Mobility:
US Equipment Reference Data

US COMBAT MOBILITY SUPPORT EQUIPMENT

OVERVIEW

This appendix describes the capabilities and limitations of selected equipment that can be employed for support of mobility activities (figures B-1 through B-18 and tables B-1 through B-10). Special consideration must be given to the operation of equipment on the winter battlefield, This includes the effectiveness of mine detection equipment and mine emplacement in snow and frozen ground, the effects of water and mud freezing on linkages and connectors, and the problem of equipment that becomes frozen in the ground. These are real problems in those areas above line B, figure 9-9 on page 9-15. This information will provide maneuver and engineer commanders (and their staffs) a means of estimating the following:

- Equipment required for support of mobility activities.
- Logistical and operational restrictions which apply to each mobilty support system.

MINE DETECTING SETS

The AN/PRS 7 and AN/PSS 11 are hand-held mine detectors. The AN/PRS 7 is capable of detecting metallic and nonmetallic land mines in any type of terrain or soil. The AN/PSS 11 is capable of detecting metallic land mines which are smaller and buried deeper. Each mine detector is issued to combat, combat support, and combat service support units throughout the US Army. The hand-held mine detector is operated by one soldier. To prevent fatigue, this operator should be rotated every 20 minutes. The AN/PRS 7 has been improved to increase detection rates and to reduce false alarms in arid environments. The new lithium battery for the AN/PRS 7 has increased operational life. The rate at which mines can be detected is dependent upon the terrain, proximity of the Threat, weather, and operator training. A

path 7 feet (2.1 meters) wide by 492 feet (150 meters) can be swept in 41 minutes if the operator is not under fire and/or no mines are discovered during the operation. The improved AN/PRS 7 has been designated the AN/PRS 8.

Figure B-1

BANGALORE TORPEDO

The bangalore torpedo is a portable, antipersonnel mine-breaching device dating back to World War II. It is used by engineer troops or dismounted personnel for rapid minefield breaching and wire cutting. The bangalore torpedo is a class five item drawn, as required, for hasty minefield breaching. The bangalore torpedo kit consists of ten 1.5-meter/5-foot tubes, each containing 4 kilograms (9 pounds) of explosive and weighing 5.9 kilograms (13 pounds). It clears a path 0.6 meters (1.9 feet) long through antipersonnel mines only. It is not reliable for cutting high tensile-strength barbed wire obstacles. Detonation is accomplished by either electric or nonelectric blasting caps. When screened from enemy observation, one soldier can assemble and push one kit into a minefield in 26 to 34 minutes. One-hundred meters of bangalore torpedo would require 3.5 to 4.5 personnel-hours. For logistics planning, one 2 ½-ton truck can transport a maximum of 25 bangalore torpedo kits.

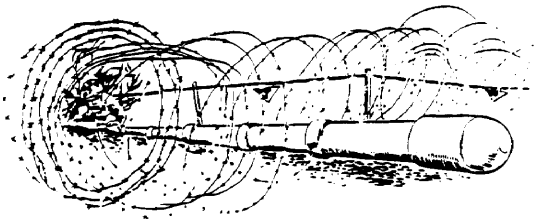


Figure B-2

M173 PROJECTED CHARGE DEMOLITION KIT

The projected charge demolition kit M173 is an antitank minefield-clearing device stored and transported in a boat-shaped container. It is designed to be towed to the edge of a minefield for rapid minefield breaching. The M173 contains 675 kilograms (1,500 pounds) of composition C-4, total weight 1,395 kilograms (3,100 pounds). It clears a path 4.6-meters (26.2 feet) wide and 70-meters (272.2 feet) long. Detonation is accomplished remotely from inside the towing vehicle, utilizing the 24-volt direct current (DC) electrical system. The M173 is a class five item, drawn as required. The device can be palletized or packaged to permit ready transport. Each kit can be towed over land or water by a land or amphibious vehicle. Each kit requires 0.5 personnel-hours for assembly. Both the assembler and components are vulnerable to small arms fire, indirect artillery fire, direct weapons fire, and NBC environment. For each M173 kit, one 2 ½-ton truck would be required for movement. Successive kits can be used for longer breaches. The charge can be fired from the back of a cargo truck.

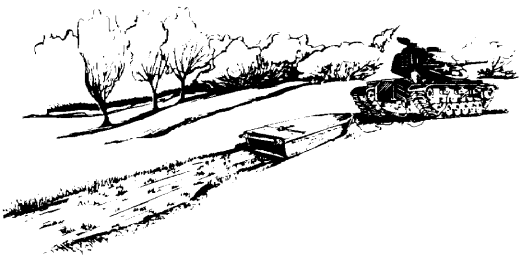


Figure B-3

TRACK-WIDTH MINE-CLEARING ROLLER (TANK-MOUNTED)

This system provides armor units an organic capability to breach and proof lanes through minefields. The roller neutralizes single pulse, pressure-actuated mines in the track path of the pusher tank. A "dog-bone" and chain assembly clears tilt rod actuated mines between the roller banks. A quick disconnect feature is provided which allows the tank driver to disconnect the roller from within the tank. The tank crew, using the hand-winch

assemblies, can mount the roller to the tank in 15 to 30 minutes during daylight. The mine roller consists of a roller assembly, mounting kit, and hand-winch kit. The roller assembly weighs approximately 20,000 pounds and consists of two push beams, mounted to the front of an M-1/M60 series tank. Each beam pushes a carriage assembly containing five roller wheels. The mounting kit contains a hydraulic pump, lines, a quick disconnect mechanism, and a mounting bracket. When not attached to a tank, the roller is transported on M172A1 lowboy trailers pulled by M818 tractors.

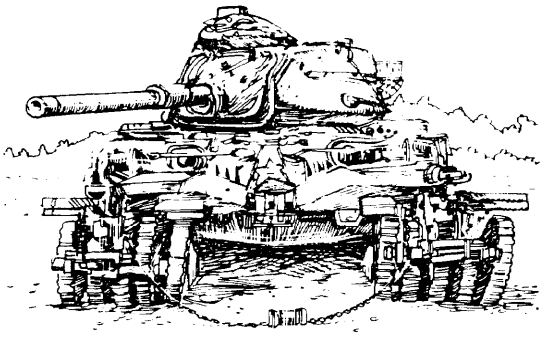


Figure B-4

M-728 COMBAT ENGINEER VEHICLE

The combat engineer vehicle (CEV) is a full tracked armored vehicle which can provide engineer support in the forward combat area while under fire. Although the CEV consists of a tank hull and a turret with a 165-millimeter demolition gun, its primary role is that of an assault weapon used to destroy bunkers and other fortified positions. It is not designed to be employed as a tank. The CEV's 165-millimeter ammunition is a high explosive plastic round made up of a composition charge. When employed in forward areas, the CEV requires protection by tanks or other armored assault vehicles. The CEV is equipped with a dozer blade and is effective in clearing rubble and obstructions. The CEV has a gas particulate filter system for removal of toxic gases and provides the occupants protection against nuclear attack roughly equivalent to a 4-foot deep defensive position with overhead cover.

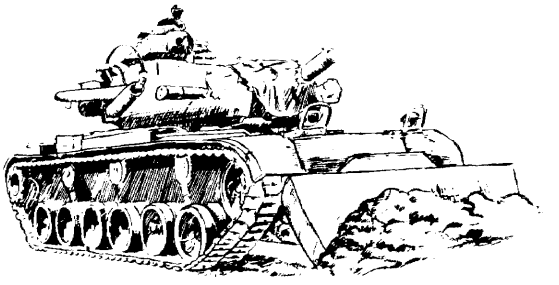


Figure B-5

M9 ARMORED COMBAT EARTHMOVER

The M9 armored combat earthmover (ACE) is capable of performing several battlefield mobility tasks. It can be employed to fill craters and prepare crossing sites at gaps. The ACE is also capable of removing obstacles such as roadblocks, trees, and rubble while maintaining combat roads and trails. The major vehicle systems are a scraper-dozer-hauling front-end and rear-end-installed winching system. The M9 provides light armor and chemical agent protection for the operator and key components. It is capable of 30 miles-per-hour (mph) road speeds on level terrain (when unballasted). The M9 also has an amphibious capability and can be air-transported by C-130, C-141, and C5A aircraft.

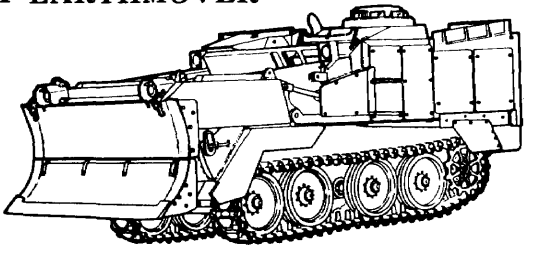


Figure B-6

M-113A1 ARMORED PERSONNEL CARRIER

The M-113A1 armored personnel carrier (APC) is a full-tracked vehicle designed to transport troops or cargo. The APC is capable of amphibious operations, extended cross-country travel, and high-speed operation on roads and highways. Because of its low net weight, it is air-transportable and droppable. Each APC is capable of pulling a 1 ½-ton trailer containing engineer equipment and supplies. The APC replaces the 5-ton dump truck as the combat engineer squad vehicle in mechanized engineer units. The APC is equipped with a gas particulate filter unit designed to be used with the M25A1 tank protective mask. With its air filtration system and light armor protection, the APC has limited ability to operate in an NBC environment. Equipped with the 50-caliber machine gun, the APC can provide suppressive fire and a limited air defense capability.

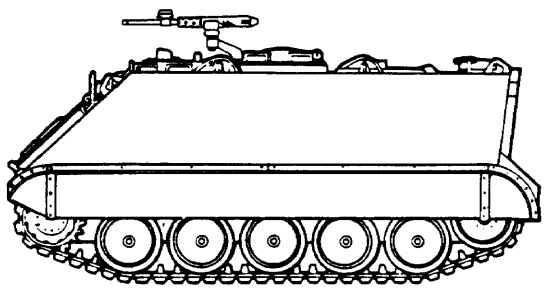


Figure B-7

FIVE-TON DUMP TRUCK

The 5-ton dump truck is a wheeled vehicle designed for use over all types of roads and cross-country terrain. With its 5-cubic yard-capacity dump body, it provides earth and hauling capability for the engineer. It also can be used as a prime mover for several US Army trailers and is used as the squad vehicle in most nondivisional engineer companies to carry troops and tools. The 5-ton dump truck has no weapon system so it must operate with an armed co-operator or in proximity to armed units. Also, it has no air filtration system for occupants and offers no protection against NBC attack. If equipped with a winch, it can serve in small-vehicle recovery operations (including self-recovery) and in removal of obstacles or debris.

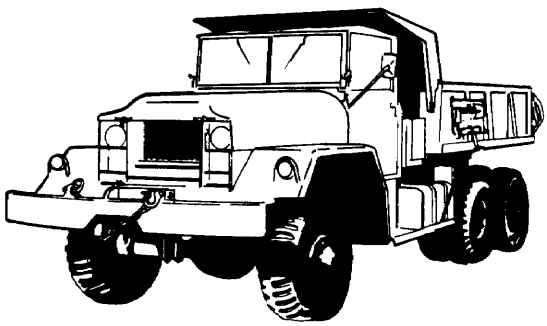
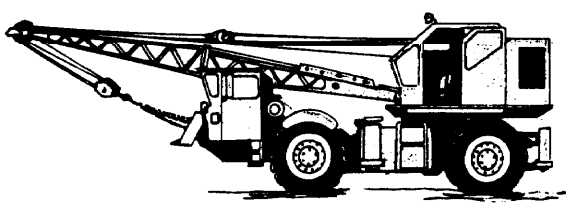


Figure B-8

TWENTY-TON CRANE

The 20-ton rough terrain crane provides the engineer with lifting and loading capability. It is operated with the standard hook block, dragline, clamshell, and pile driver attachments. These attachments make it useful in all vertical construction missions. It is also used in removing rubble in built-up areas and to assist in construction of float and fixed bridges. During operations, the outrigger

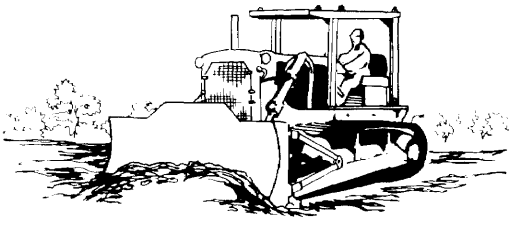


must be employed to prevent the crane from flipping over. The crane is not protected in a hostile environment. Both the operator and critical mechanical components are vulnerable to small arms fire, indirect artillery fire, and direct fire weapons. It has no capability for crew survival in an NBC environment.

Figure B-9

TRACTOR, D7/D8

The crawler tractor, commonly known as the bulldozer, is the engineer's basic earthmoving system. It is used for dozing, excavating, grading, land clearing, and a wide variety of construction and support operations. It is capable of working in adverse terrain conditions. The military model D7 and D8 tractors are equipped with a power shift transmission, a hydraulically-operated dozer blade, and a rear-mounted winch or ripper. The D7 tractor, with an operating weight of 50,000 pounds, 200-horsepower diesel engine, and drawbar pull of 39,000 pounds, is classified as a

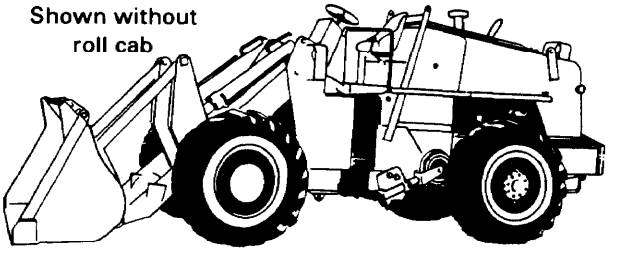


medium-size tractor. The D8 tractor, with an operating weight of 83,000 pounds with ripper, 300-horsepower diesel engine, and drawbar pull of 56,000 pounds, falls into the heavy class.

Figure B-10

SCOOP LOADERS

The scoop loader is a diesel engine self-contained unit mounted on large rubber tires. The hydraulically-operated scoop bucket is attached to the front of the loader by means of a push frame and lift arms. It may be used as a one piece general purpose bucket, a rock bucket, or a multisegment (hinged jaw) bucket. The multisegment bucket can be utilized as a clamshell, dozer, scraper, or scoop bucket. The current military engineer scoop loaders range from 2 ½- to 5-cubic yard rated capacity. They are employed in the majority



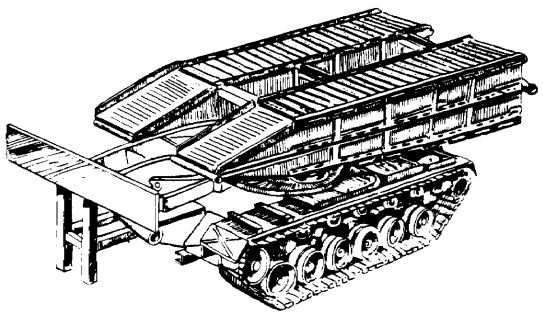
of engineer organizations including airborne/airmobile (ABN/AMBL) unit and the combat heavy battalion.

Figure B-11

ARMORED VEHICLE LAUNCHED BRIDGE

The armored vehicle launched bridge (AVLB) is mounted on a full-tracked armored vehicle. It provides assault bridging capability for maneuvering tank and mechanized battalions. The AVLB is employed primarily in hasty crossings of short gaps by combined arms teams and is particularly suitable for spanning narrow streams, antitank ditches, craters, canals, partially blown bridges, and similar obstacles. The bridge may be placed over existing bridges or portions of existing bridges to increase the load-carrying capacity

of these bridges. It may also be used with components of the M4T6 class 60 bridge to rapidly construct rafts. The bridge can be launched without exposing the crew to hostile fire and can be retrieved from either end. The carrier, based on an M60 tank chassis, has a gas particulate filter system designed to remove toxic gases that are present in contaminated NBC areas. The AVLB has no operable weapon system and therefore must operate in close proximity to the maneuver force for its protection. The AVLB has the following characteristics:



Transportation

- Bridge carried on launcher (modified M48 or M60 chassis)
- Maximum speed 43 kph/30 mph
- Spare bridge folded on low-bed trailer
- Twenty-ton crane transfers bridge (15 ton) to launcher in 20 to 30 minutes

Emplacement

- Launched in 2 to 5 minutes by 2-person crew
- Retrieval is possible from either end of bridge
- Crew must allow .9 m/3 ft bearing for unprepared abutment; .5m/1.5 feet for prepared and stable abutment (on each bank)

Capacity

- One class 60 vehicle crossing at a time
- Bridge span is 19.2 m (63 ft)
- 18.3 m (60 ft) using prepared abutments
- 17.4 m (57 ft) using unprepared abutments

Limitations

- Launch requires 10 m (32.8 ft) overhead clearance
- Maximum launch slope
- Uphill - 2.7 m/9 ft(15 percent)
- Downhill - 2.7 m/9 ft (15 percent)
- Sideslope - .3 m/1 ft (8 percent)

Figure B-12

LIGHT TACTICAL RAFT

The light tactical raft (LTR) is a hand-erectable, aluminum roadway supported by aluminum pontoons. The LTR is used in combat areas for wet gap crossing of light vehicles. It can also be erected into a float bridge providing the same support capability. Short fixed spans can be assembled from the LTR set to provide a means of crossing narrow streams or dry gaps with light vehicles and equipment. The maximum span length for fixed span configuration is 11.5 meters (38 feet). An LTR set consists of four pontoons and four deck bays. The entire set can be transported by two 2 ½-ton trucks with a pole trailer. Soldiers used in assembly and rafting operations will be vulnerable to small arms fire, indirect artillery fire, direct weapons fire, and an NBC environment.

MILITARY LOAD CLASS								
CLEAR SPAN			CLASS					
meters		(feet)	NORMAL		CAUTION		RISK	
6.1	-	(20)	(21)	17	(25)	19	(32)	23
6.7	-	(22)	(18)	15	(20)	17	(23)	19
7.3	-	(24)	(16)	13	(18)	15	(20)	17
7.9	-	(26)	(14)	12	(18)	14	(16)	16
8.5	-	(28)	(12)	11	(14)	13	(16)	15
9.1	-	(30)	(11)	10	(12)	12	(16)	14
9.7	-	(32)	(10)	9	(11)	11	(15)	13
10.3	-	(34)	(9)	8	(10)	10	(13)	12
10.9	-	(36)	(8)	7	(10)	9	(11)	12
11.5	-	(38)	(7)	7	(9)	9	(10)	11

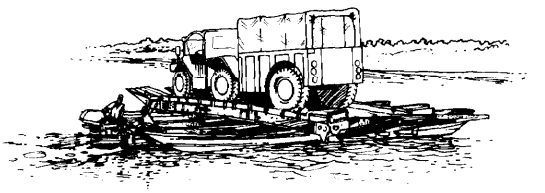


Figure B-13

Notes:
Figure in parentheses represents wheel load class.
Second figure represents tracked load class.

MILITARY LOAD CLASS												
TYPE ASSEMBLY	TYPE CROSSING	CURRENT VELOCITY mps(fps)						ASSEMBLY TIME	LOADING SPACE	
		1.5 (5)	2 (7)	2.5 (8)	2.75 (9)	3 (10)	3.5 (11)			
RAFT										
4 pontoon/3 bay	N	12	12	12	8	4	0			
w articulators	R	14	14	14	12	8	4			
4 pontoon/3 bay	N	16	16	12	8	4	0	25 min	9.15 m	(30 ft)
wo articulators	R	20	20	16	12	8	4			
4 pontoon/4 bay	N	10	10	10	6	2	0	35 min	12.5 m	(41 ft)
w articulators	R	12	12	12	10	6	2			
5 pontoon/5 bay	N	9	9	9	8	5	2	40 min	15.84 m	(52 ft)
w articulators	R	11	11	11	11	9	6			
5 pontoon/5 bay	N	16	14	11	8	5	2	35 min	15.85 m	(52 ft)
wo articulators	R	19	17	15	12	9	6			
6 pontoon/4 bay	N	13	13	13	13	12	5	45 min	12.5 m	(41 ft)
w articulators	R	15	15	15	15	15	11			
6 pontoon/4 bay	N	17	17	17	17	16	9	40 min	12.5 m	(41 ft)
wo articulators	R	24	24	24	24	17	11			
6 pontoon/5 bay	N	18	18	18	18	12	6	45 min	15.85 m	(52 ft)
wo articulators	R	22	22	22	22	17	11			
BRIDGE	C	18	15	12	9	6	3			
	N	16	13	11	8	5	2	60 min	45.7 m	(150 ft)
	R	21	17	14	11	8	5			

Notes:
1. Type crossing legend: N = Normal, R = Risk, C = Caution.
2. Roadway width is 2.7 m (9 ft).
3. Assembly in wet gap must figure draft of erection boats: OBM = 0.6 m (2 ft) — BEB = 1 m (3.3 ft).

Table B-1

M4T6 FLOATING/FIXED BRIDGE

The M4T6 floating/fixed bridge is used in combat areas for wet/dry gap crossings of heavy vehicles. The M4T6 requires secure riverline assembly sites, exclusive combat engineer labor, and more time than newer systems. This system will normally supplement or provide backup for the ribbon bridge, mobile assault bridge, AVLB, and MGB which can be installed in less time. The M4T6 is a hand-erectable, air-transportable bridge system capable of carrying class 60 loads. The M4T6 features a pneumatic float with an aluminum roadway composed of interlocking pieces (balk). One set of M4T6 floating bridge is approximately 142 feet in length. Soldiers used in assembly and bridging and rafting operations will be vulnerable to small arms fire, indirect artillery fire, direct weapons fire, and an NBC environment.

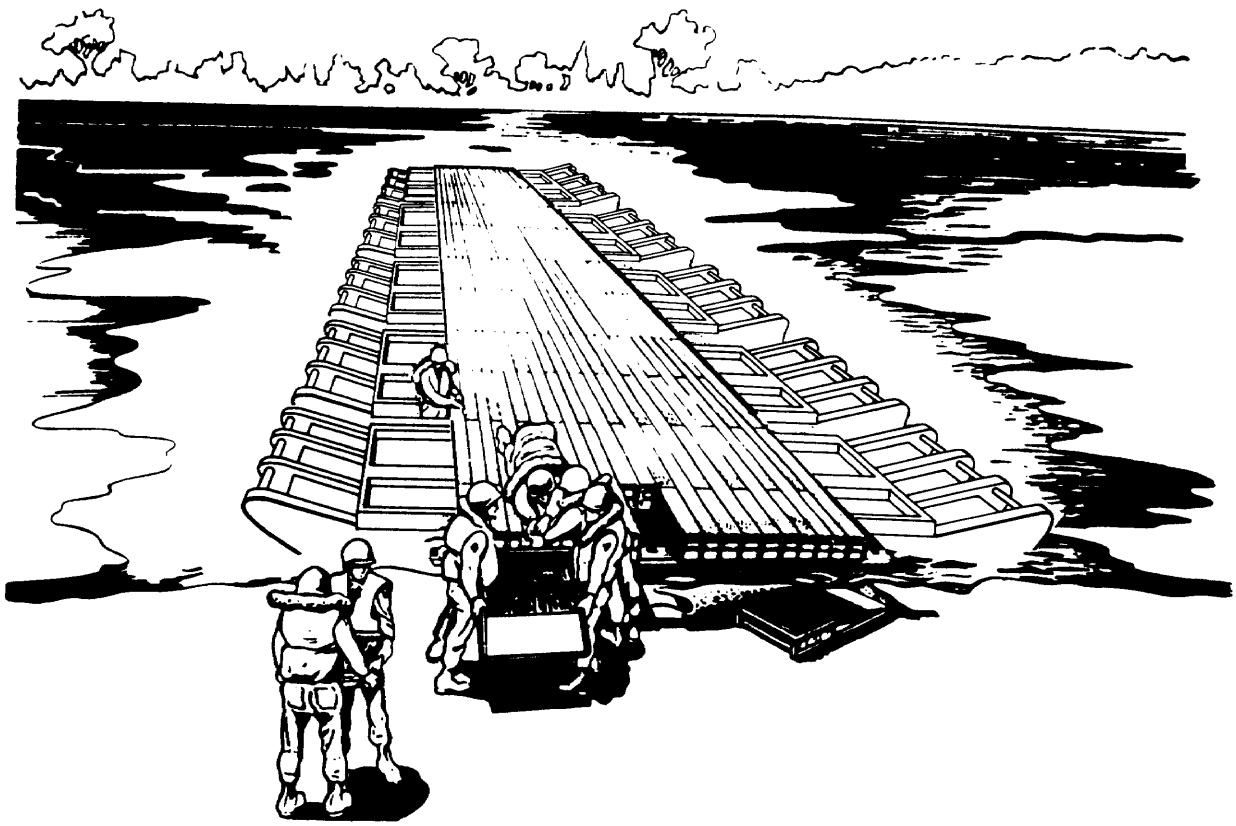


Figure B-14

CAPABILITIES	ASSEMBLY CREW/TIME	RAFT	LOAD SPACE	CURRENT VELOCITY m/s (f/s) 1.5 (5)	2 (7)	2.5 (8)	3.5 (11)
RAFT: One set makes: - One 4-float normal raft (4N) AND one 5-float normal (5N) raft - OR one 4-float reinf raft (4R) AND one 5-float reinf (5R) raft - OR one 6-float reinf (6R) raft	1. Per 4 float raft: - 5 brg trks - 2 power boats (27 ft) - 1 plt, 2¼ hr - (When preassembled, 1¼ hr) 2. Per 5 float raft: - 6 brg trucks - 2 power boats (27 ft) - 1 plt, 3 hr - (When preassembled, 1½ hr) 3. Per 6 float raft: - 7 brg trucks - 2 power boats (27 ft) - 1 plt, 3¾ hr - (When preassembled, 1¾ hr) 4. All assembly times are estimated using trained troops in daylight with good weather conditions.	4N	15.7 m (51.6 ft)	50 55	45 50	40 45	30 35
		5N	20.3 m (66.6 ft)	55 60	50 55	45 50	35 40
		4R	11.6 m (38.3 ft)	50 55	50 55	45 50	35 40
		5R	15.2 m (50 ft)	60 65	60 65	55 60	45 50
		6R	16.2 m (53.3 ft)	65 70	65 70	65 70	45 50

BRIDGE: One set makes 43.2 m (142'), normal construction, no of floats =

(Gap [m] + 2) + 10% / 4.6

OR

(Gap [ft] + 2) + 10% / 15

Reinforced construction, no of floats =

(Gap [m] + 2) + 10% / 3

(Gap [ft] + 2) + 10% / 10

RIVER WIDTH Length m (ft) (Normal assy)		SUGGESTED UNIT SIZE	NUMBER OF ASSY SITES	TIME (Hours)
45.5	(150)	1 company	2	4
61	(200)	1 company	2	5
76	(250)	1 company	2	6
91.5	(300)	2 companies	3	4
106.5	(350)	2 companies	3	5
122	(400)	2 companies	4	5½
152	(500)	2 companies	5	6
183	(600)	3 companies	6	4
213	(700)	3 companies	6	5-7
244	(800)	3 companies	6	6-8
305	(1,000)	3 companies	6	7-10
366	(1,200)	3 companies	6	8-12

CROSSING RATE

200 vehicles per hour with 30 m (100 ft) spacing and 16 km/h (10 mph)

NORMAL BRIDGE			
45	40	35	35
55	50	45	30

REINFORCED BRIDGE			
75	70	65	27
75	75	70	70

Notes:
1. Roadway is 4 m (13.2 ft) wide.
2. When assembled at river, 36 x 39.5 m (120 x 130 ft) area required.
3. Air compressor, 2 bridge erection boats (BEB), and crane needed per raft/bridge construction site.
4. Draft of raft/bridge 0.7 m (2 ft 5 in).
5. Draft of bridge erection boat = 1 m (3.3 ft).
6. Normal site preparation and anchorage concurrent with assembly time.

Table B-2

RIBBON BRIDGE/RAFT

The ribbon bridge is a modular, floating bridge/raft system made of aluminum alloy. A complete bridge set of 10 interior bays and 2 ramp bays will span a gap of 76.4 meters (252 feet). Each bay is transported, launched, and retrieved from a modified M812 5-ton truck. The ribbon bridge can be emplaced rapidly under all conditions of visibility. For increased mobility, the bays and ramps are designed for helicopter delivery. Soldiers used in assembly and bridge/rafting operations will be vulnerable to small arms fire, indirect artillery fire, direct weapons fire, and an NBC environment.

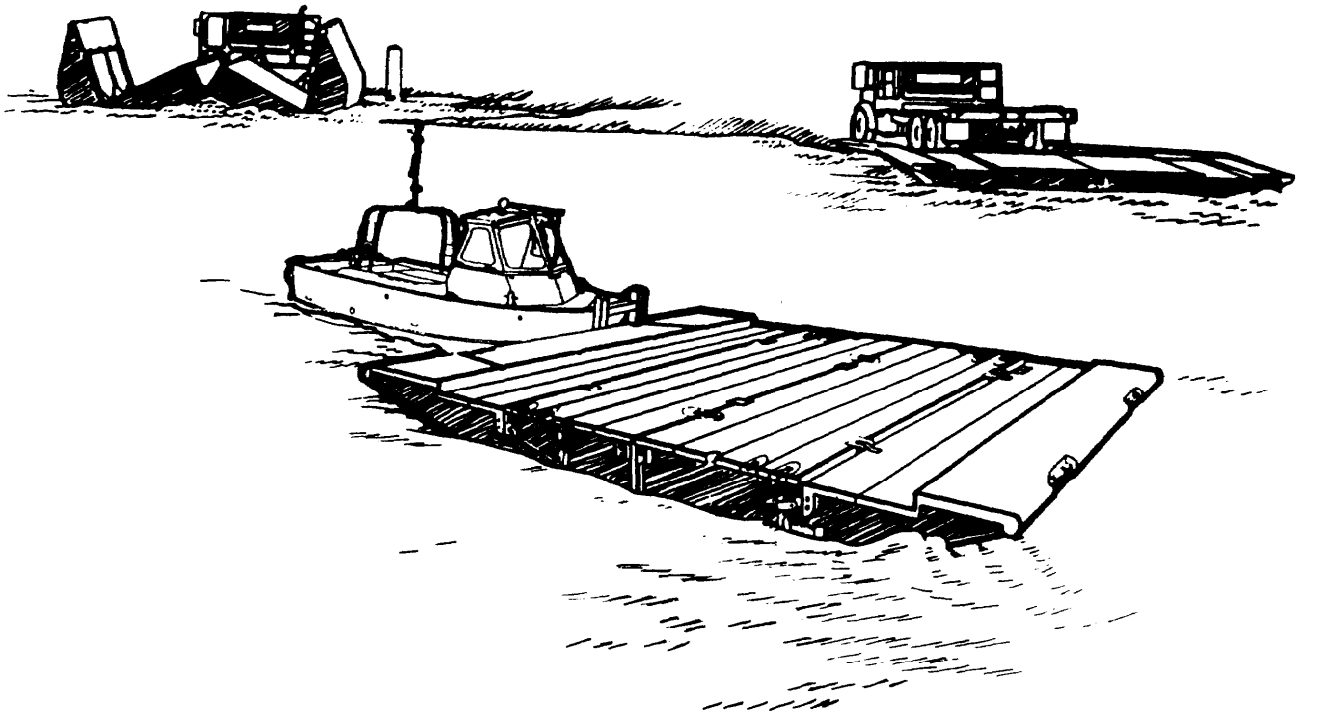


Figure B-15

CAPABILITIES	ASSEMBLY TIME	LOAD SPACE		CURRENT VELOCITY 0.9 0.3	1.2 4	1.5 5	1.75 6	2 7	2.5 8	2.7 8	3 m/s 10 f/s
RAFT							LOAD CLASS				
3 bay	8 min	6.7 m (22 ft)	L	45	45	45	40	40	35	30	25
			C	45	45	35	25	15	10	0	
4 bay	12 min	13.4 m (44 ft)	L	70	70	70	60	60	60	55	45
			C	60	60	60	[4]55	[4]40	[4]30	[4]15	0
5 bay	15 min	20.1 m (66 ft)	L	75	75	75	70	70	70	60	60
			C	75	70	70	[4]70	[4]60	[4]50	[4]25	0
6 bay	20 min	26.8 m (88 ft)	L	W96/ T80	96/ 80	96/ 80	96/ 70	96/ 70	96/ 70	70/ 70	70/ 70
			C	W96/ T75	96/ 70	96/ 70	[4]70/ 70	[4]70/ 70	[4]55 55	[4]30/ 30	0

Notes:
1. L = Longitudinal C = Conventional
2. 3, 4, and 5 bay are wheeled or tracked rating; 6 bay as shown.
3. For longitudinal rafting, current velocity in loading areas must not exceed 1.5 m/s (5 f/s)
4. Use 3 BEBs for propulsion and 2 BEBs for all others.

BRIDGE

No of interior bays =	200 m/hr (600 ft/hr)	96/ 75	96/ 75	96/ 70	96/ 70	82/ 70	65/ 60	45/ 45	30/ 30

$\frac{\text{Gap (m) - 14}}{6.7}$ or $\frac{\text{Gap (ft) - 45}}{22}$

All assembly times are estimated using trained troops in daylight with good weather conditions.

Notes:
1. Caution and risk values are available
2. Anchorage with 1 x BEB per 6 bays in currents up to 2.5 m/s (8 f/s).
3. Anchorage with 1 x BEB per 2 bays in currents of 2.7 m/s (9 f/s). Above 2.7 m/s (9 f/s) use bridle line 15 degrees vertical angle.
4. Vehicle spacing = 100 ft (front to back).
   Speed - Ramps = cl 0-40 - 15 mph
   over cl 40 - 5 mph
   Bridge = cl 0-40 - 25 mph
   over cl 40 - 15 mph

Notes:
1. Each bay transported on modified 5-ton truck.
2. Bridge erection boats transported on cradle on 5-ton truck.
3. MLC of loaded truck is 17.
4. Assembled by crew.
5. Loaded ribbon raft draft:
   Bay 0.6 m (24 in)
   Bridge boat (RREB) 1 m (40 in)
6. Adding pallet to off-loaded truck gives secondary cargo mission (pallet carries 6½ tons in tipping mode and 9½ tons as flatbed.)

Table B-3

MOBILE ASSAULT BRIDGE

The mobile assault bridge (MAB) is a self-propelled, amphibious unit that can be linked rapidly to form floating bridges or rafts of various sizes and capacities. The MAB provided the Army with its first "drive into the water" raft and bridging capability. All transporters have four-wheel drive and four-wheel steering. The MAB can travel on hard-surfaced roads at a maximum speed of 65 kilometers per hour and a maximum speed of 10 kilometers per hour off road. The MAB is used in the combat area for multiple river crossings to permit emplaced, high volume stream crossing of armor and supporting heavy tactical loads. It is replaced by standard floating or fixed bridges as soon as the tactical situation permits. During assembly or bridging/rafting operations, soldiers will be vulnerable to small arms fire, indirect artillery fire, direct weapons fire, and an NBC environment.

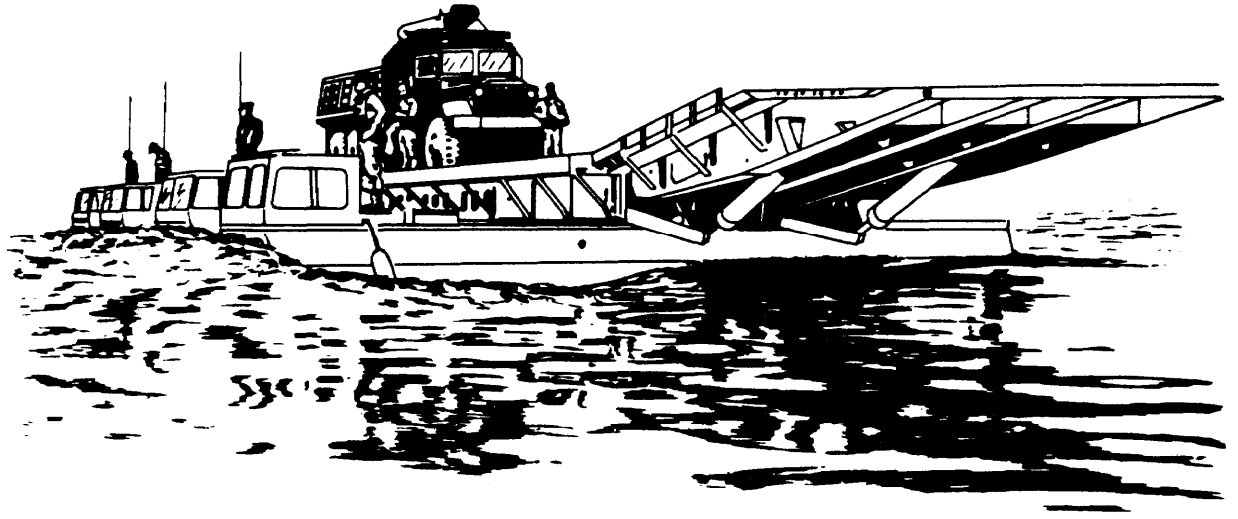
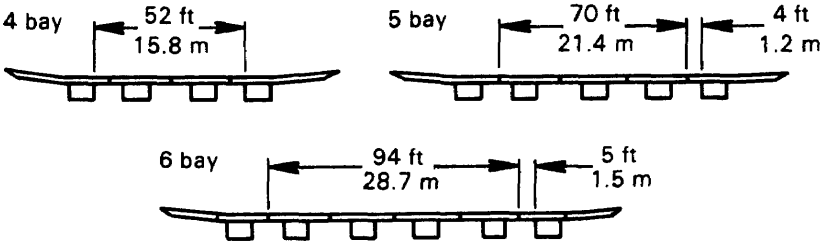


Figure B-16

CAPABILITIES	ASSY TIME	LOAD SPACE	CURRENT VELOCITY 0.9 3 N	1.5 5 N	2.0 7 N	2.5 8 N	2.8m/s 9 f/s N
RAFT				**LOAD CLASS**			
a. 4 bays	10 min	15.8 m (52 ft)	54/ 62 (68*)	54/ 62 (68*)	52/ 58 (64*)	50/ 56 (62*)	48/ 54 (56*)
b. 5 bays	12 min	21.4 m (70 ft)	58/ 62 (78*)	58/ 62 (78*)	56/ 62 (74*)	56/ 62 (72*)	54/ 62 (64*)
c. 6 Bays	15 min	28.7 m (94 ft)	64/ 62 (108*)	64/ 62 (108*)	62/ 62 (108*)	60/ 62 (100*)	54/ 62 (90*)

Note:
Load capacities are maximum multiple vehicle loads. Heaviest vehicles are to be positioned first and at extremities of rafts.



BRIDGE							
No of interior bays =	Average rate 200 m (600 ft) per hr		62	62	55	55	55
$\frac{\text{Gap (m)} - 20}{8}$ OR $\frac{\text{Gap (ft)} - 66}{26}$	All assembly times are estimated using trained troops in daylight with good weather conditions.					1. Anchorage by prop/fluke anchor 2. Traffic rate up to 200 veh/hr at 16kph (10 mph) and 30m (100 ft) spacing.	

Table B-4

MEDIUM GIRDER BRIDGE

The medium girder bridge (MGB) is a hand-erectable, heavy-duty bridge. The primary role of the MGB is for tactical bridging in the forward main battle area. As the situation permits, MGB would be removed and relocated forward to be replaced by other standard or nonstandard bridges. One MGB set contains enough equipment to construct 103 feet of double-story, class 60 bridge or three, 32-foot, single-story military load class 60 bridges. With the use of a link reinforcement kit and two bridge sets, a 163-foot-span bridge can be erected. It requires little, if any, site preparation. The key advantage of the MGB over other fixed bridges is its speed and ease of erection. During assembly, soldiers will be vulnerable to small arms fire, indirect artillery fire, direct weapons fire, and an NBC environment.

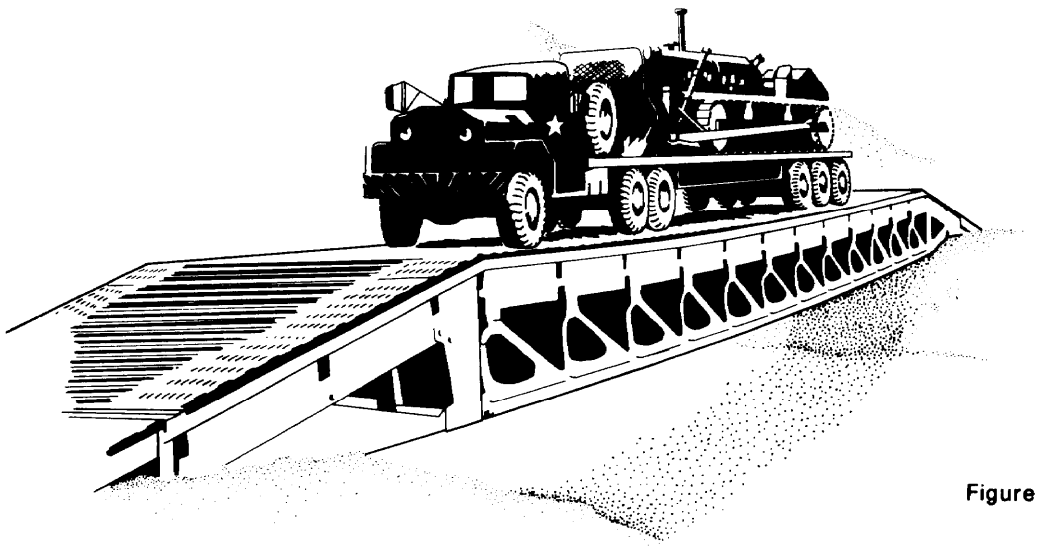


Figure B-17

CAPABILITIES	ASSEMBLY/CAPACITY			
1.83 m (6 ft) increments	Length	Crew	Time	Class
	Normal construction			
Numerous erection combinations	30.5 m	1 plt	2 hr	60
Four 30.5 m (100 ft) bridges or Two 48.8 m (160 ft) bridges per MGB co or 129.4 m (32 ft) bridges	**with cable reinforcement**			
	49.0 m	1 + plt	4 hr	60
	4 m (13.2 ft) roadway			

Notes:
1. 25 x 20 m assembly site required.
2. Only MGB co personnel required for assembly/disassembly.
3. All bridge components palletized.
4. DSMGB less than 12 bays (103 ft) will hold MLC 70.
5. Reinforced DSMGB less than 22 bays (163 ft) will hold MLC 70.

Table B-5

VEHICLE CLASSIFICATIONS

VEHICLE SYSTEMS

Table B-6 depicts the major vehicle systems that could be considered for mobility planning. Division 86 equipment is included.

NOMENCLATURE	HEIGHT (INCHES)	WIDTH (INCHES)	LENGTH (INCHES)	MLC: MILITARY LOAD CLASS	MAX SPEED (MPH)
Carrier, Cargo 6 ton, M548	116	110	248	16	43
Carrier, Command Post, M577A1	106	106	226.5	133	8
Carrier, Mortar; 81mm, M125A1	86.5	106	191.5	13	40
Carrier, Mortar; 107mm, M106A1	86.5	113	194	14	40
Carrier, Personnel, M113A2	86.5	106	191.5	13	40
Cavalry, Fighting Vehicle, M3	118	126	258	24	45
Howitzer 105mm (SP), M109A3	130	143	355	28	35
Howitzer 8 in (SP), M 110A1	135	140	392	32	32
Infantry Fighting Vehicle, M2	118	126	258	24	45
Improved Tow Vehicle, M2	132	106	180	13	42
Tank, Combat 105mm, M-1	118	145	332	60	45
Tank, Combat 105mm, M48A5	129.5	143	325	53	30
Tank, Combat 105mm, M60A1	129.5	143	325	52	30
Tank, Combat 105mm, M60A2	130.5	143	300.5	57	30
Tank, Combat 105mm, M60A3	130	143	325	52	30
Trailer, Water (400 gal), M149	76.5	82.5	83	-	-
Truck, Ambulance, ¼ ton, M713	77	71	143	3	65
Truck, Ambulance, 1½ ton, M792	91	84	227	5	55
Truck, Cargo 1¼ ton, M715	95	85	221	3	60
Truck, Cargo 2½ ton, M35A2	112	96	278.5	8	56
Truck, Cargo 5 ton 6x6, M54A2	116	97	315	10	54
Truck, Cargo 8 ton 4x4, M520	134	108	384	21	30
Truck, Fuel (2500 gal), M559	134	108	391	28	30
Truck, Utility ¼ ton, M151A2	71	64	133	3	65
Truck, Wrecker 5 ton 6x6, M816	114	98	356	18	52
Truck, Wrecker 10 ton 4x4, M553	134	108	401	25	30
Vehicle, Cmbt Engineer, M728	128	146	351	57	30
Vehicle, (light) Recovery, M578	130.5	124	250	25	37
Vehicle, (med) Recovery, M88A1	123.5	135	325.5	55	31
Vehicle, Cmbt Earth Mover, M9	90	150	246	30	30+

Table B-6

OBSTACLE-CROSSING CAPABILITIES

Obstacle Country/Vehicle	A Water Crossing (sub-merged) (M)	B Water Fording (M)	C Height To Clear (M)	D Width To Clear verse	E Max Gap Tra- (M)	F Ground Clear-ance	G Max Step (M)
US/M728 (CEV)	N/A	1.22	3.19	3.59	2.54	.41	.75
US/M113	N/A	Unlimited	2.13	2.68	1.6	.29	.64
US/M-2 & M-3	N/A	Unlimited	2.92	3.04	2.54	.45	.91
US/M60A1	4.11	1.22	3.26	3.63	2.66	.41	.91
US/M60A2	N/A	1.22	3.31	3.63	2.66	.46	.91
US/M48A5	2.43	1.22	3.12	3.63	2.59	.41	.91
US/MI	2.37	1.22	2.89	3.60	2.74	.48	1.24
FRG/LEOPARD2	4.00	2.25	2.93	3.71	3.00	.48	1.15
UK/Centurian	Unk	1.20	2.96	3.40	3.35	.51	.90
UK/Chieftian	4.57	1.07	2.90	3.66	3.15	.51	.91
FR/AMX30	4.00	2.00	2.86	3.10	2.90	.45	.93
US/M728 (CEV)	30	60	2.21	11.8	N/A		
US/M113	30	60	1.78	7.5	N/A		
US/M-2 & M-3	40	60	1.87	11.8	+30/-20 60/-10	(TOW) (25mm)	
US/M60A1	30	60	2.21	11.2	-9/+19		
US/M60A2	30	60	2.21	12.2	-10/+20		
US/M48A5	30	60	2.21	11.8	-9/+19		
US/MI	40	60	2.14	13.4	-10/+20		
FRG/LEOPARD2	30	60	2.15	12.2	-9/+20		
UK/Centurian	30	60	2.19	13.3	-10/+20		
UK/Chieftian	30	60	2.44	11.0	-10/+20		
FR/AMX	30	30	60	1.96	10.9	-8/+20	

Obstacle Country/Vehicle	H Max Tilt (%)	I Max Gradient (%)	J Max Strattle (M)	K Ground Pressure (PBI)	L Depression Elevation (degrees)	
US/M728 (CEV)	30	60	2.21	11.8	N/A	
US/M113	30	60	1.78	7.5	N/A	
US/M-2 & M-3	40	60	1.87	11.8	+30/-20	(TOW)
					+60/-10	(25mm)
US/M60A1	30	60	2.21	11.2	-9/+19	
US/M60A2	30	60	2.21	12.2	-10/+20	
US/M48A5	30	60	2.21	11.8	-9/+19	
US/MI	40	60	2.14	13.4	-10/+20	
FRG/LEOPARD2	30	60	2.15	12.2	-9/+20	
UK/Centurian	30	60	2.19	13.3	-10/+20	
UK/Chieftian	30	60	2.44	11.0	-10/+20	
FR/AMX30	30	60	1.96	10.9	-8/+20	

Table B-7

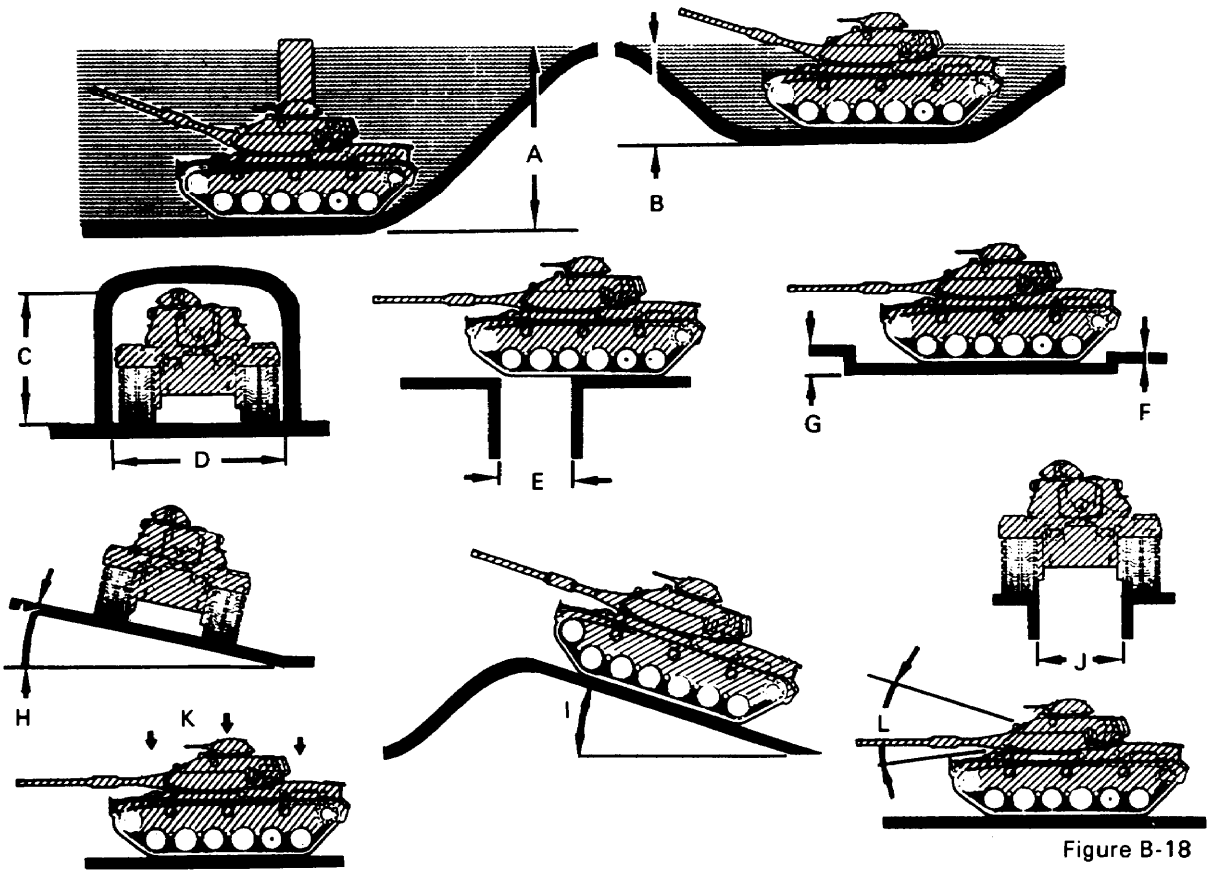


Figure B-18

ARMY AVIATION AND AIR FORCE EQUIPMENT CHARACTERISTICS

ARMY AVIATION

The Army aviation aircraft listed here could be expected to operate in the forward combat areas. The mobility requirements for such operations would include construction of combat landing zones and landing strips. Chapter 8 of this manual provides guidance on the planning and execution of such support. Design specifications are given in TM 5-330. Mobility support to specific types of Army aircraft, fixed wing and rotor, will depend on the tactical situation. Similarly, the location, distribution, and standards of construction will depend on the nature of aviation support and anticipated traffic.

ARMY HELICOPTERS

CHARACTERISTICS	OH-6A CAYEUSE	OH-58A KIOWA	UH-1H IROQUIS	AH-1G COBRA	UH-60 BLACK HAWK	CH-47C CHINOOK	CH-57B TAHRE
Length/fuselage	23.5 ft	32.2 ft	41.9 ft	44.5 ft	50.65 ft	51.0 ft	70.25 ft
Length-blades unfolded	30.3 ft	50.9 ft	57.1 ft	52.9 ft	64.10 ft	99.0 ft	88.4 ft
Width-blades folded	N/A	N/A	N/A	N/A	14.3 ft	12.5 ft	9.6 ft
Width thread	6.8 ft	6.3 ft	8.5 ft	7.3 ft	8.2 ft	10.5 ft	9.6 ft
Height-extreme	8.5 ft	9.5 ft	14.5 ft	11.6 ft	12.3 ft	18.6 ft	25.5 ft
Rescue-hoist capacity	N/A	N/A	600 lb	N/A	600 lb	600 lb	N/A
Winch capacity	N/A	N/A	N/A	N/A	8,000 lb	3,000 lb	25,000 lb
Troop capacity	2	2	11	0	14	33	(pod) 45
Litter capacity	0	2	6	0	6	24	(pod) 24
Maximum weight	2,400	3,000	9,500	9,500	20,250	46,000	47,000
Basic weight	1,163	1,700	4,900	8,404	11,000	19,772	21,000
Loiter time	2 hr 30 min	2 hr 10 min	1 hr 55 min	1 hr 50 min	2 hr 10 min	2 hr	1 hr 40 min

Table B-8

ARMY AIRCRAFT

CHARACTERISTICS	OV-1 MOHAWK	U-8F SEMINOLE	U-21A UTE	C-21A A20000
Length (ft)	41.0	33.3	35.8	43.8
Width (ft)	42.0	45.9	49.9	54.4
Height (ft)	13.0	14.2	14.2	15.4
Basic weight, kips	10.01	5.49	5.38	10.4
Takeoff (maximum weight, kips	14.82	7.2	9.5	12.6
Crew	2	1	2	2
Passenger capacity	0	5	6	10
Takeoff (hard surface sea-level ground run)	1440	1065	1500	1300
Takeoff (hard surface, zero wind, ft to clear 50-ft obstacle)	2330	1660	2000	1850

Table B-9

AIR FORCE EQUIPMENT

The aircraft and characteristics displayed in table B-10 would generally be used throughout the entire theater of operations. Forward aviation mobility support to specific types of aircraft will depend on the tactical situation. Similarly, the location, distribution, and standards of construction will depend on the Air Force mission and types of aircraft involved.

AIR FORCE AIRCRAFT

		DIMENSIONS			PERFORMANCE*	
AIRCRAFT DESIGNATION	NAME	WING SPAN (FT)	LENGTH (FT)	HEIGHT (FT)	TAKEOFF DISTANCE GROUND ROLL (FT)	LANDING DISTANCE GROUND ROLL (FT)
C-7	Caribou	95.6	72.6	31.8	725	825
C-47D	Sky Train	95.0	64.4	16.9	2,900	2,040
C-54G	Sky Master	117.5	93.5	27.8	2,780	1,918
C-123B	Provider	110.5	76.2	34.5	1,810	1,072
C-124A	Globemaster	174.1	130.0	48.6	5,520	3,200
C-124C	Globemaster	174.1	130.0	48.6	5,520	3,200
C-130A	Hercules	132.6	102.1	39.2	3,920	4,440
C-130E	Hercules	132.6	97.8	38.5	3,600	4,150
C-135A	Stratolifter	130.8	128.9	41.8	7,200	3,470
C-135B	Stratolifter	130.8	128.9	41.8	7,200	3,470
C-141B	Starlifter	160.0	168.3	39.25	4,100	3,900

*Ground run lengths indicated are for classification and can undergo changes depending on operating weight of aircraft, pressure, altitude correction, temperature correction, and local conditions.

Table B-10