150	5,125
0	8,125	8,125	3,600	3,600	3,525	3,525	1,900	2,125	7,050	7,050	10,750	10,750	29,200	24,700	21,500	19,200	13,600	10,800	10,700	8,100	5,150

HOB_{fs} = 958m
Low HOB_{min} = 905m
High HOB_{min} = 2,052m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 10.6f.

All figures in meters

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and Arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d-degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (Rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,500	6,325	1,025	2,300	6,150	5,075	7,375	26,375	13,275	7,850	26,000								
2,400	6,450	1,250	2,500	6,275	5,075	7,350	26,400	13,275	7,875	25,875			0				0	
2,300	6,600	1,500	2,700	6,400	5,100	7,300	26,400	13,300	7,900	25,775			0–5				0–50	
2,200	6,750	1,750	2,875	6,500	5,125	7,250	26,400	13,325	7,925	25,675			0–5				0–700	
2,100	6,875	1,975	3,025	6,625	5,150	7,200	26,425	13,325	7,950	25,550			0–10				0–950	
2,000	7,000	2,225	3,150	6,725	5,175	7,150	26,425	13,350	7,975	25,450		0	0–15			0	0–1,150	
1,900	7,125	2,475	3,275	6,825	5,175	7,100	26,425	13,375	8,000	25,325		0–5	0–25			0–50	0–1,300	
1,800	7,250	2,725	3,400	6,950	5,200	7,050	26,450	13,375	8,025	25,225		0–5	0–40			0–600	0–1,450	
1,700	7,375	2,950	3,525	7,050	5,200	7,000	26,450	13,400	8,050	25,100		0–10	5–75			0–850	400–1,550	
1,600	7,475	3,275	3,650	7,150	5,225	6,950	25,775	13,150	8,025	24,975	0	0–15	10–130		0	0–1,050	700–1,700	
1,500	7,575	3,650	3,750	7,250	5,250	6,900	24,950	12,775	7,800	24,850	0–5	0–25	10–250		0–400	0–1,200	900–1,750	
1,400	7,675	4,000	3,850	7,350	5,250	6,850	24,150	12,375	7,575	24,725	0–5	0–40	20–460		0–700	0–1,300	1,050–1,850	
1,300	7,775	4,250	3,950	7,425	5,275	6,800	23,350	12,000	7,350	24,600	0–10	5–70	35–840		0–850	400–1,400	1,200–1,900	
1,200	7,850	4,400	4,050	7,525	5,275	6,750	22,525	11,600	7,125	24,475	0–15	5–125	60–1,500		0–1,000	650–1,500	1,300–2,000	
1,100	7,875	4,500	4,125	7,575	5,300	6,700	21,725	11,225	6,900	24,350	0–30	10–240	120–2,880		0–1,100	800–1,600	1,400–2,050	
1,050	7,900	4,525	4,175	7,625	5,300	6,675	21,300	11,025	6,800	24,300	0–40	15–325	160–3,900		0–1,150	850–1,600	1,400–2,050	
1,000	7,900	4,550	4,200	7,650	5,325	6,650	20,900	10,825	6,675	24,225	5–55	20–475	230–5,700	0	50–1,200	950–1,650	1,450–2,100	0
950	7,900	4,575	4,250	7,675	5,325	6,625	20,500	10,625	6,575	24,150	FALLOUT GOVERNS							
900	7,875	4,600	4,275	7,700	5,350	6,575	20,100	10,450	6,450	24,100								
850	7,875	4,625	4,325	7,725	5,350	6,550	19,700	10,250	6,350	24,025								
800	7,850	4,625	4,350	7,725	5,350	6,525	19,275	10,050	6,225	23,950								
750	7,800	4,650	4,375	7,700	5,350	6,500	18,875	9,850	6,125	23,900								
700	7,775	4,650	4,400	7,700	5,375	6,500	18,475	9,675	6,000	23,825								
600	7,700	4,675	4,400	7,625	5,375	6,450	17,675	9,275	5,775	23,675								
500	7,600	4,675	4,325	7,500	5,350	6,400	16,850	8,900	5,500	23,550								
400	7,425	4,575	4,175	7,300	5,250	6,325	16,050	8,500	5,325	23,400								
300	7,100	4,450	3,950	7,050	5,125	6,250	15,225	8,125	5,100	23,250								
200	6,575	4,250	3,675	6,775	4,975	6,150	14,425	7,725	4,875	23,100								
100	5,925	3,925	3,300	6,400	4,700	6,075	13,600	7,350	4,650	22,975								
0	5,300	3,525	2,875	6,000	3,975	5,975	12,800	6,950	4,425	22,825								

Figure 10.6f continued.

[1]Tactical Bomber.

CONTINGENT EFFECTS Tables
Tactical Bomber

INDUCED RADIATION IN SOILS (See note 1.)
Fallout activity is not significant.
Impact burst not tabulated, fallout governs.

Yield KT	*HOB*	*Estimated radii in meters of 2 rad/hr contour of induced radiation, 1 hour after burst.*				*Estimated induced radiation intensity, 1 hour after burst, at GZ. In rad/hr*			
		Soil type I (Liberia, Africa)	*Soil type II (Nevada desert)*	*Soil type III (lava clay, Hawaii)*	*Soil type IV (beach sand, Pensacola, Fla)*	*Soil type I*	*Soil type II*	*Soil type III*	*Soil type IV*
HOTEL/100	Low	500–850	750–1,250	1,150–1,650	0–400	20–430	160–3,900	1,880–46,800	0–15
	High	0–700	500–1,100	1,000–1,550	0	0–20	10–160	90–1,920	0
INDIA/200	Low	400–900	750–1,300	1,200–1,750	0–350	10–210	80–1,900	920–22,800	0–5
	High	0–700	400–1,150	1,050–1,650	0	0–15	5–110	55–1,320	0
JULIETT/500	Low	400–1,000	800–1,400	1,300–1,900	0–400	5–110	40–1,000	480–12,000	0–5
	High	0–650	300–1,200	1,050–1,750	0	0–10	5–65	35–780	0
KILO/1,000	Low	400–1,100	900–1,500	1,350–1,950	0–300	5–95	35–825	400–9,900	0–5
	High	0–500	0–1,150	900–1,700	0	0–5	0–25	15–300	0
LIMA/2,000	Low	350–1,150	850–1,550	1,450–2,000	0	5–60	25–520	250–6,240	0
	High	0	0–1,050	900–1,650	0	0	0–20	10–190	0
MIKE/5,000	Low	0–1,100	800–1,600	1,400–2,050	0	0–30	10–240	120–2,880	0
	High	0	0–50	0–1,300	0	0	0–5	0–25	0
	Low								
	High								
	Low								
	High								

NOTE: For description of chemical composition and effects of variationa in chemical composition in soil typea, see FM 101-31-1, app III, annex F.

Figure 10.7a.

TREE BLOWDOWN (See note.)
All distances in meters

Yield KT	*OBSTACLES TO MOVEMENT*							*CASUALTIES TO EXPOSED PERSONNEL*		
	Foot and wheeled vehicle movement				*Tracked vehicle movement*					
	Type I	*Type II*	*Type III*	*Type IV*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*	*Type I*	*Types II, IVa(d)*	*Types III, IVa(f)*
HOTEL/100	2,000	2,600	3,100	5,000	2,000	2,600	3,100	1,700	2,000	2,250
INDIA/200	2,450	3,200	3,800	6,200	2,450	3,200	3,800	2,000	2,400	2,700
JULIETT/500	3,750	4,800	6,000	9,400	3,750	4,800	6,000	3,150	3,600	4,200
KILO/1,000	5,000	6,200	7,700	12,000	5,000	6,200	7,700	4,050	4,600	5,200
LIMA/2,000	5,800	7,400	9,600	14,500	5,800	7,400	9,600	4,600	5,200	6,500
MIKE/5,000	8,600	12,000	14,500	22,000	8,600	12,000	14,500	7,000	8,000	9,600

NOTE: These radii apply to all HOB. For general description of foreat atand types and criteria, aee FM 101-31-1, app III, annex F.

Figure 10.7b.

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	*AIRCRAFT SAFETY RADII-meters (See note 2.)*		
	Light fixed wing	*Recon and obsn hel*	*Transport and util hel*
HOTEL/100	22,000	21,000	18,000
INDIA/200	27,000	26,000	23,000
JULIETT/500	35,000	34,000	31,000
KILO/1,000	43,000	42,000	40,000
LIMA/2,000	51,000	50,000	47,000
MIKE/5,000	62,000	61,000	58,000

NOTES: 1. Theae radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer diatance has been added to these radii of safety.

Figure 10.7c.

FIRE AREAS (See note.)

Yield KT	*HOB*	*Expected radii for ignition of wildland fuels during fire season—meters*							
		Dry climate (25 percent relative humidity)				*Damp climate (75 percent relative humidity)*			
		Class I	*Class II*	*Class III*	*Class IV*	*Class I*	*Class II*	*Class III*	*Class IV*
HOTEL/100	Air	6,400	5,900	5,400	4,400	5,900	5,900	4,800	3,700
	Impact	3,500	3,200	3,000	2,500	3,200	3,200	2,800	2,100
INDIA/200	Air	8,300	7,700	7,000	5,800	7,700	7,700	6,400	4,800
	Impact	4,500	4,200	3,800	3,200	4,200	4,200	3,500	2,700
JULIETT/500	Air	11,900	11,000	9,900	8,200	11,000	11,000	9,200	6,900
	Impact	6,200	5,700	5,300	4,400	5,700	5,700	4,900	3,800
KILO/1,000	Air	15,600	14,200	12,900	10,700	14,200	14,200	11,900	8,900
	Impact	7,800	7,200	6,600	5,600	7,200	7,200	6,200	4,800
LIMA/2,000	Air	20,600	18,800	17,000	14,000	18,800	18,800	15,600	11,800
	Impact	10,100	9,400	8,600	7,100	9,400	9,400	7,900	6,100
MIKE/5,000	Air	29,300	26,700	23,300	20,200	26,700	26,700	22,500	16,800
	Impact	14,000	12,900	11,800	9,900	12,900	12,900	10,900	8,500

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 10.7d.

CRATER DIMENSIONS (See note.)

Yield KT	*Approx crater dimensions for various soil types—meters*							
	Hard rock (granite and sandstone)		*Soft rock (dry soil or soft rock)*		*Saturated soil (water slowly fills crater)*		*Saturated soil (water rapidly fills crater)*	
	Radius	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*
HOTEL/100	73	17	91	21	136	31	182	15
INDIA/200	92	20	115	24	172	36	229	17
JULIETT/500	124	25	155	31	233	46	310	22
KILO/1,000	156	29	196	36	293	54	391	26
LIMA/2,000	197	35	246	43	369	65	492	30
MIKE/5,000	267	43	334	54	501	81	668	38

NOTE: Based on contact surface burst, for more detailed anslysis, see engineer element.

Figure 10.7e.

[1]Tactical Bomber.

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CHAPTER 11
STRATEGIC BOMBER

11.1 GENERAL

a. Orientation. This chapter contains employment data for the nuclear bombs delivered by strategic bombers.

b. Weapon characteristics.

(1) *Yield.* The bombs carried by strategic bombers have yields of Kilo/1 MT, Lima/2 MT, and Mike/5 MT.

(2) *Fuzing.*

(*a*) The fuzing for these bombs provides airburst and impact fuzing options. The airburst option is radar-fuzed and can be set for either high or low airburst; these are the only heights of burst available. Contact backup is provided in all cases where the airburst option is selected.

(*b*) The fuzes are preset at the following heights of burst:

Warhead section	*HOB option*	*HOB (meters)*	PE_h *(meters)*
Kilo/1 MT	low	1,260	200
	high	1,750	
Lima/2 MT	low	1,406	200
	high	2,023	
Mike/5 MT	low	1,658	200
	high	2,496	

(3) *Preinitiation.* See figure 13.7 for the necessary considerations where a multiple weapon attack is desired.

c. Employment considerations.

(1) *Range.* The radius of action for strategic bombers varies depending on the type bomber used. For training purposes only, a maximum radius of action of 2,400 kilometers is assumed. In an actual situation, the delivery unit concerned is consulted to obtain this information.

(2) *Tactical system accuracy.* Horizontal dispersion is dependent on the proficiency of the aircraft pilot and crew, and the technique of delivery. The CEP used in this chapter for delivery by strategic bomber is an average value for well-trained crews. A CEP of 2,000 meters has been used in the computation of the weapon selection tables. The vertical probable error is 200 meters.

(3) *Response time.* The times shown below can be used as a basis for general tactical planning. *For detailed tactical planning, the response times should be the actual times obtained from the delivery unit concerned.* The times listed below are average times only for normal operations after alert. Such factors as distance and routes to the bomb storage areas, type of transportation, type of ground handling equipment, and enemy action influence bomb preparation and loading.

Situation	*Time (minutes)*	*Remarks*
I[1]	360	(*a*) In both situations, flight time must be added to the times shown. (*b*) Time may vary in situation I as distance from storage area to aircraft varies.
II[2]	30	

[1]Situation I (ready)—bomb is partially assembled and tested to allow shortest assembly time. The bomb is located in a storage area.

[2]Situation II (strike)—bomb is assembled and loaded on the aircraft. The aircraft and crew are on ground alert.

(4) *Special considerations.* The target analyst coordinates closely with the liaison officer representing the delivery unit concerned. The analyst needs to know the CEP involved, because CEP varies depending on the crew assigned and the delivery technique to be used to attack the target. (See para 11.1c(2), above, for assumption made for the weapon selection tables that follow.) When an airburst fuzing option is selected, the fire mission states the desired radar HOB setting as high or low. When an impact fuzing option is selected, the fire mission specifies HOB impact. When employing these weapons, a fallout prediction is always made.

STRAT
BMR 1

[1]Strategic Bomber.

EXPOSED Personnel Targets
Strategic Bomber

Yield	HOB option (HOB-meters)	Minimum safe distance (negligible risk, Unit Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage, the second figure is the average coverage.																Probable minimum R_D (meters)		Offset distance d_o
			PROMPT CASUALTIES								DELAYED CASUALTIES										
			Target radius (meters)								Target radius (meters)										
KT	(See note)	(meters)	4,000	6,000	8,000	10,000	12,000	14,000	16,000		4,000	6,000	8,000	10,000	12,000	14,000	16,000		Prompt	Delayed	(meters)
1,000	High (1,750)	32,400	.6/.8	.5/.6	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1		.6/.8	.5/.6	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1		5,400	5,400	3,660
	Low (1,260)	32,400	.6/.8	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1		.6/.8	.5/.7	.4/.4	.2/.3	.1/.2	.1/.2	.1/.1		5,475	5,475	(all yields)
	Impact	*19,100	.5/.7	.3/.5	.2/.3	.1/.2	.1/.1				.5/.7	.3/.5	.2/.3	.1/.2	.1/.1				4,350	4,350	
			Target radius (meters)								Target radius (meters)										
			6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000	6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000			
2,000	High (2,023)	41,000	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	7,200	7,200	
	Low (1,406)	41,000	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	7,225	7,225	
	Impact	*24,100	.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			.5/.7	.4/.5	.3/.3	.2/.2	.1/.2	.1/.1			5,725	5,725	
			Target radius (meters)								Target radius (meters)										
			8,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000			
5,000	High (2,496)	58,800	.8/.9	.7/.8	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	.8/.9	.7/.8	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	10,425	10,425	
	Low (1,658)	58,800	.8/.9	.7/.8	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	.8/.9	.7/.8	.6/.7	.5/.5	.4/.4	.3/.3	.2/.3	.2/.2	10,400	10,400	
	Impact	*33,200	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	.7/.8	.5/.6	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	8,250	8,250	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 11.1.

Yield	HOB option (HOB-meters)	Minimum safe distance (negligible risk UnW Ex)	FRACTION OF TARGET COVERAGE. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																Probable minimum R_D		Offset distance d_o
			PROMPT CASUALTIES								DELAYED CASUALTIES								(meters)		
			Target radius (meters)								Target radius (meters)										
KT	(See note)	(meters)	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	Prompt	Delayed	(meters)
1,000	High (1,750)	32,400	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.0/.2	.1/.2	.1/.2	1,475	1,475	3,660 (all yields)
	Low (1,260)	32,400	.0/.4	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	.0/.4	.0/.4	.0/.3	.0/.3	.0/.3	.0/.3	.1/.2	.1/.2	1,700	1,700	
	Impact	*19,100	.0/.5	.0/.5	.0/.4	.0/.4	.1/.4	.1/.3	.1/.3	.1/.3	.0/.5	.0/.5	.0/.4	.0/.4	.1/.4	.1/.3	.1/.3	.1/.3	2,100	2,100	
			Target radius (meters)								Target radius (meters)										
			1,200	2,000	2,800	3,600	4,400	5,200	6,000	6,800	1,200	2,000	2,800	3,600	4,400	5,200	6,000	6,800			
2,000	High (2,023)	41,000	.0/.5	.1/.5	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1		.0/.5	.1/.5	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1		2,100	2,100	
	Low (1,406)	41,000	.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1		.0/.5	.1/.4	.1/.4	.1/.3	.1/.2	.1/.2	.1/.1		2,125	2,125	
	Impact	*24,100	.1/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.6	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	2,650	2,650	
			Target radius (meters)								Target radius (meters)										
			1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000			
5,000	High (2,496)	58,800	.2/.7	.2/.7	.3/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1	.2/.7	.2/.7	.3/.6	.3/.4	.2/.3	.2/.3	.1/.2	.1/.1	2,950	2,950	
	Low (1,658)	58,800	.2/.7	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	.2/.7	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	2,950	2,950	
	Impact	*33,200	.5/.8	.4/.8	.4/.7	.3/.6	.3/.4	.3/.3	.2/.3	.1/.2	.5/.8	.4/.8	.4/.7	.3/.6	.3/.4	.3/.3	.2/.3	.1/.2	3,600	3,600	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 11.2.

STRAT
BMR 1

[1]Strategic Bomber.

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Yield	HOB option (HOB–meters)	Minimum safe distance (negligible risk, UnW Ex)	FRACTION OF TARGET COVERED. In the column under each target radius, the first figure is the probable minimum coverage; the second figure is the average coverage.																	Offset distance d_o
			WHEELED VEHICLES									TANKS AND ARTILLERY								
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D
KT	(See note)	(meters)	2,400	3,200	4,000	4,800	5,600	6,400	7,200	8,000	(meters)	400	800	1,200	1,600	2,000	2,400	2,800	3,200	(meters)	(meters)
1,000	High (1,750)	32,400	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			600	.0/.0								0	3,660 (all yields)
	Low (1,260)	32,400	.3/.7	.3/.6	.3/.5	.2/.4	.2/.4	.2/.3	.1/.2	.1/.2	2,975	.0/.2	.0/.2	.0/.2	.0/.2	.0/.1				150	
	Impact	*19,100	.2/.6	.2/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.2	.1/.1	2,775	.0/.4	.0/.4	.0/.4	.0/.4	.0/.3	.0/.3	.1/.3	.1/.2	1,850	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	(meters)	800	1,600	2,400	3,200	4,000	4,800	5,600	6,400	(meters)	
2,000	High (2,023)	41,000	.1/.5	.1/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1		1,750	.0/.1								0	
	Low (1,406)	41,000	.5/.8	.5/.7	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	4,450	.0/.4	.0/.3	.0/.3	.0/.2	.0/.2	.0/.1			825	
	Impact	*24,100	.4/.6	.3/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1		3,675	.0/.6	.1/.5	.1/.5	.2/.4	.2/.3	.2/.2	.1/.2	.1/.1	2,450	
			Target radius (meters)								Prob min R_D	Target radius (meters)								Prob min R_D	
			4,000	6,000	8,000	10,000	12,000	14,000	16,000	18,000	(meters)	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	(meters)	
5,000	High (2,496)	*58,800	.7/.9	.5/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	.1/.1	5,375	.0/.2	.0/.1							100	
	Low (1,658)	58,800	.9/.9	.7/.9	.6/.7	.4/.5	.3/.4	.2/.3	.1/.2	.1/.2	6,950	.2/.7	.2/.6	.2/.5	.1/.4	.1/.3	.0/.2	.0/.2	.0/.1	2,125	
	Impact	*33,200	.6/.8	.5/.6	.3/.4	.2/.3	.1/.2	.1/.1			5,300	.4/.8	.4/.7	.3/.5	.3/.4	.2/.3	.2/.3	.1/.2	.1/.2	3,525	

NOTE: High airburst–Reduces intensity of induced contamination. Precludes fallout.
Low airburst–Precludes fallout.
Impact burst–Produces fallout.

*Initial effects only. Fallout governs.

Figure 11.3.

STRAT
BMR 1

[1]Strategic Bomber.

Troop Safety Distances—Meters
Strategic Bomber

Range	*Yield*	*Height of burst option*	*Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown*								
			Unwarned Exposed			*Warned Exposed*			*Warned Protected*		
			NEG Risk	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*	*NEG Risk*	*MOD Risk*	*EMER Risk*
Range of aircraft is 2400 km	KILO/ 1,000 KT	High	32,400	27,800	24,900	23,000	16,700	14,000	12,900	10,200	8,000
		Low	32,400	27,800	24,900	23,000	16,700	14,000	12,100	9,000	7,500
		Impact[1]	19,100	16,800	15,300	14,200	11,000	9,600	10,300	8,800	7,100
	LIMA/ 2,000 KT	High	41,000	35,500	31,400	28,700	20,700	17,500	14,800	11,600	8,700
		Low	41,000	35,500	31,400	28,700	20,700	17,600	13,800	11,000	8,100
		Impact[1]	24,100	20,700	19,300	17,500	13,200	11,200	11,900	10,000	7,700
	MIKE/ 5,000 KT	High	58,800	49,700	42,400	39,600	29,100	24,000	17,900	13,800	10,200
		Low	58,800	49,700	42,400	39,600	29,100	24,100	16,800	13,200	9,200
		Impact[1]	33,200	28,700	25,500	23,200	17,600	14,800	14,800	12,200	9,200

NOTE: The troop safety distances include the safety radius for the yield plus the buffer distance for delivery perpendiculsr to s straight-line friendly disposition. See figure 11.5 for special friendly troop orientations.

[1]Initial effects only. Fallout governs.

Figure 11.4.

SUPPLEMENTARY TROOP SAFETY Tables
Strategic Bomber

The troop safety distances in figure 11.4 are based on the friendly troop orientation shown in figure 1, below. The circular delivery pattern of the strategic bomber may require modification of the tabulated troop safety distances for friendly troop orientations other than a straight line with perpendicular delivery. Special friendly troop orientations for which corrections have been computed are shown in figures 2–5, below.

Special Troop Safety Orientations

LEGEND
DGZ - Desired ground zero
R_s – Safety radius.
d_b – Buffer distance.
-Friendly troops.
-Direction of fire.

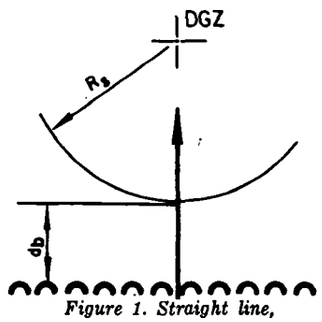

Figure 1. Straight line, perpendicular delivery.

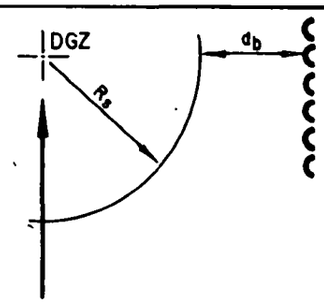

Figure 2. Straight line, parallel delivery.

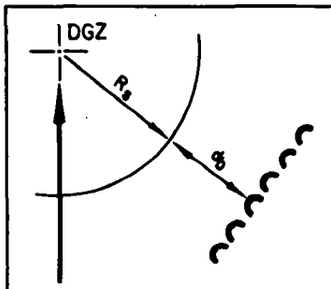

Figure 3. Straight line, 45° delivery.

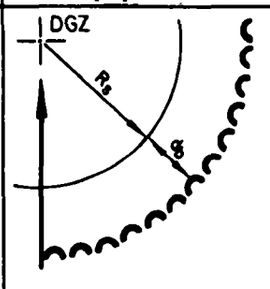

Figure 4. Quarter circle.

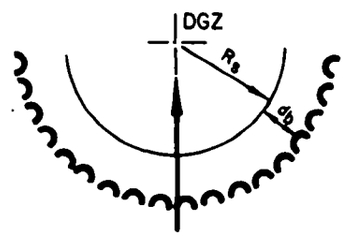

Figure 5. Half circle.

When the special friendly troop orientations shown above occur, the tabulated troop safety distances in figure 11.4 must be increased where plus (+) values are shown below; the tabulated troop safety distances may be decreased where minus (–) values are shown below. All figures shown in meters.

All Height of Burst Options–All Yields				
Range (meters)	*Straight line, parallel delivery (fig 2)*	*Straight line, 45° delivery (fig 3)*	*Quarter circle (fig 4)*	*Half circle (fig 5)*
All ranges	0	0	+600	+1,200

Figure 11.5.

STRAT
BMR [1]

[1]Stralegic Bomber.

CASUALTY and DAMAGE Tables
Strategic Bomber
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200	5,350	5,350	1,425	1,425		375			5,700	5,700	9,150	9,150	28,300	23,700	20,800	18,900	12,500	9,800	9,075	6,275	4,000
2,100	5,450	5,450	1,525	1,525		750			5,650	5,650	9,000	9,000	28,300	23,700	20,800	18,900	12,500	9,800	8,925	6,150	3,925
2,000	5,475	5,475	1,600	1,600		1,000			5,600	5,600	8,800	8,800	28,300	23,700	20,800	18,900	12,500	9,800	8,775	6,050	3,850
1,900	5,475	5,475	1,675	1,675	0	1,175			5,500	5,500	8,600	8,600	28,300	23,700	20,800	18,900	12,600	9,800	8,600	5,925	3,775
1,800	5,450	5,450	1,725	1,725	375	1,325			5,400	5,400	8,500	8,500	28,400	23,700	20,800	18,900	12,600	9,800	8,450	5,825	3,700
1,700	5,450	5,450	1,775	1,775	700	1,450	0	0	5,350	5,350	8,350	8,350	28,400	23,700	20,900	18,900	12,600	9,800	8,275	5,725	3,600
1,600	5,475	5,475	1,800	1,800	900	1,550	125	125	5,250	5,250	8,200	8,200	28,400	23,700	20,900	18,900	12,600	9,900	8,975	5,650	3,500
1,500	5,475	5,475	1,825	1,825	1,075	1,650	350	550	5,150	5,150	8,050	8,050	28,400	23,700	20,900	18,900	12,600	9,900	7,900	5,575	3,375
1,400	5,475	5,475	1,825	1,825	1,200	1,725	500	775	5,050	5,050	7,900	7,900	28,400	23,700	20,900	19,000	12,600	9,900	7,725	5,500	3,250
1,300	5,475	5,475	1,800	1,800	1,300	1,800	600	925	4,950	4,950	7,750	7,750	28,400	23,700	20,900	19,000	12,600	9,900	7,575	5,425	3,125
1,200	5,475	5,475	1,775	1,775	1,400	1,875	700	1,050	4,900	4,900	7,600	7,600	28,400	23,800	20,900	19,000	12,600	9,900	7,450	5,350	3,025
1,100	5,475	5,475	1,750	1,750	1,475	1,925	775	1,175	4,800	4,800	7,450	7,450	28,400	23,800	20,900	19,000	12,700	9,900	7,325	5,275	2,950
1,050	5,475	5,475	1,750	1,750	1,500	1,975	825	1,200	4,750	4,750	7,400	7,400	28,400	23,800	20,900	19,000	12,700	9,900	7,250	5,250	2,925
1,000	5,475	5,475	1,725	1,725	1,550	2,000	850	1,250	4,700	4,700	7,350	7,350	28,400	23,800	20,900	19,000	12,700	10,000	7,200	5,225	2,900
950	5,475	5,475	1,725	1,725	1,675	2,025	875	1,300	4,650	4,650	7,250	7,250	28,400	23,800	20,900	19,000	12,700	10,000	7,150	5,200	2,875
900	5,475	5,475	1,700	1,700	1,850	2,050	925	1,325	4,600	4,600	7,200	7,200	28,400	23,800	20,900	19,000	12,700	10,000	7,075	5,150	2,875
850	5,475	5,475	1,700	1,700	2,025	2,050	975	1,350	4,550	4,550	7,150	7,150	27,800	23,500	20,600	18,800	12,600	9,900	7,025	5,125	2,850
800	5,475	5,475	1,700	1,700	2,150	2,150	1,000	1,400	4,550	4,550	7,100	7,100	27,200	22,900	20,000	18,300	12,300	9,600	6,975	5,100	2,850
750	5,450	5,450	1,700	1,700	2,250	2,250	1,050	1,425	4,500	4,500	7,050	7,050	26,500	22,200	19,500	17,800	11,900	9,400	6,925	5,075	2,850
700	5,450	5,450	1,700	1,700	2,300	2,300	1,075	1,450	4,450	4,450	7,000	7,000	25,800	21,600	18,900	17,300	11,600	9,100	6,875	5,050	2,850
650	5,425	5,425	1,700	1,700	2,350	2,350	1,125	1,475	4,400	4,400	6,950	6,950	25,000	21,000	18,300	16,800	11,300	8,900	6,825	5,025	2,850
600	5,400	5,400	1,725	1,725	2,375	2,375	1,150	1,475	4,400	4,400	6,900	6,900	24,300	20,400	17,800	16,300	11,000	8,600	6,775	5,000	2,850
500	5,325	5,325	1,750	1,750	2,425	2,425	1,200	1,525	4,350	4,350	6,800	6,800	22,700	19,100	16,700	15,300	10,300	8,100	6,675	4,950	2,875
400	5,225	5,225	1,800	1,800	2,450	2,450	1,225	1,550	4,300	4,300	6,650	6,650	21,200	17,800	15,600	14,300	9,600	7,600	6,575	4,900	2,900
300	5,075	5,075	1,850	1,850	2,450	2,450	1,250	1,575	4,250	4,250	6,550	6,550	19,800	16,500	14,500	13,300	9,000	7,100	6,500	4,850	2,925
200	4,850	4,850	1,925	1,925	2,375	2,375	1,275	1,600	4,200	4,200	6,500	6,500	18,300	15,200	13,400	12,200	8,300	6,600	6,400	4,825	2,950
100	4,600	4,600	2,000	2,000	2,200	2,225	1,300	1,600	4,150	4,150	6,400	6,400	16,700	14,000	12,200	11,200	7,600	6,100	6,325	4,775	2,975
0	4,275	4,275	2,100	2,100	1,850	2,225	1,300	1,600	4,100	4,100	6,300	6,300	15,100	12,800	11,300	10,200	7,000	5,600	6,250	4,750	3,025

HOB_{fs} = 560m
Low HOB_{min} = 530m
High HOB_{min} = 1200m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 11.6a.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
							2d degree burns				Induced contamination							
											Intensity at GZ (Rad/hr)				2 rad/hr radius			
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam flaat brgs	Exposed skin	2-layer summer uniform	4-layer winter uniform	1 PSI over-pressure	Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200	375			2,075	0	4,275	13,925	6,875	3,600	15,875								
2,100	700			2,300	2,750	4,250	13,950	6,900	3,650	15,800			0				0	
2,000	1,000			2,500	2,775	4,200	13,950	6,950	3,700	15,725			0–5				0–450	
1,900	1,350		0	2,675	2,800	4,150	13,975	6,975	3,750	15,625			0–5				0–800	
1,800	1,775	0	275	2,850	2,825	4,100	13,975	7,000	3,800	15,525			0–10				0–1,000	
1,700	2,675	25	600	2,975	2,850	4,050	14,000	7,025	3,850	15,450		0	0–15			0	0–1,050	
1,600	3,075	225	875	3,100	2,875	4,000	14,000	7,050	3,900	15,350		0–5	0–30			0–400	0–1,300	
1,500	3,275	450	1,125	3,200	2,900	3,975	14,025	7,075	3,925	15,250		0–5	5–50			0–700	50–1,400	
1,400	3,400	675	1,325	3,300	2,925	3,925	14,025	7,075	3,975	15,125	0	0–10	5–100		0	0–900	550–1,500	
1,300	3,525	875	1,500	3,400	2,950	3,900	14,050	7,100	4,000	15,025	0–5	0–15	10–170		0–50	0–1,050	750–1,600	
1,200	3,650	1,100	1,600	3,500	2,950	3,875	14,050	7,125	4,025	14,925	0–5	0–25	15–300		0–500	0–1,150	900–1,700	
1,100	3,750	1,325	1,725	3,600	2,975	3,850	14,050	7,125	4,075	14,800	0–10	5–50	25–580		0–700	50–1,250	1,050–1,750	
1,050	3,800	1,425	1,800	3,650	2,975	3,825	14,050	7,150	4,075	14,750	0–10	5–65	35–780		0–800	350–13,00	1,100–1,800	
1,000	3,850	1,550	1,850	3,700	3,000	3,800	14,075	7,150	4,100	14,675	0–15	5–95	50–1,140		0–850	500–1,350	1,150–1,800	
950	3,900	1,675	1,900	3,725	3,000	3,775	14,075	7,150	4,100	14,625	0–15	10–130	65–1,560		0–900	600–1,400	1,200–1,850	
900	3,950	1,850	1,950	3,775	3,025	3,775	14,075	7,175	4,125	14,575	0–20	10–180	90–2,160		0–950	650–1,400	1,200–1,850	
850	4,000	2,025	2,000	3,825	3,025	3,750	13,800	7,075	4,125	14,500	0–30	15–260	125–3,120		0–1,000	700–1,450	1,250–1,900	
800	4,050	2,150	2,050	3,875	3,050	3,750	13,400	6,900	4,025	14,450	5–45	15–370	180–4,440	0	50–1,050	800–1,450	1,300–1,900	0
750	4,100	2,250	2,075	3,900	3,050	3,725	13,025	6,700	3,925	14,375	5–65	25–550	270–6,600	0–5	300–1,100	850–1,500	1,300–1,950	0–50
700	4,125	2,300	2,125	3,950	3,050	3,700	12,625	6,525	3,825	14,325	5–95	35–835	400–9,900	0–5	400–1,100	900–1,500	1,350–1,950	0–300
650	4,125	2,350	2,175	3,975	3,075	3,675	12,225	6,350	3,725	14,250	10–145	55–1,300	63 0–15,600	0–5	500–1,150	900–1,550	1,350–1,950	0–400
600	4,150	2,375	2,200	4,000	3,075	3,650	11,850	6,150	3,625	14,175	10–220	80–2,000	960–24,000	0–10	550–12,00	950–1,550	1,400–2,000	0–450
500	4,125	2,425	2,275	4,050	3,075	3,625	11,050	5,775	3,400	14,050	FALLOUT GOVERNS							
400	4,075	2,450	2,325	4,025	3,100	3,575	10,275	5,400	3,200	13,925								
300	4,000	2,450	2,275	3,950	3,075	3,475	9,475	5,050	3,000	13,775								
200	3,825	2,375	2,125	3,975	3,050	3,400	8,700	4,675	2,800	13,625								
100	3,350	2,200	1,875	3,500	2,825	3,275	7,925	4,300	2,575	13,500								
0	2,775	1,850	1,500	3,150	2,525	3,200	7,125	3,925	2,375	13,350								

Figure 11.6a continued.

[1]Strategic Bomber.

CASUALTY and DAMAGE Tables
Strategic Bomber
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelter		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,200	7,200	7,200	2,225	2,225		1,150			6,700	6,700	10,450	10,450	37,000	31,400	27,300	24,600	16,600	13,400	10,525	7,275	4,600
2,100	7,200	7,200	2,250	2,250	0	1,300	0	0	6,600	6,600	10,300	10,300	37,000	31,400	27,300	24,600	16,600	13,400	10,325	7,200	4,500
2,000	7,225	7,225	2,275	2,275	500	1,450	200	200	6,550	6,550	10,150	10,150	37,000	31,400	27,300	24,600	16,600	13,400	10,150	7,100	4,375
1,900	7,225	7,225	2,300	2,300	800	1,575	425	425	6,450	6,450	10,000	10,000	37,000	31,400	27,300	24,600	16,600	13,500	9,975	7,025	4,250
1,800	7,225	7,225	2,300	2,300	1,000	1,700	600	600	6,400	6,400	9,850	9,850	37,000	31,400	27,300	24,700	16,600	13,500	9,775	6,950	4,125
1,700	7,225	7,225	2,275	2,275	1,175	1,800	700	700	6,300	6,300	9,700	9,700	37,000	31,500	27,400	24,700	16,600	13,500	9,625	6,875	4,000
1,600	7,225	7,225	2,250	2,250	1,300	1,875	800	800	6,200	6,200	9,550	9,550	37,000	31,500	27,400	24,700	16,600	13,500	9,500	6,800	3,900
1,500	7,225	7,225	2,225	2,225	1,475	1,975	900	975	6,150	6,150	9,400	9,400	37,000	31,500	27,400	24,700	16,600	13,500	9,375	6,725	3,825
1,400	7,225	7,225	2,225	2,225	1,700	2,050	975	1,125	6,050	6,050	9,250	9,250	37,000	31,500	27,400	24,700	16,600	13,500	9,250	6,675	3,750
1,300	7,225	7,225	2,200	2,200	1,950	2,100	1,050	1,225	5,950	5,950	9,100	9,100	37,000	31,500	27,400	24,700	16,700	13,500	9,125	6,600	3,675
1,200	7,225	7,225	2,175	2,175	2,200	2,200	1,100	1,325	5,900	5,900	8,950	8,950	37,000	31,500	27,400	24,700	16,700	13,500	9,000	6,550	3,625
1,100	7,225	7,225	2,150	2,150	2,550	2,550	1,150	1,425	5,800	5,800	8,800	8,800	36,300	30,900	27,000	24,200	16,300	13,300	8,900	6,475	3,600
1,050	7,225	7,225	2,125	2,125	2,700	2,700	1,175	1,450	5,800	5,800	8,700	8,700	35,500	30,200	26,500	23,700	16,000	13,000	8,850	6,450	3,600
1,000	7,225	7,225	2,125	2,125	2,850	2,850	1,175	1,500	5,750	5,750	8,650	8,650	34,800	29,600	26,000	23,200	15,700	12,700	8,775	6,425	3,575
950	7,200	7,200	2,125	2,125	2,950	2,950	1,200	1,525	5,700	5,700	8,550	8,550	34,000	29,000	25,400	22,700	15,400	12,500	8,725	6,400	3,575
900	7,175	7,175	2,150	2,150	3,025	3,025	1,225	1,550	5,650	5,650	8,450	8,450	33,300	28,300	24,900	22,200	15,000	12,200	8,675	6,375	3,575
850	7,175	7,175	2,150	2,150	3,075	3,075	1,225	1,575	5,600	5,600	8,400	8,400	32,600	27,700	24,300	21,700	14,600	11,900	8,625	6,350	3,575
800	7,150	7,150	2,150	2,150	3,125	3,125	1,250	1,600	5,600	5,600	8,350	8,350	31,800	27,000	23,800	21,200	14,300	11,600	8,575	6,325	3,575
750	7,100	7,100	2,175	2,175	3,150	3,150	1,275	1,625	5,550	5,550	8,250	8,250	31,100	26,400	23,300	20,700	14,000	11,300	8,525	6,275	3,600
700	7,075	7,075	2,175	2,175	3,175	3,175	1,275	1,650	5,500	5,500	8,200	8,200	30,400	25,700	22,800	20,200	13,700	11,100	8,475	6,250	3,600
650	7,025	7,025	2,200	2,200	3,200	3,200	1,300	1,675	5,450	5,450	8,150	8,150	29,600	25,100	22,300	19,800	13,400	10,700	8,425	6,250	3,625
600	6,975	6,975	2,225	2,225	3,200	3,200	1,325	1,700	5,450	5,450	8,050	8,050	28,900	24,400	21,700	19,300	13,000	10,500	8,375	6,225	3,625
500	6,875	6,875	2,275	2,275	3,225	3,225	1,375	1,725	5,350	5,350	7,950	7,950	27,400	23,200	20,700	18,300	12,400	10,000	8,275	6,175	3,650
400	6,725	6,725	2,325	2,325	3,250	3,250	1,400	1,750	5,300	5,300	7,850	7,850	25,900	21,900	19,600	17,300	11,700	9,400	8,200	6,125	3,675
300	6,525	6,525	2,400	2,400	3,175	3,175	1,425	1,775	5,200	5,200	7,750	7,750	24,500	20,600	18,500	16,400	11,100	8,900	8,100	6,075	3,700
200	6,275	6,275	2,475	2,475	3,050	3,050	1,450	1,775	5,150	5,150	7,650	7,650	22,200	19,300	17,400	15,400	10,400	8,400	8,025	6,025	3,750
100	5,975	5,975	2,550	2,550	2,825	2,825	1,450	1,800	5,100	5,100	7,550	7,550	21,500	18,000	16,400	14,500	9,700	7,800	7,950	6,000	3,775
0	5,650	5,650	2,650	2,650	2,450	2,475	1,450	1,800	5,050	5,050	7,500	7,500	20,100	16,700	15,300	13,500	9,200	7,300	7,875	5,975	3,800

HOB_{fs} = 706m
Low HOB_{min} = 668m
High HOB_{min} = 1,512m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 11.6b.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HOB	Mod dam wheeled vehs	Mod dam tks and arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	2d degree burns			1 PSI over-pressure	Induced contamination							
							Exposed skin	2-layer summer uniform	4-layer winter uniform		Intensity at GZ (rad/hr)				2 rad/hr radius			
											Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type IV
2,200	2,875	0	600	3,850	3,500	5,075	18,475	9,350	5,125	19,500			0				0	
2,100	3,825	125	925	3,975	3,525	5,050	18,475	9,375	5,175	19,400			0–5				0–450	
2,000	4,075	350	1,200	4,100	3,550	5,000	18,500	9,400	5,200	19,325			0–5				0–800	
1,900	4,300	575	1,450	4,200	3,575	4,975	18,500	9,400	5,250	19,200			0–10				0–1,000	
1,800	4,425	800	1,675	4,325	3,600	4,925	18,525	9,425	5,275	19,100		0	0–20			0	0–1,200	
1,700	4,575	1,025	1,875	4,425	3,625	4,900	18,525	9,450	5,325	19,000		0–5	0–30			0–400	0–1,350	
1,600	4,700	1,250	2,025	4,525	3,625	4,875	18,525	9,475	5,350	18,900		0–5	5–55			0–700	400–1,450	
1,500	4,825	1,475	2,150	4,650	3,650	4,850	18,550	9,475	5,375	18,775		0–10	5–100			0–900	700–1,550	
1,400	4,950	1,700	2,275	4,750	3,675	4,800	18,550	9,500	5,400	18,675	0	0–20	10–190		0	0–1,050	900–1,650	
1,300	5,050	1,950	2,400	4,825	3,700	4,775	18,550	9,500	5,425	18,550	0–5	0–30	15–340		0–50	0–1,200	1,050–1,750	
1,200	5,150	2,200	2,500	4,925	3,725	4,750	18,550	9,525	5,450	18,425	0–5	5–50	25–600		0–750	50–1,300	1,150–1,800	
1,100	5,250	2,550	2,600	5,025	3,750	4,700	18,025	9,325	5,425	18,300	0–10	5–100	50–1,160		0–900	500–1,400	1,250–1,850	
1,050	5,300	2,700	2,650	5,075	3,750	4,675	17,625	9,125	5,325	18,250	0–15	10–130	65–1,560		0–950	600–1,400	1,300–1,900	
1,000	5,350	2,850	2,700	5,125	3,775	4,650	17,225	8,925	5,225	18,175	0–25	10–190	95–2,280		0–1,000	700–1,450	1,350–1,950	
950	5,400	2,950	2,750	5,150	3,775	4,650	16,825	8,750	5,125	18,125	0–30	15–260	125–3,120		0–1,050	750–1,500	1,400–1,950	
900	5,425	3,025	2,800	5,200	3,800	4,625	16,400	8,550	5,000	18,050	5–40	15–360	175–4,320		50–1,100	800–1,550	1,400–2,000	
850	5,450	3,075	2,825	5,225	3,800	4,600	16,000	8,350	4,900	18,000	5–60	25–520	250–6,240	0	350–1,150	850–1,550	1,450–2,000	0
800	5,475	3,125	2,875	5,275	3,825	4,575	15,600	8,150	4,800	17,925	5–85	30–740	360–8,880	0–5	450–1,600	900–1,600	1,450–2,000	0–50
750	5,475	3,150	2,900	5,300	3,825	4,575	15,200	7,950	4,700	17,875	5–125	45–1,100	530–13,200	0–5	550–1,200	950–1,600	1,500–2,050	0–300
700	5,475	3,175	2,950	5,325	3,850	4,550	14,800	7,750	4,575	17,800								
650	5,450	3,200	2,975	5,350	3,850	4,525	14,400	7,575	4,475	17,725								
600	5,450	3,200	3,000	5,350	3,850	4,475	14,000	7,375	4,375	17,675								
500	5,375	3,225	3,050	5,325	3,850	4,450	13,175	6,975	4,175	17,525								
400	5,300	3,250	3,025	5,225	3,825	4,400	12,375	6,600	3,950	17,400								
300	5,175	3,175	2,900	5,075	3,750	4,300	11,575	6,200	3,750	17,250								
200	4,825	3,050	2,700	4,850	3,625	4,175	10,750	5,800	3,525	17,100								
100	4,275	2,825	2,400	4,525	3,425	4,075	9,950	5,425	3,325	16,950								
0	3,675	2,450	2,000	4,150	3,200	3,925	9,150	5,025	3,100	16,800								

FALLOUT GOVERNS

Figure 11.6b continued.

[1]Strategic Bomber.

CASUALTY and DAMAGE Tables
Strategic Bomber
All figures in meters

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
HOB	Exposed personnel		Protected personnel		Personnel in APC's		Personnel in 1-m earth shelters		Personnel in multistory apt bldgs		Personnel in framehouses		Radius of safety								
													Unwarned, exposed			Warned, exposed			Warned, protected		
	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Prompt	Delayed	Neg	Mod	Emer	Neg	Mod	Emer	Neg	Mod	Emer
2,500	10,425	10,425	3,125	3,125	1,025	1,475	725	725	8,700	8,700	13,600	13,600	54,500	45,600	38,400	35,500	25,000	19,900	13,350	9,475	5,675
2,400	10,425	10,425	3,100	3,100	1,250	1,625	850	850	8,600	8,600	13,450	13,450	54,500	45,700	38,400	35,500	25,000	19,900	13,200	9,400	5,550
2,300	10,425	10,425	3,075	3,075	1,500	1,750	950	950	8,500	8,500	13,300	13,300	54,500	45,700	38,400	35,500	25,000	20,000	13,075	9,325	5,425
2,200	10,425	10,425	3,075	3,075	1,750	1,875	1,050	1,050	8,400	8,400	13,200	13,200	54,500	45,700	38,400	35,500	25,000	20,000	12,925	9,250	5,325
2,100	10,425	10,425	3,050	3,050	1,975	2,000	1,150	1,150	8,350	8,350	13,050	13,050	54,500	45,700	38,400	35,500	25,000	20,000	12,800	9,175	5,225
2,000	10,425	10,425	3,025	3,025	2,225	2,225	1,250	1,250	8,250	8,250	12,900	12,900	54,500	45,700	38,400	35,500	25,000	20,000	12,675	9,125	5,150
1,900	10,425	10,425	3,000	3,000	2,475	2,475	1,325	1,325	8,200	8,200	12,750	12,750	54,500	45,700	38,400	35,500	25,000	20,000	12,550	9,050	5,075
1,800	10,425	10,425	2,975	2,975	2,725	2,725	1,400	1,400	8,100	8,100	12,650	12,650	54,500	45,700	38,400	35,600	25,000	20,000	12,425	8,975	5,025
1,700	10,425	10,425	2,950	2,950	2,950	2,950	1,450	1,450	8,050	8,050	12,500	12,500	54,500	45,700	38,400	35,600	25,000	20,000	12,300	8,925	4,950
1,600	10,425	10,425	2,925	2,925	3,275	3,275	1,500	1,500	8,000	8,000	12,400	12,400	53,700	45,300	37,900	35,100	24,600	19,800	12,175	8,850	4,925
1,500	10,425	10,425	2,925	2,925	3,650	3,650	1,550	1,550	7,900	7,900	12,300	12,300	52,200	44,000	36,900	34,000	23,900	19,200	12,075	8,800	4,875
1,400	10,425	10,425	2,875	2,875	4,000	4,000	1,600	1,600	7,850	7,850	12,200	12,200	50,600	42,700	35,900	33,000	23,200	18,600	11,950	8,750	4,875
1,300	10,400	10,400	2,900	2,900	4,250	4,250	1,625	1,675	7,800	7,800	12,050	12,050	49,000	41,400	34,800	32,100	22,500	18,000	11,850	8,675	4,850
1,200	10,375	10,375	2,900	2,900	4,400	4,400	1,650	1,750	7,750	7,750	11,950	11,950	47,500	40,000	33,800	31,100	21,800	17,500	11,750	8,625	4,850
1,100	10,300	10,300	2,925	2,925	4,500	4,500	1,700	1,825	7,700	7,700	11,850	11,850	46,000	38,900	32,800	30,100	21,100	17,000	11,650	8,575	4,850
1,050	10,275	10,275	2,950	2,950	4,525	4,525	1,700	1,850	7,650	7,650	11,800	11,800	45,200	38,200	32,300	29,600	20,700	16,700	11,600	8,550	4,875
1,000	10,250	10,250	2,950	2,950	4,550	4,550	1,725	1,875	7,600	7,600	11,750	11,750	44,400	37,600	31,800	29,100	20,400	16,400	11,550	8,525	4,875
950	10,200	10,200	2,975	2,975	4,575	4,575	1,725	1,900	7,600	7,600	11,700	11,700	53,600	36,800	31,200	28,600	20,000	16,100	11,500	8,500	4,900
900	10,150	10,150	2,975	2,975	4,600	4,600	1,750	1,925	7,550	7,550	11,650	11,650	42,900	36,200	30,700	28,100	19,700	15,800	11,450	8,475	4,900
850	10,100	10,100	3,000	3,000	4,625	4,625	1,750	1,950	7,500	7,500	11,600	11,600	42,100	35,600	30,200	27,600	19,300	15,500	11,400	8,450	4,925
800	10,050	10,050	3,025	3,025	4,625	4,625	1,775	1,975	7,500	7,500	11,550	11,550	41,400	35,000	29,700	27,100	19,000	15,200	11,350	8,425	4,925
750	10,000	10,000	3,050	3,050	4,650	4,650	1,775	2,000	7,450	7,450	11,500	11,500	40,600	34,400	29,200	26,600	18,600	14,700	11,300	8,400	4,950
700	9,950	9,950	3,075	3,075	4,650	4,650	1,800	2,000	7,450	7,450	11,450	11,450	39,800	33,700	28,700	26,100	18,300	14,400	11,250	8,375	4,950
600	9,800	9,800	3,125	3,125	4,675	4,675	1,825	2,050	7,350	7,350	11,350	11,350	38,200	32,400	27,700	25,100	17,600	14,100	11,175	8,325	4,975
500	9,625	9,625	3,200	3,200	4,675	4,675	1,825	2,075	7,300	7,300	11,250	11,250	36,700	31,100	26,600	24,100	16,900	13,500	11,075	8,300	5,000
400	9,400	9,400	3,250	3,250	4,575	4,575	1,850	2,100	7,250	7,250	11,150	11,150	35,200	29,800	25,600	23,100	16,200	13,000	11,000	8,250	5,050
300	9,125	9,125	3,325	3,325	4,450	4,450	1,875	2,100	7,200	7,200	11,050	11,050	33,600	28,500	24,600	22,100	15,500	12,400	10,925	8,225	5,075
200	8,850	8,850	3,425	3,425	4,250	4,250	1,875	2,100	7,150	7,150	10,950	10,950	32,100	27,200	23,600	21,100	14,800	11,900	10,850	8,175	5,100
100	8,500	8,500	3,500	3,500	3,925	3,925	1,900	2,125	7,100	7,100	10,850	10,850	30,600	26,000	22,500	20,200	14,200	11,300	10,775	8,150	5,125
0	8,125	8,125	3,600	3,600	3,525	3,525	1,900	2,125	7,050	7,050	10,750	10,750	29,200	24,700	21,500	19,200	13,600	10,800	10,700	8,100	5,150

HOB_{fs} = 958m
Low HOB_{min} = 905m
High HOB_{min} = 2,052m
$HOB_{99} = HOB_{fs} + 3.5\ PE_h$ m
$HOB_{98} = HOB_{fs} + 3.0\ PE_h$ m
$HOB_{90} = HOB_{fs} + 1.9\ PE_h$ m

Figure 11.6c.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
							2d-degree burns				Induced contamination							
											Intensity at GZ (Rad/hr)				2 rad/hr radius			
HOB	Mod dam wheeled vehs	Mod dam tks and Arty	Severe dam sup deps	Severe dam radios and elec equip	Severe dam hwy and RR brgs	Severe dam float brgs	Exposed skin	2-layer summer uniform	4-layer winter uniform	1 PSI over-pressure	Type I	Type II	Type III	Type IV	Type I	Type II	Type III	Type II
2,500	6,325	1,025	2,300	6,150	5,075	7,375	26,375	13,275	7,850	26,000								
2,400	6,450	1,250	2,500	6,275	5,075	7,350	26,400	13,275	7,875	25,875			0				0	
2,300	6,600	1,500	2,700	6,400	5,100	7,300	26,400	13,300	7,900	25,775			0–5				0–50	
2,200	6,750	1,750	2,875	6,500	5,125	7,250	26,400	13,325	7,925	25,675			0–5				0–700	
2,100	6,875	1,975	3,025	6,625	5,150	7,200	26,425	13,325	7,950	25,550			0–10				0–950	
2,000	7,000	2,225	3,150	6,725	5,175	7,150	26,425	13,350	7,975	25,450		0	0–15			0	0–1,150	
1,900	7,125	2,475	3,275	6,825	5,175	7,100	26,425	13,375	8,000	25,325		0–5	0–25			0–50	0–1,300	
1,800	7,250	2,725	3,400	6,950	5,200	7,050	26,450	13,375	8,025	25,225		0–5	0–40			0–600	0–1,450	
1,700	7,375	2,950	3,525	7,050	5,200	7,000	26,450	13,400	8,050	25,100		0–10	5–75			0–850	400–1,550	
1,600	7,475	3,275	3,650	7,150	5,225	6,950	25,775	13,150	8,025	24,975	0	0–15	10–130		0	0–1,050	700–1,700	
1,500	7,575	3,650	3,750	7,250	5,250	6,900	24,950	12,775	7,800	24,850	0–5	0–25	10–250		0–400	0–1,200	900–1,750	
1,400	7,675	4,000	3,850	7,350	5,250	6,850	24,150	12,375	7,575	24,725	0–5	0–40	20–460		0–700	0–1,300	1,050–1,850	
1,300	7,775	4,250	3,950	7,425	5,275	6,800	23,350	12,000	7,350	24,600	0–10	5–70	35–840		0–850	400–1,400	1,200–1,900	
1,200	7,850	4,400	4,050	7,525	5,275	6,750	22,525	11,600	7,125	24,475	0–15	5–125	60–1,500		0–1,000	650–1,500	1,300–2,000	
1,100	7,875	4,500	4,125	7,575	5,300	6,700	21,725	11,225	6,900	24,350	0–30	10–240	120–2,880		0–1,100	800–1,600	1,400–2,950	
1,050	7,900	4,525	4,175	7,625	5,300	6,675	21,300	11,025	6,800	24,300	0–40	15–325	160–3,900		0–1,150	850–1,600	1,400–2,050	
1,000	7,900	4,550	4,200	7,650	5,325	6,650	20,900	10,825	6,675	24,225	5–55	20–475	230–5,700	0	50–1,200	950–1,650	1,450–2,100	0
950	7,900	4,575	4,250	7,675	5,325	6,625	20,500	10,625	6,575	24,150								
900	7,875	4,600	4,275	7,700	5,350	6,575	20,100	10,450	6,450	24,100								
850	7,875	4,625	4,325	7,725	5,350	6,550	19,700	10,250	6,350	24,025								
800	7,850	4,625	4,350	7,725	5,350	6,525	19,275	10,050	6,225	23,950								
750	7,800	4,650	4,375	7,700	5,350	6,500	18,875	9,850	6,125	23,900								
700	7,775	4,650	4,400	7,700	5,375	6,500	18,475	9,675	6,000	23,825								
600	7,700	4,675	4,400	7,625	5,375	6,450	17,675	9,275	5,775	23,675								
500	7,600	4,675	4,325	7,500	5,350	6,400	16,850	8,900	5,500	23,550								
400	7,425	4,575	4,175	7,300	5,250	6,325	16,050	8,500	5,325	23,400								
300	7,100	4,450	3,950	7,050	5,125	6,250	15,225	8,125	5,100	23,250								
200	6,575	4,250	3,675	6,775	4,975	6,150	14,425	7,725	4,875	23,100								
100	5,925	3,925	3,300	6,400	4,700	6,075	13,600	7,350	4,650	22,975								
0	5,300	3,525	2,875	6,000	3,975	5,975	12,800	6,950	1,125	22,825								

FALLOUT GOVERNS

Figure 11.6c continued.

[1]Strategic Bomber.

CONTINGENT EFFECTS Tables
Strategic Bomber

INDUCED RADIATION IN SOILS (See Note 1.)
Fallout activity is not significant.
Impact burst not tabulated, fallout governs.

Yield KT	HOB	Estimated radii in meters of 2 rad/hr contour of induced radiation, 1 hour after burst.				Estimated induced radiation intensity, 1 hour after burst, at GZ. In rad/hr.			
		Soil type I (Liberia, Africa)	Soil type II (Nevada desert)	Soil type III (lava clay, Hawaii)	Soil type IV (beach sand, Pensacola, Fla)	Soil type I	Soil type II	Soil type III	Soil type IV
KILO/1,000	Low	0–1,000	700–1,450	1,250–1,900	0	0–30	15–260	125–3,120	0
	High	0–50	0–1,050	750–1,600	0	0–5	0–15	10–170	0
LIMA/2,000	Low	0–1,000	700–1,450	1,350–1,950	0	0–25	10–190	95–2,280	0
	High	0	0–700	400–1,450	0	0	0–5	5–55	0
MIKE/5,000	Low	0–1,000	650–1,500	1,300–2,000	0	0–15	5–125	60–1,500	0
	High	0	0	0–950	0	0	0	0–10	0

NOTE: For description of chemical composition and effects of variations in chemical composition in soil types, see FM 101-31-1, app III, annex F.

Figure 11.7a.

TREE BLOWDOWN (See Note.)
All distances in meters

Yield KT	OBSTACLES TO MOVEMENT							CASUALTIES TO EXPOSED PERSONNEL		
	Foot and wheeled vehicle movement				Tracked vehicle movement					
	Type I	Type II	Type III	Type IV	Type I	Types II, IVa(d)	Types III, IVa(f)	Type I	Types II, IVa(d)	Types III, IVa(f)
KILO/1,000	5,000	6,200	7,700	12,000	5,000	6,200	7,700	4,050	4,600	5,200
LIMA/2,000	5,800	7,400	9,600	14,500	5,800	7,400	9,600	4,600	5,200	6,500
MIKE/5,000	8,600	12,000	14,500	22,000	8,600	12,000	14,500	7,000	8,000	9,600

NOTE: These radii apply to all HOB. For general description of forest stand types and criteria, see FM 101-31-1, app III, annex F.

Figure 11.7b.

LIGHT AIRCRAFT IN FLIGHT (See Note 1.)

Yield KT	AIRCRAFT SAFETY RADII—meters (See note 2.)		
	Light fixed wing	Recon and obsn hel	Transport and util hel
KILO/1,000	43,000	42,000	40,000
LIMA/2,000	51,000	50,000	47,000
MIKE/5,000	62,000	61,000	58,000

NOTES: 1. These radii apply to all HOB. See FM 101-31-1, app III, annex F.

2. A buffer distance has been added to these radii of safety.

Figure 11.7c.

FIRE AREAS (See Note.)

Yield KT	*HOB*	*Expected radii for ignition of wildland fuels during fire season—meters*							
		Dry climate (25 percent relative humidity)				*Damp climate (75 percent relative humidity)*			
		Class I	*Class II*	*Class III*	*Class IV*	*Class I*	*Class II*	*Class III*	*Class IV*
KILO/1,000	Air	15,600	14,200	12,900	10,700	14,200	14,200	11,900	8,900
	Impact	7,800	7,200	6,600	5,600	7,200	7,200	6,200	4,800
LIMA/2,000	Air	20,600	18,800	17,000	14,000	18,800	18,800	15,600	11,800
	Impact	10,100	9,400	8,600	7,100	9,400	9,400	7,900	6,100
MIKE/5,000	Air	29,300	26,700	23,300	20,200	26,700	26,700	22,500	16,800
	Impact	14,000	12,900	11,800	9,900	12,900	12,900	10,900	8,500

NOTE: These radii apply to all HOB. For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 11.7d.

CRATER DIMENSIONS (See Note.)

Yield KT	*Approx crater dimensions for various soil types—meters*							
	Hard rock (Granite and sandstone)		*Soft rock (dry soil or soft rock)*		*Saturated soil (water slowly fills crater)*		*Saturated soil (water rapidly fills crater)*	
	Radius	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*	*Radius*	*Depth*
KILO/1,000	156	29	196	36	293	54	391	26
LIMA/2,000	197	35	246	43	369	65	492	30
MIKE/2,000	267	43	334	54	501	81	668	38

NOTE: Based on contact surface burst, for more detailed analysis, see engineer element.

Figure 11.7e.

[1]Strategic Bomber.

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CHAPTER 12

ATOMIC DEMOLITION MUNITIONS

12.1. GENERAL

a. Orientation:

(1) This chapter contains necessary effects data for the normal tactical use of atomic demolition munitions (ADM) on the surface or in shallow underground emplacements. When time is available for deliverate planning of major demolitions with the larger yield munitions, the engineer element determines the desirability of special deep underground emplacements (e.g., in tunnels) and/or the effects that can be expected against target elements not included in this chapter.

(2) Materiel damage is the primary objective for ADM's. For this reason, the categories of materiel targets have been increased substantially in this chapter compared to the categories for other weapons. Variations in structural qualities and standards for targets such as buildings, underground structures, bridges, and equipment preclude a precise prediction of effects radii. Although in this chapter, the ADM effects radii are taken to be valid within ± 25 percent, variations in structural qualities may increase this uncertainty to ± 50 percent.

b. Employment capabilities.

(1) Yield. ADM's are available with yields of Alfa/0.5 KT, Bravo/1 KT, Delta/5 KT, Echo/10 KT, Golf/50 KT, and Hotel/100 KT.

(2) Fuzing. ADM's can be detonated on the surface, in underground or in underwater emplacements using a time fuze. The time can be varied in 10-minute increments from 10 minutes to 1 hour and in 30-minute increments to 12 hours.

(3) Preinitiation. See figure 13.7 for the necessary considerations when a multiple weapon attack is desired.

c. Employment capabilities.

(1) Tactical system accuracy. There is assumed to be no delivery error for ADM's, permitting a simpler tabulation of weapon effects.

(2) Response time. As a basis for general tactical planning, two hours should be considered the time for a reasonably well-trained crew, operating in daylight under favorable conditions, to prepare and emplace a munition on the surface or a previously prepared emplacement. Night operations, enemy interference, or severe weather conditions may extend this time. This time does not include travel time. For detailed tactical planning, the time required for emplacement should be obtained from the engineer unit concerned.

(3) Special considerations. The target analyst needs no special information for target analysis. The fire mission to the unit includes the GZ and any special emplacement instructions.

d. Fallout. Fallout is an important consideration in the employment of any ADM. With the larger munitions, it may be a major consideration. While radioactive contamination of the crater area increases the effectiveness of ADM's no data are included for induced radiation since it will be greatly overshadowed by fallout.

ADM[1]

[1]Atomic Demolition Munitions.

SEVERE DAMAGE RADII—METERS

Materiel classification	Yield–KT					
	ALFA/.5	BRAVO/1	DELTA/5	ECHO/10	GOLF/50	HOTEL/100
Tunnels and mines Heavy masonry or concrete dams and bridges	50	50	125	175	225	300
Tanks and artillery Locomotives Supply depots Engineer earthmoving equip Field fortifications	75	100	175	250	450	600
Engineer truck-mounted equip Earth-covered surface shelters Blast-resistant reinforced concrete bldgs	100	100	200	250	400	525
Military vehicles Railroad cars Communications equip Truss and floating bridges Monumental-type multistory wall-bearing bldgs Heavy steel frame industrial bldgs Multistory, reinforced concrete frame bldgs	150	200	375	500	950	1,250
Oil storage tanks Multistory, reinforced concrete bldgs (small window area) Multistory, steel frame office bldgs Light steel frame industrial bldgs	250	300	475	650	1,125	1,425
Multistory, wall-bearing bldgs (apt house type) Parked combat aircraft	375	450	800	1,000	1,700	2,125
Wood frame bldgs	375	650	1,050	1,325	2,275	2,875

Figure 12.1.

MODERATE DAMAGE RADII—METERS

Materiel classification	Yield–KT					
	ALFA/.5	BRAVO/1	DELTA/5	ECHO/10	COLF/50	HOTEL/100
Tanks and artillery Field fortifications	100	125	225	300	550	750
Earthmoving and truck-mounted engr equip Locomotives Military vehicles Earth covered surface shelters	125	175	325	450	850	1,100
Railroad cars Blast resistant reinforced concrete bldgs Truss and floating bridges	175	200	375	500	1,000	1,300
Heavy steel frame industrial bldgs Multistory, reinforced concrete frame bldgs Monumental-type multistory wall-bearing bldgs Multistory, steel frame office bldgs Light steel frame industrial bldgs	250	350	625	800	1,475	1,750
Multistory, reinforced concrete bldgs (small window area) Oil storage tanks Parked combat aircraft	475	600	1,000	1,275	2,175	2,750
Multistory, wall-bearing bldgs (apt house-type)	525	650	1,125	1,450	2,325	3,100
Wood frame bldgs	850	1,000	1,675	2,125	3,700	4,650

Figure 12.2.

CRATER DIMENSIONS (See note.)

Yield KT	Approx crater dimensions for various soil types–meters							
	Soft rock (dry soil or soft rock)		Hard rock (granite and sandstone)		Saturated soil (water slowly fills crater)		Saturated soil (water rapidly fills crater)	
	Radius	Depth	Radius	Depth	Radius	Depth	Radius	Depth
ALFA/.5	16	6	13	5	24	8	31	4
BRAVO/1	20	7	16	6	30	10	39	5
DELTA/5	34	10	27	8	50	15	67	7
ECHO/10	42	12	34	10	63	18	84	8
GOLF/50	72	17	58	14	108	26	144	12
HOTEL/100	91	21	73	17	136	31	182	15

NOTE: Based on contact surface burst, for more detailed analysis, see engineer element.

Figure 12.3.

CRATER DIMENSIONS SUBSURFACE BURSTS (see note)

Yield KT	Approximate crater dimensions for dry soil or soft rock		
	Depth of Burial	Crater Radius	Crater Depth
Alfa/.5	47	46	16
Bravo/1	58	57	19
Delta/5	93	91	31
Echo/10	114	112	38
Golf/50	183	180	61
Hotel/100	225	221	75

NOTE: At the depths of burial indicated, fallout is reduced to one hundredth of that from a contact surface burst.

Figure 12.4

CASUALTY RADII—METERS

Yield KT	Exposed Personnel		Protected Personnel	
	Prompt	Delayed	Prompt	Delayed
ALFA/.5	425	675	500	500
BRAVO/1	575	775	400	600
DELTA/5	800	1,050	625	625
ECHO/10	900	1,175	700	925
GOLF/50	1,300	1,475	925	1,175
HOTEL/100	1,725	1,725	1,075	1,300

Figure 12.5

FIRE AREAS (See note.)

Yield KT	Expected radii for ignition of wildland fuels during fire season–meters							
	Dry climate (25 percent relative humidity)				Damp climate (75 percent relative humidity)			
	Class I	Class II	Class III	Class IV	Class I	Class II	Class III	Class IV
ALFA/.5	500	500	400	400	500	500	400	400
BRAVO/1	700	600	500	500	600	600	500	400
DELTA/5	1,200	1,100	1,000	800	1,100	1,100	900	700
ECHO/10	1,500	1,400	1,300	1,100	1,400	1,400	1,200	900
GOLF/50	2,800	2,600	2,300	2,000	2,600	2,600	2,200	1,600
HOTEL/100	3,500	3,200	3,000	2,500	3,200	3,200	2,800	2,100

NOTE: For description of fuel classes, see FM 101-31-1, app III, annex F.

Figure 12.6

TREE BLOWDOWN (See note.)

All distances in meters

Yield KT	OBSTACLES TO MOVEMENT							CASUALTIES TO EXPOSED PERSONNEL		
	Foot and wheeled vehicle movement				Tracked vehicle movement					
	Type I	Type II	Type III	Type IV	Type I	Types II, IVa(d)	Types III, IVa(f)	Type I	Types II, IVa(d)	Types III, IVa(f)
ALFA/.5	150	200	200	350	150	200	200	150	200	200
BRAVO/1	200	300	300	500	200	300	300	200	300	300
DELTA/5	400	600	600	1,000	400	600	600	400	600	600
ECHO/10	600	800	900	1,350	600	800	900	600	800	900
GOLF/50	1,200	1,550	1,700	2,650	1,200	1,550	1,700	1,200	1,550	1,700
HOTEL/100	1,700	2,000	2,250	3,400	1,700	2,000	2,250	1,700	2,000	2,250

NOTE: These radii apply to contact aurface burata. For general deacription of foreat stand typea and criteria, see FM 101-31-1, app III, annex F.

Figure 12.7

LIGHT AIRCRAFT IN FLIGHT (See note 1.)

Yield KT	AIRCRAFT SAFETY RADII–meters (See note 2)		
	Light fixed wing	Recon and obsn hel	Transport and util hel
ALFA/.5	4,000	4,000	4,000
BRAVO/1	5,000	5,000	5,000
DELTA/5	9,000	9,000	7,000
ECHO/10	10,000	10,000	9,000
GOLF/50	17,000	16,000	15,000
HOTEL/100	22,000	21,000	18,000

NOTES: 1. Theae radii apply to contact aurface burata. See FM 101-31-1, app III, annex F.
2. A buffer distance has been added to these radii of safety.

Figure 12.8

TROOP SAFETY DISTANCES

In all caaea fallout (1 cloud diameter added to fallout plot) will govern in determination of minimum safe distances. Table below shows distances for INITIAL effecta only

Yield KT	Minimum Distance Required for Troop Vulnerability and Degree of Risk Shown								
	Unwarned Exposed Personnel			Warned Exposed Personnel			Warned Protected Personnel		
	NEG Risk	MOD Risk	EMER Risk	NEG Risk	MOD Risk	EMER Risk	NEG Risk	MOD Risk	EMER Risk
ALFA/.5	1,500	1,300	1,000	1,500	1,300	1,000	1,200	1,000	800
BRAVO/1	1,700	1,400	1,200	1,700	1,400	1,200	1,400	1,200	1,000
DELTA/5	2,100	1,700	1,400	2,100	1,700	1,400	1,700	1,400	1,200
ECHO/10	2,600	1,900	1,600	2,200	1,900	1,600	1,800	1,500	1,300
GOLF/50	4,900	3,800	3,300	3,200	2,300	1,900	2,400	1,800	1,600
HOTEL/100	6,400	5,000	4,400	4,200	2,700	2,200	3,000	2,300	1,700

Figure 12.9

ADM 1

[1]Atomic Demolition Munitions.

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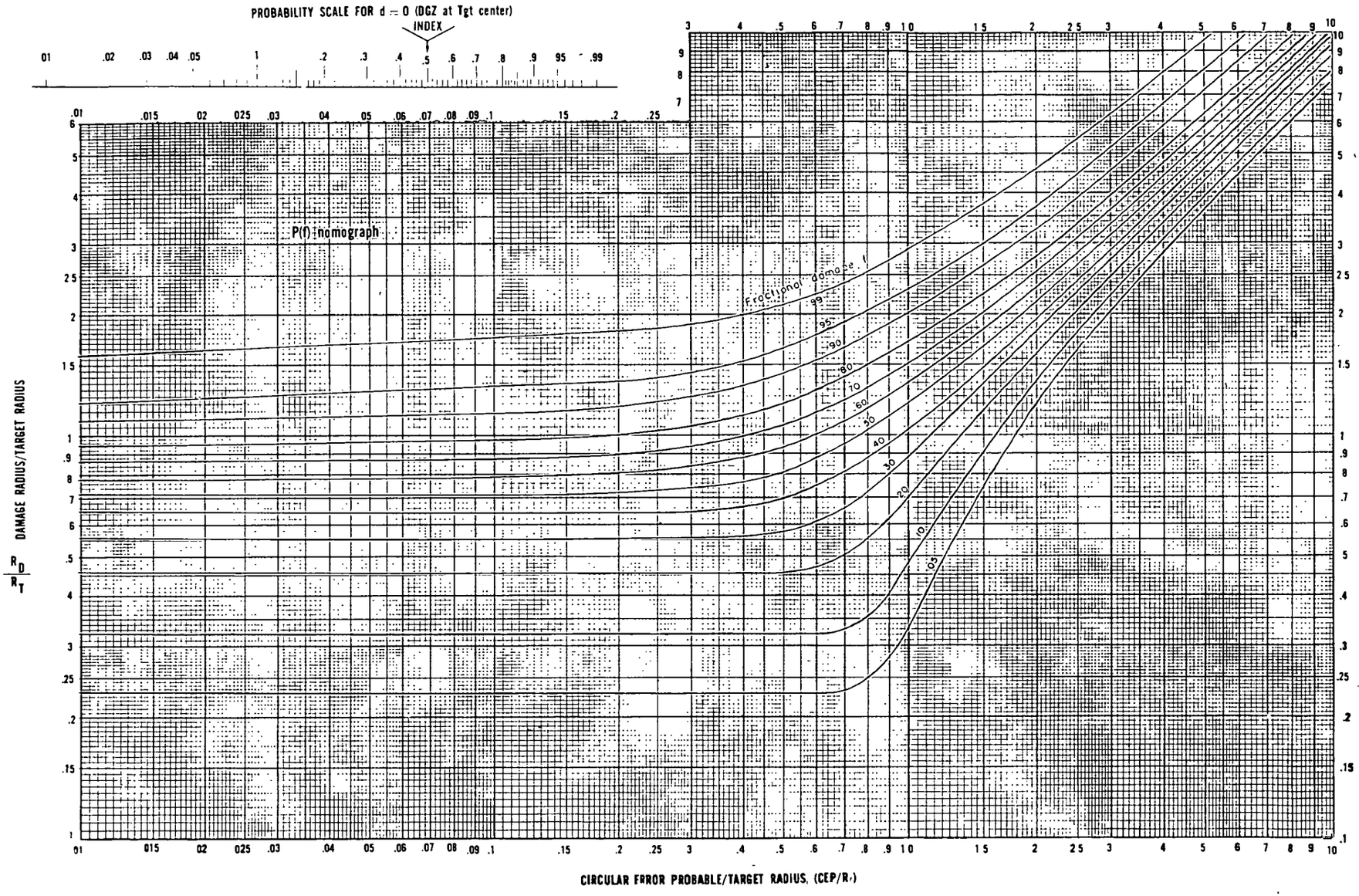

Figure 13.1. P(f) nomograph.

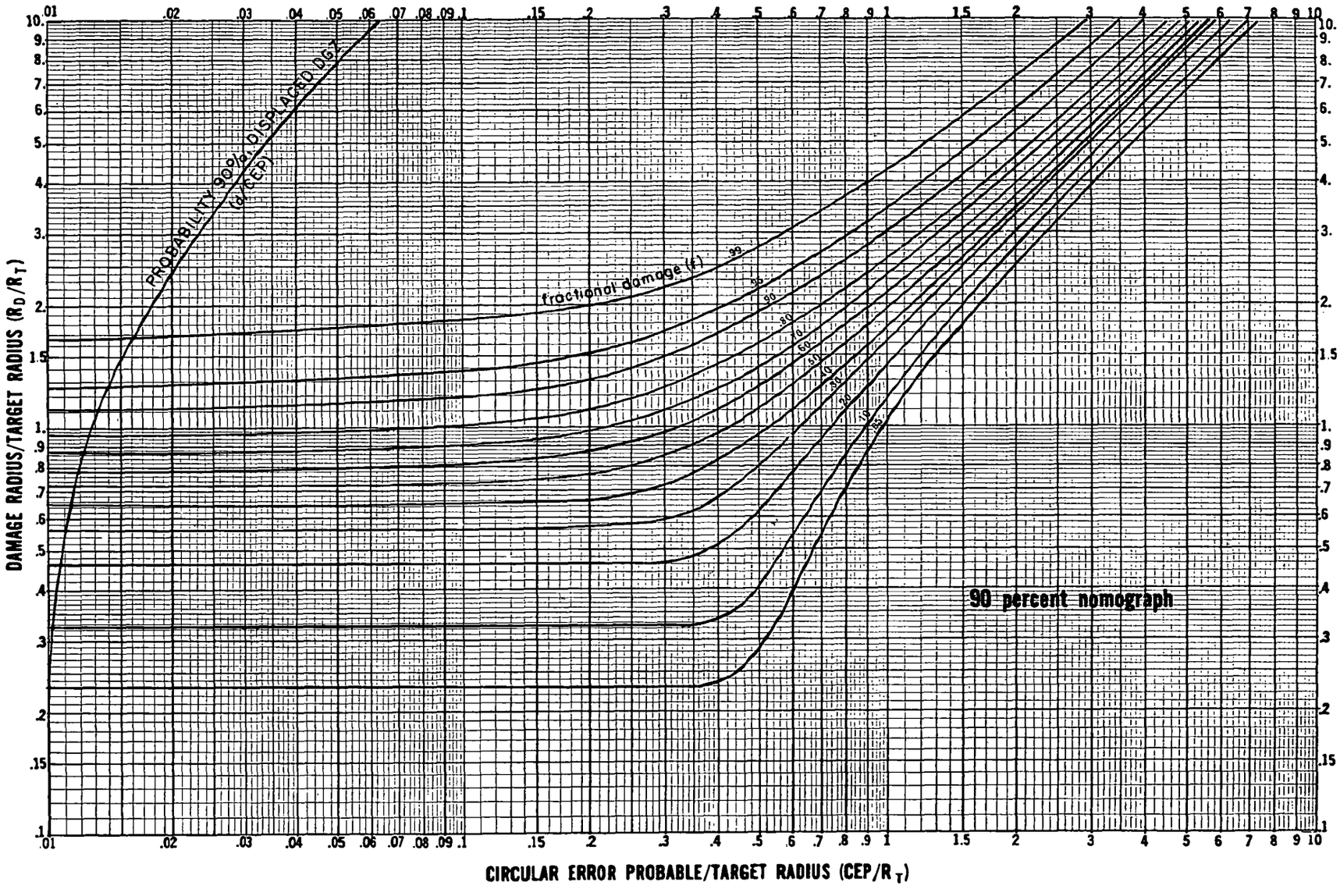

Figure 13.2. 90 percent nomograph.

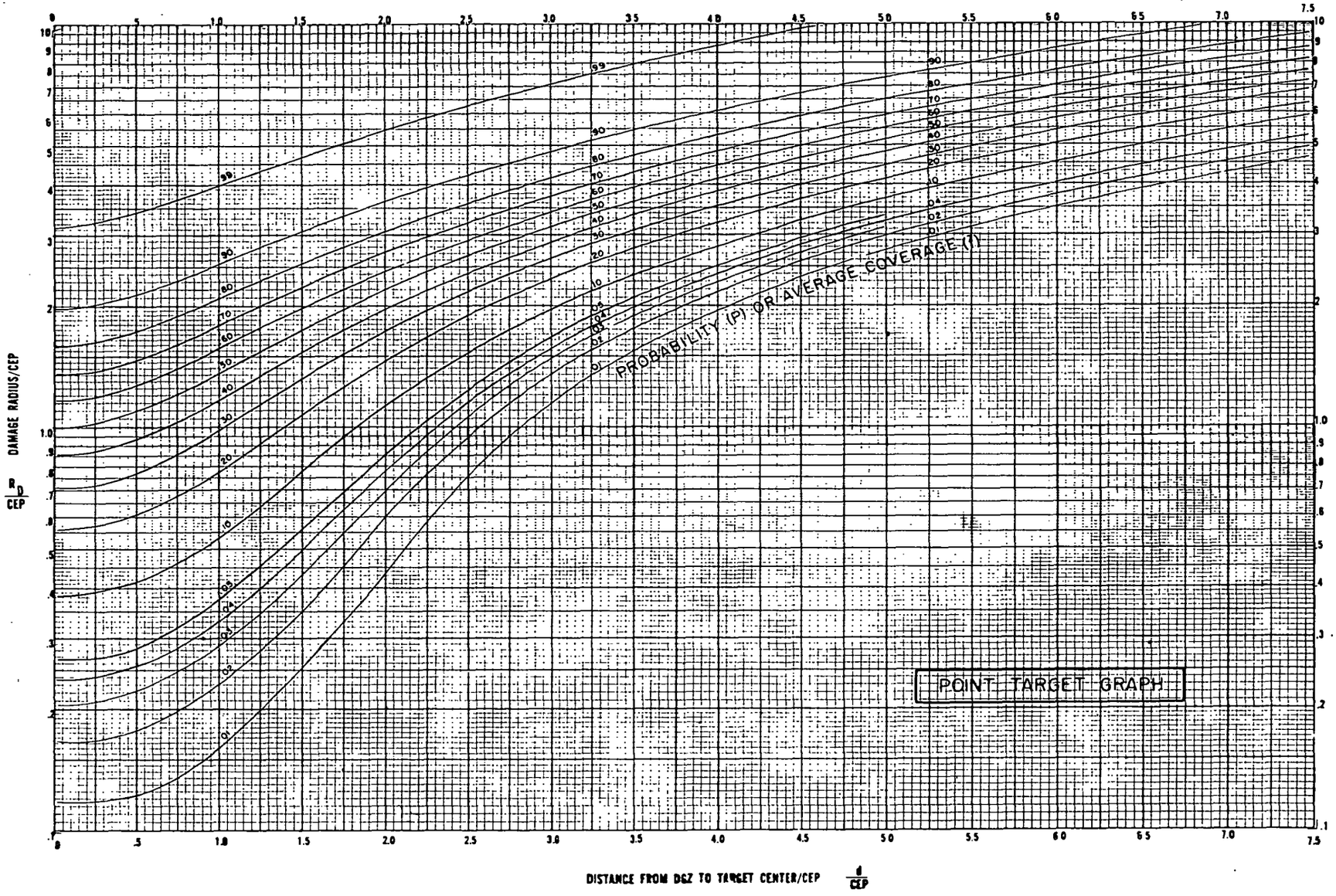

Figure 13.3. Point target graph.

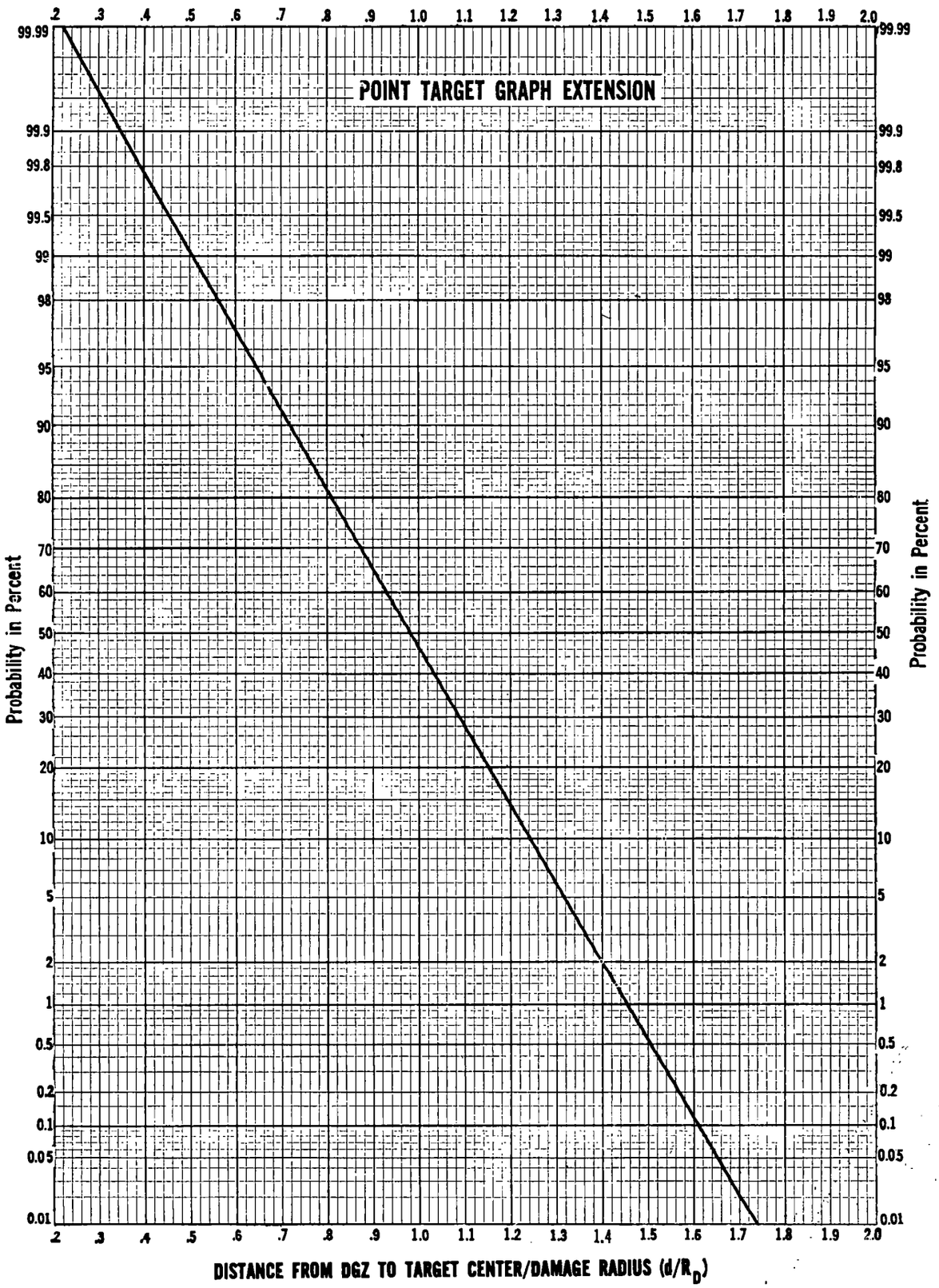

Figure 13.4. Point target graph extension.

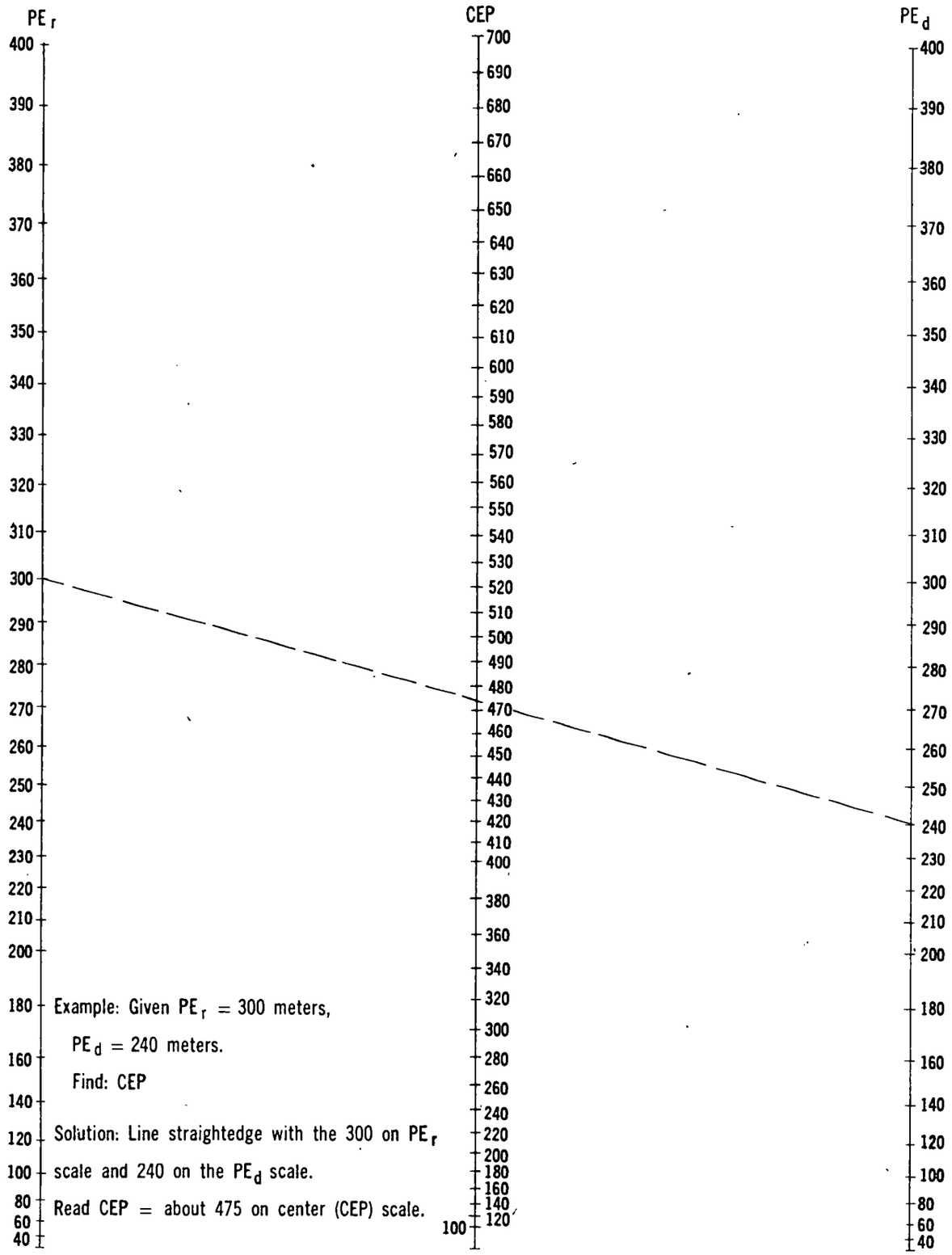

Figure 13.5. Conversion of PE to CEP.

TRANSMISSION FACTORS FOR NUCLEAR RADIATION

1. The total dose of radiation received from a particular burst depends upon the amount of protection afforded the target by the surrounding material. The transmission factor (TF) is a measure of the amount of radiation passing through the materials surrounding the target in relation to the total radiation received by the protective material. Stated in equation form—

a. Transmission factor $= \frac{\text{inside dose of radiation}}{\text{outside dose of radiation}}$

To determine the total dose of radiation to be received by a particular target, the equation is solved for the inside dose by multiplying the transmission factor times the outside dose.

b. Inside dose = transmission factor times outside dose.

This general equation applies to either initial radiation or residual radiation. The value of the transmission factor varies with the material and type of radiation. Figure 13.6 shows the transmission factors for various types of protection for both initial radiation and residual radiation.

2. The following illustrative example explains the application of the transmission factors for initial nuclear radiation:

a. Problem. A nuclear weapon is planned for employment on a target consisting of personnel in foxholes. At a distance of 1,300 meters from desired ground zero, the outside dose of radiation is predicted to be 4,000 rad of which 2,500 rad can be attributed to initial gamma radiation and the remaining 1,500 rad to initial neutron radiation. Determine the total dose of radiation received by personnel in foxholes 1,300 meters from the desired ground zero.

b. Solution.

(1) Obtain the TF's from figure 13.6 for personnel in foxholes, initial radiation.

(*a*) For gamma, transmission factor = 0.2.

(*b*) For neutron, transmission factor = 0.3.

(2) The total dose of radiation is obtained by applying equation 1*b* for each type of radiation in turn.

(*a*) Gamma radiation dose = 0.2 × 2,500 rad = 500 rad.

(*b*) Neutron radiation dose = 0.3 × 1,500 rad = 450 rad.

(*c*) Total radiation dose = 500 rad + 450 rad = 950 rad.

3. The following illustrative example explains the application of the TF's for residual radiation.

a. Problem. In crossing an area contaminated by fallout radiation, it is estimated that an individual unprotected in the open would receive 300 rad total dose. The average outside dose rate is 100 rad/hr at H + 1. Assuming that armored carriers are available and that the time in the area remains unchanged, what total dose of radiation is received inside of the carrier and what average dose rate exists inside the carrier?

b. Solution.

(1) Obtain the transmission factor from figure 13.6 for armored carriers, residual radiation. TF = 0.6.

(2) The total dose of radiation is obtained by applying equation 1*b*. Total dose = 0.6 × 300 rad = 180 rad.

(3) The dose rate of radiation inside of the armored carrier can be obtained in the same manner since equation 1*b* applies equally to dose rates. Dose rate = 0.6 × 100 rad/hr = 60 rad/hr.

Protection	Initial		Residual
	Neutrons	Gamma	
Armored carrier	0.7	0.7	0.6
Built-up city area (in open)	1.0	0.5	0.7*
Foxholes	0.3	0.2	0.1
Frame house			
First floor	1.0	0.9	0.5
Basement	0.5	0.3	0.1
Multistory buildings			
Top floor	1.0	0.9	0.1
Intermediate floors	0.9	0.9	.02
Lower floor	0.9	0.5	0.1
Basement	0.5	0.3	.01
Shelter, closed (3 ft earth cover)	0.05	0.02	0.005
Tanks			
Light	0.3	0.2	0.2
Medium	0.3	0.1	0.1
Trucks			
1/4-ton	1.0	1.0	0.8
3/4-ton	1.0	1.0	0.7
$2\frac{1}{2}$-ton	1.0	1.0	0.6
4-7 ton	1.0	1.0	0.5
Woods	1.0	1.0	0.8*

Figure 13.6. Transmission factors for nuclear radiation.

*Note: These transmission factors do not apply to ground survey doses.

Minimum separation between bursts in meters	Minimum delay in minutes
Less than 1,000	3
1,000	2
2,500	1.5
5,000	1
7,500	0.5
10,000	0

Figure 13.7a. Minimum waiting time between bursts.

NOTE: Use only for weapons found in FM 101-31-3. DO NOT USE with FM 101-31-2.

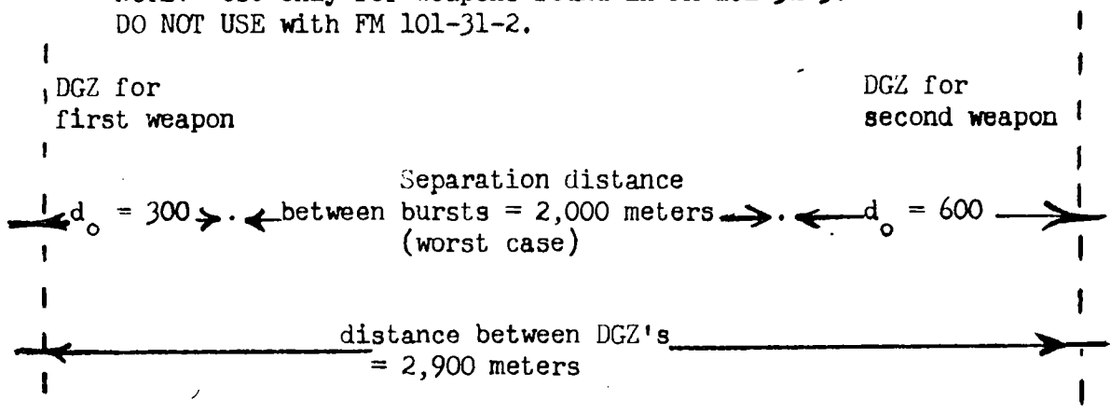

Figure 13.7b. Separation of bursts.

The following problem demonstrates the use of figure 13.7a:

a. Given: (1) Two weapons are to be employed. Their DGZ's are 2,900 meters apart.

(2) d_o for the first weapon is 300 meters.

(3) d_o for the second weapon is 600 meters.

b. Find: Minimum time between bursts.

c. Answer: 2 minutes.

d. Solution: (1) Reference to figure 13.7a indicates that for bursts between 2,500 meters and 5,000 meters apart, a 1.5 minute time delay is required. However, the first weapon may burst right of its DGZ, or the second weapon may burst left of its DGZ. In order to reduce the probability of preinitiation, the time-space separation requirement must consider this circumstance.

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(2) As shown in figure 13.7b, the first round may land 300 meters (d_o) right of DGZ. The second round may land 600 meters (d_o) left of its DGZ. From these facts, it can be seen that the weapons could land as close together as 2,000 meters (2,900-(300 + 600)).

(3) Entering figure 13.7a, it can be seen that for a separation distance of less than 2,500 meters, a delay of 2 minutes is required.

Yield (KT)	Personnel			Materiel (See note)	
	Exposed		Protected (tanks or foxholes)	Military wheeled vehicles (moderate damage)	Tanks and artillery (moderate damage)
	No thermal protection	With thermal shielding			
ALFA/.5	950	950	750	200	125
BRAVO/1	1,200	1,200	950	250	150
CHARLIE/2	1,300	1,300	950	325	200
DELTA/5	2,000	1,375	1,100	500	300
ECHO/10	2,950	1,525	1,200	650	400
FOXTROT/20	3,500	1,825	1,325	875	525
GOLF/50	5,800	3,375	1,500	1,250	750
HOTEL/100	7,700	3,625	1,650	1,650	975
INDIA/200	10,475	5,025	2,350	2,175	1,300
JULIETT/500	15,600	7,400	3,175	3,150	1,850
KILO/1,000	20,900	10,000	4,025	4,150	2,450
LIMA/2,000	27,400	13,500	5,075	5,475	3,250
MIKE/5,000	38,400	20,000	6,900	7,900	4,675

NOTE: For other materiel targets with response similar to wheeled vehicles or tanks and artillery, see figure IV.3.

Figure 13.8 Vulnerability radii (R_V) for analysis of own vulnerability.

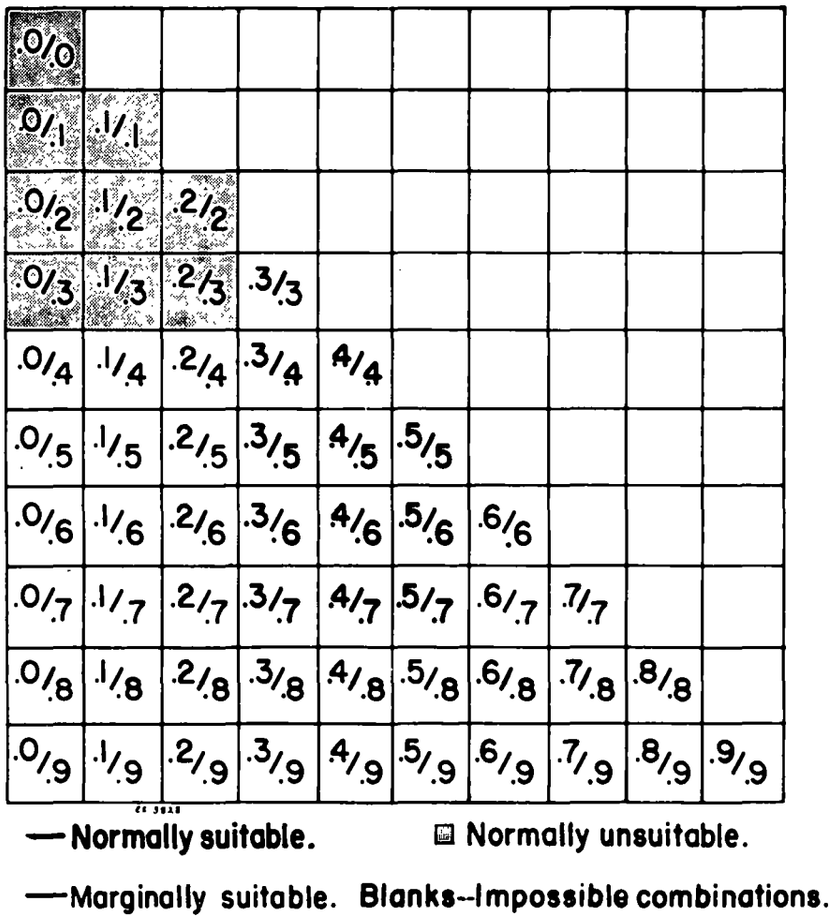

Figure 13.9 Combined coverage indexes. (Color codes shown are for destruction.)

Exposed personnel	Protected personnel	Wheeled military vehicles	Tanks and artillery
Primary: Personnel in the open. Thermal effects not considered.	Primary: Personnel in foxholes.	Primary: Moderate damage to wheeled vehicles.	Primary: Moderate damage to tanks and other track mounted combat vehicles and artillery.
	Secondary: Personnel in basements. Personnel in armored vehicles for yields less than 200 KT.	Secondary: Moderate damage to railroad cars, LVT's and DUKW's on land, truck mounted engineer equipment and missile and rocket launchers. Severe damage to radios, fire-control equipment and concertina entanglements.	Secondary: Personnel in armored vehicles for yields of 200 KT or greater. Moderate damage to infantry weapons, track mounted engineer equipment and railroad locomotives. Severe damage to supply dumps, telephones, switchboards, double apron barbed wire, and highway, railroad and float bridges.

Figure 13.10. Target vulnerability categories.

By Order of the Secretary of the Army:

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Chief of Staff.

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NG: State AG (3).
USAR: Div (2).
For explanation of abbreviations used, see AR 320-50.

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