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INTRODUCTORY SHEET

1 May 1945

The information contained herein has been prepared at Rock Island Arsenal and is based on methods previously employed in the manufacture of the Mount, Tripod, Machine Gun, Caliber .30, M2.

The Ordnance Department, in furnishing the information contained herein, accepts no responsibility either in connection with the use of recommended features and processes, or such operations as may be covered by live patents. Manufacturers and trade names referred to throughout this document are mentioned only for the purpose of identifying the type of equipment used and in no case does it mean that any particular make is being recommended.

The data compiled have been arranged in three parts. Part I consists of a general description of the completed item, photographic views, bills of materials, summary of machine tools, and other pertinent data. Part II consists of a complete set of route sheets showing the necessary operations employed in completing the components, as well as major and sub-assemblies, for the final or general assembly. Inserted ahead of each route sheet is the pertaining drawing. Part III consists of reproducible tool and process gage drawings. While these drawings are considered a part of the Description of Manufacture, they are not included herein for the reason of their considerable volume and different sizes. A complete set is maintained at Rock Island Arsenal, from which duplicate prints may be immediately furnished upon request.

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PART I

GENERAL DESCRIPTION
of the
MOUNT, TRIPOD, MACHINE GUN, CALIBER .30, M2

The Mount, Tripod, Machine Gun, Caliber .30, M2, provides the means of supporting the Browning Machine Gun, Caliber .30, M1919A4 (Flexible) as shown on Page 9. Various other photographic views of the Tripod Mount are shown on Pages 5 to 8, inclusive. The primary mission of this Mount is for ground fire, but it can be used up to a limited angle for anti-aircraft fire.

Rigidity in firing position is obtained by fixed stops and by use of a traversing bar which converts the rear legs into the form of an "A" truss. The traversing bar also forms the rear gun support through the elevating mechanism and in turn serves as the elevating and traversing base. The front of the gun is supported by a pintle which swivels in a tapered bushing housed in the tripod head.

The major units of the Mount consist of the Tripod Head, Front and Rear Legs, Traversing Bar, Elevating Mechanism, and Pintle.

The Tripod Head, Drawing C59331, is a built-up steel construction welded into a unit and machined to seat the pintle bushing, the graduated traversing dial, the pintle lock, and the dial locking screw.

Drawing C59337 shows the Right Rear Leg Assembly. The bodies of both the front and rear legs are made of steel tubing with formed steel feet and spades welded thereon. Steel leg hinges are inserted and welded in the opposite ends of the tubing for connection with the tripod head by means of fitted bolts.

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The Traversing Bar, Drawing C59333, is a graduated case hardened steel bar fastened to the sliding sleeves on the tripod legs and forms the seat for the traversing slide of the elevating mechanism. The Bar is connected by bolts to the sleeves on the rear legs. When folding the rear legs, the sleeve latch is released by pressing down on the handle. The sleeve on the right leg is pushed toward the bottom and the sleeve on the left leg towards the top.

The Elevating Mechanism, Drawing C74620 and cutaway view which is shown on Page 8, consists of a double screw assembly fastened at its upper end to the rear gun yoke by an adapter bolt, and at its lower end to the traversing bar through the traversing slide, which in turn provides the means of controlling elevation. The upper elevating screw is threaded on its outside diameter with a right-hand "Acme" triple thread to fit the threaded inside diameter of the lower elevating screw. The upper screw is made hollow and closed on top by a plug fitted to a light drive fit. Inside the hollow screw at the lower end is assembled the upper elevating screw stop pin. A washer is provided which stops against a shoulder on the inside of the lower elevating screw and thereby prevents disengagement of the upper and lower elevating screws past maximum elevation. The keyway of the upper screw carries an elevating scale with 50 mil divisions, each division represents one complete revolution of the elevating handwheel. The lower elevating screw is threaded on its outside diameter with a left-hand "Acme" triple thread to fit the inside diameter of the sleeve. Provision against disengaging the lower elevating screw and the elevating sleeve is made by means of a stop pin, composed of a flat spring and a rectangular pin fastened to the outside of the elevating sleeve. The pin rides on the outside of the lower elevating screw thread until it snaps into a notch located at the lower end of the thread. A finger grip is provided on the upper end of the spring to disengage the pin from the notch. The upper elevating screw, being connected to the gun yoke, does not revolve but is free to move up and down in the thread of the sleeve which is stationary. Elevation is

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effected by turning the handwheel clockwise. The handwheel is graduated into 50 divisions, each division representing one mil. The click mechanism, located on the inside of the handwheel, is a spring-actuated indexing device consisting of an indexing pawl and spring held in place by a plug. When turning the handwheel it produces a perceptible click caused by the indexing pawl engaging the notches cut in the click ring. Position is registered by the indicator on the graduations. Due to each click representing one mil and each graduation also representing one mil, the gunner is enabled to count the one mil change without referring to the graduations on the handwheel. The traversing slide is locked to the elevating sleeve and clamped in position on the traversing bar by the locking lever. This lever is assembled on the traversing slide locking screw by a serrated joint and is held in place by a flat head screw. This permits the handle being set at any desired angle. The traversing slide lock spring serves to hold the handle at any set position which enables the gunner to set the handle so that the free and clamped positions are constant and more convenient for thumb operation.

Particular attention is invited to difficulties that are likely to be encountered in machining the multiple threads on the elevating and traversing screws. One method has been tried out by the Lamson Corporation, which included turning the threads on both engine and automatic threading lathes. Threading dies have also been considered but found to be impracticable due to the extreme lead of the thread and the necessity of close tolerances. The method employed by Lamson Corporation and recommended by them for use to other contractors, is to finish the external threads from blanks on accurate semi-automatic threading lathes. Contractors who do not have such facilities and personnel experienced in this class of work should endeavor to sublet this work to concerns who have these facilities or make a speciality of thread cutting. The method employed in the past at Rock Island Arsenal which proved highly successful, was to rough and finish grind the threads from blanks in J & L automatic thread grinders.

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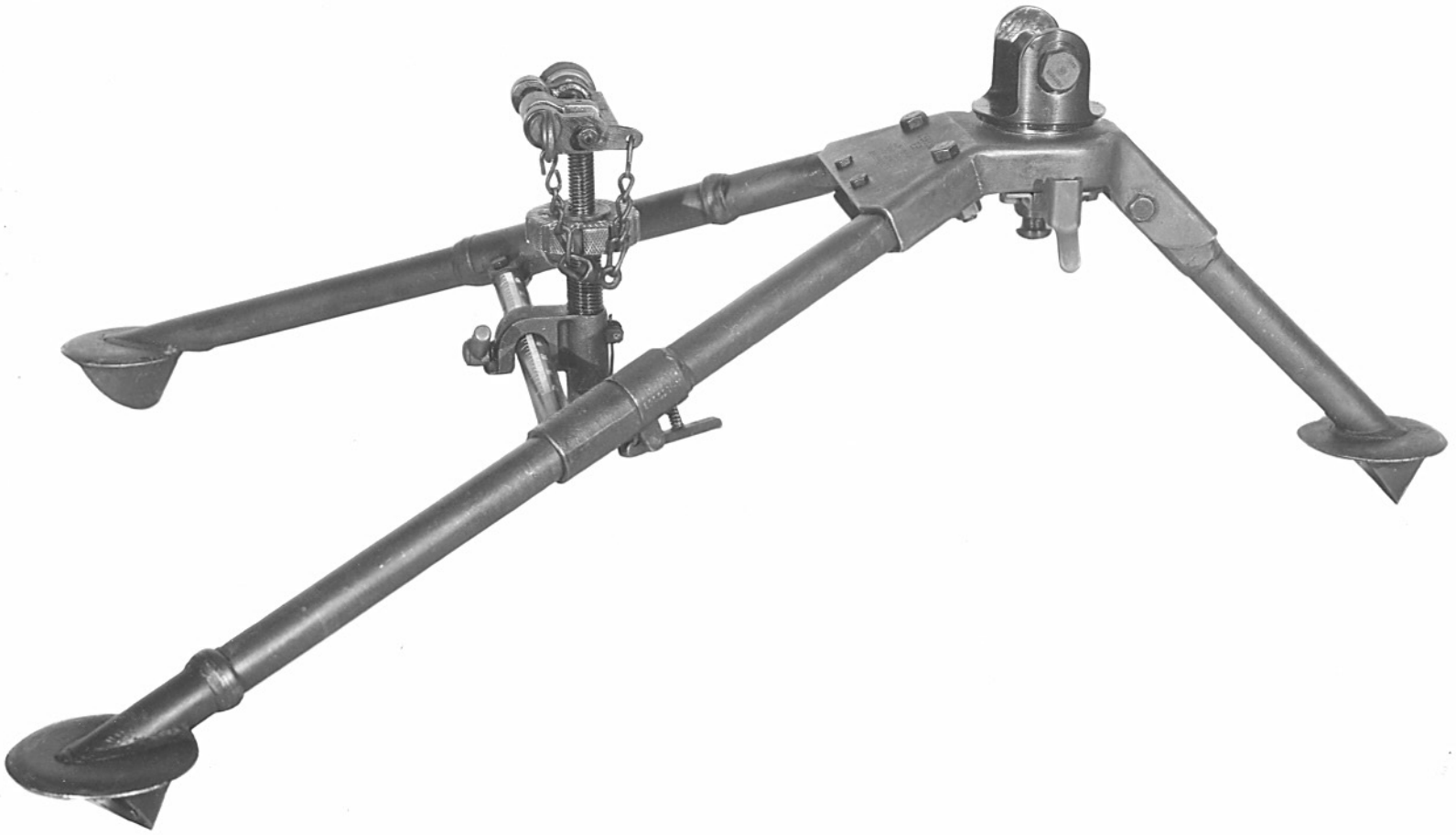
Special taps were used for all internal threads. The taps, when in use, are run at a cutting speed of 35 to 40 r.p.m. which holds the cutting torque down to a minimum. The taps used in tapping the hole in the upper elevating screw to receive the traversing screw are piloted by a lead screw. A special arrangement is required should the tapping be done on machines having no lead screw.

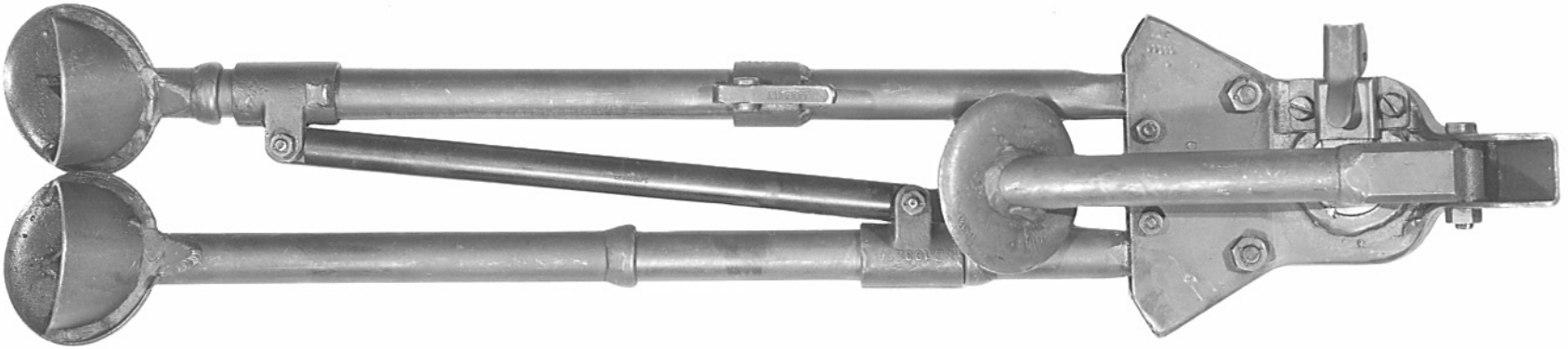
The Pintle, Drawing C59332, forms the connection between the tripod and machine gun. The Pintle is made of one piece, the tapered end of which is seated in the pintle bushing and the yoke end straddles the gun trunnion. The two grooves located in the taper of the stem are for the purposes of making the pintle interchangeable with the Caliber .50 Mount. The grooves engage the pintle lock; the upper groove for the Caliber .30 Mount and the lower groove for the Caliber .50 Mount.

Manufacturing methods and procedures shown on the complete set of route sheets contained herein, represent practices employed at the time this Description of Manufacture was prepared. Detail drawings of all component parts are also included and placed ahead of their respective route sheets. Due to the fact that improvements in both design and production methods are constantly being made, contractors are cautioned that in event of future manufacture, it will be necessary for them to obtain and work from latest revised drawings and specifications.



720-10523 May 18, 1944 ROCK ISLAND ARSENAL ORDNANCE DEPARTMENT

Mount, Tripod, Machine Gun, Cal..30, M2.

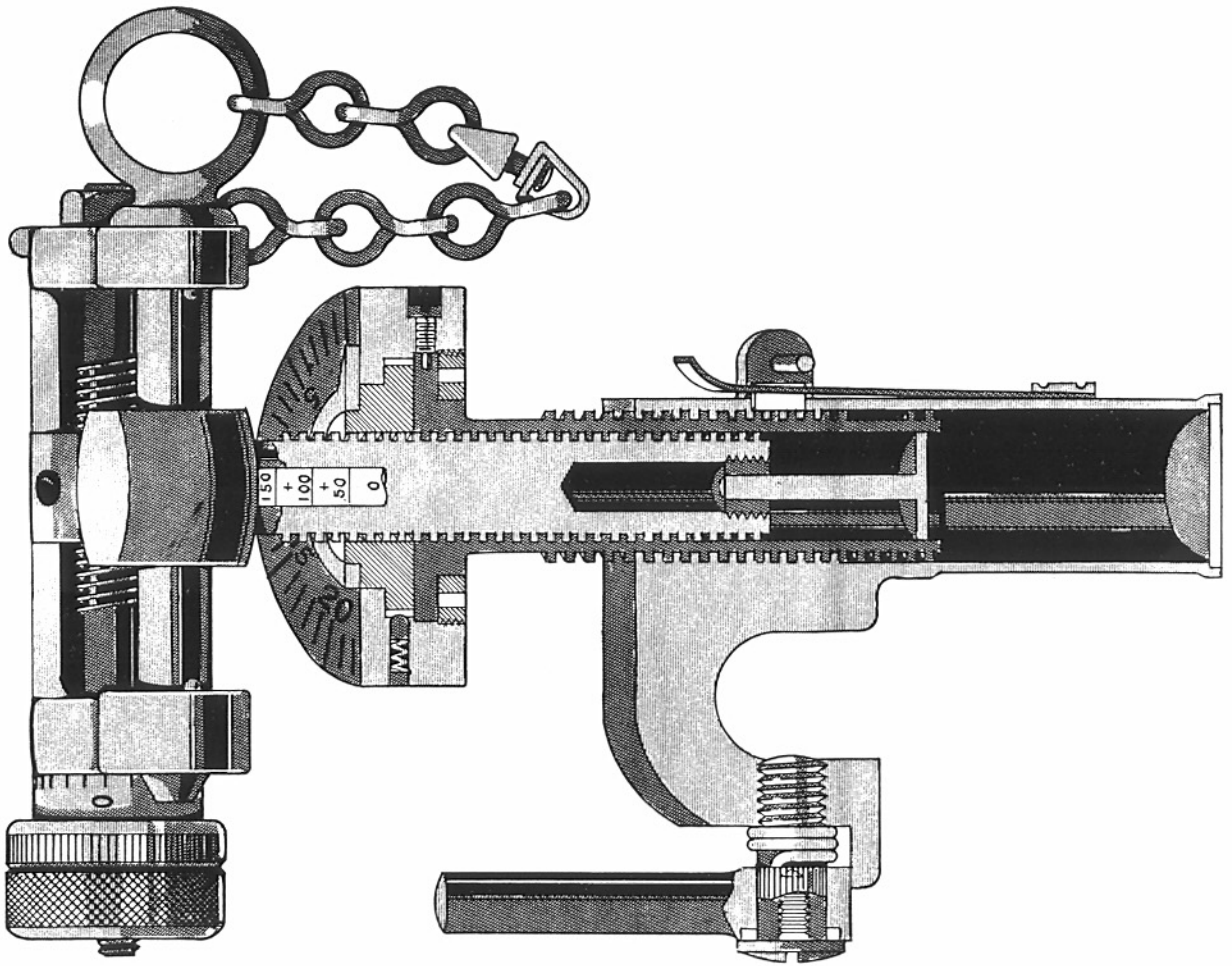


720-10522 May 18, 1944 ROCK ISLAND ARSENAL ORDNANCE DEPARTMENT

Mount, Tripod, Machine Gun, Cal..30, M2. Folded.

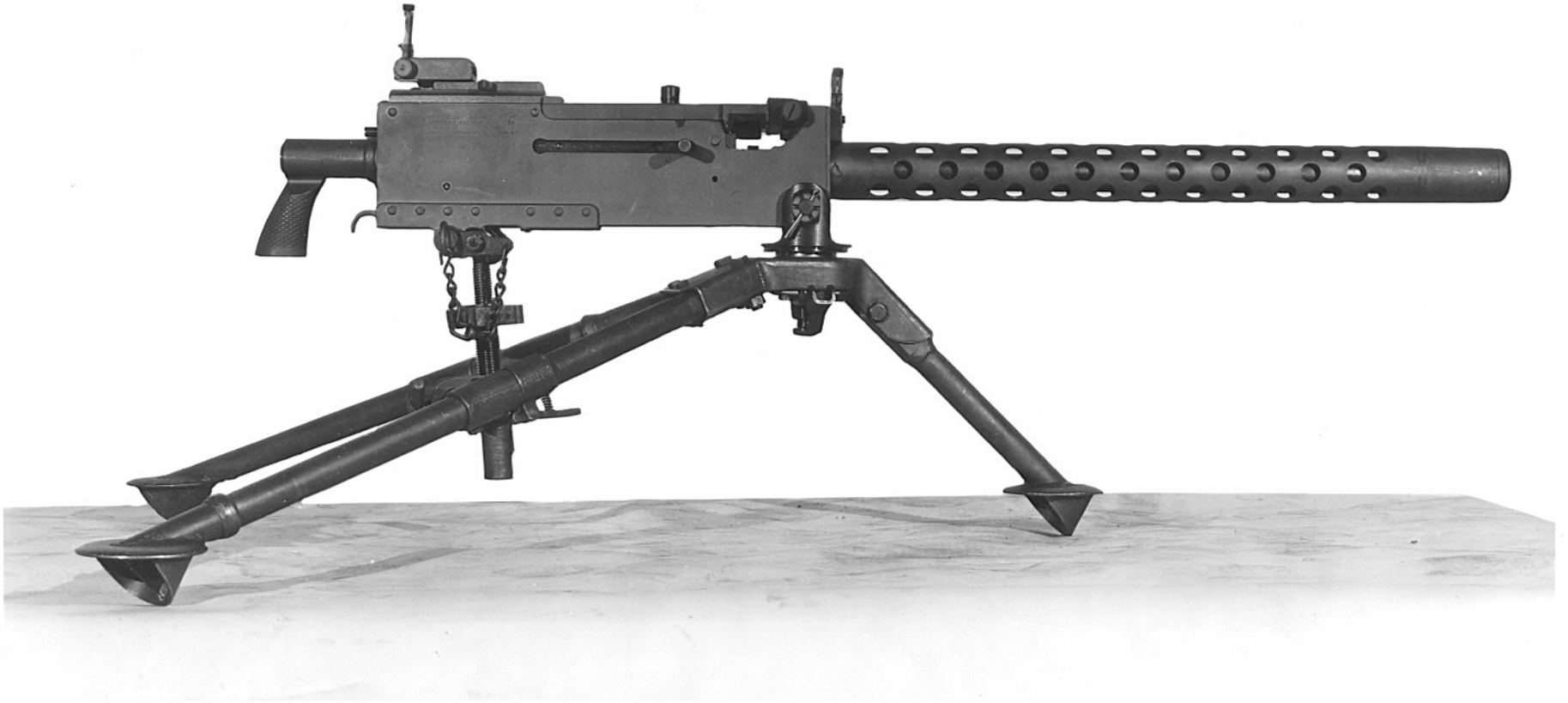
720-10524 May 18, 1944 ROCK ISLAND ARSENAL ORDNANCE DEPARTMENT

Mount, Tripod, Machine Gun, Cal..30, M2. Elevating Mechanism.



720-11903	December 6, 1944	ROCK ISLAND ARSENAL	ORDNANCE DEPARTMENT

Mount, Tripod, Machine Gun, Cal..30, M2. Elevating Mechanism Assembly.



720-10521 May 18, 1944 ROCK ISLAND ARSENAL ORDNANCE DEPARTMENT

Browning Machine Gun, Cal..30, M1919A4 on Mount, Tripod, Cal..30, M2.

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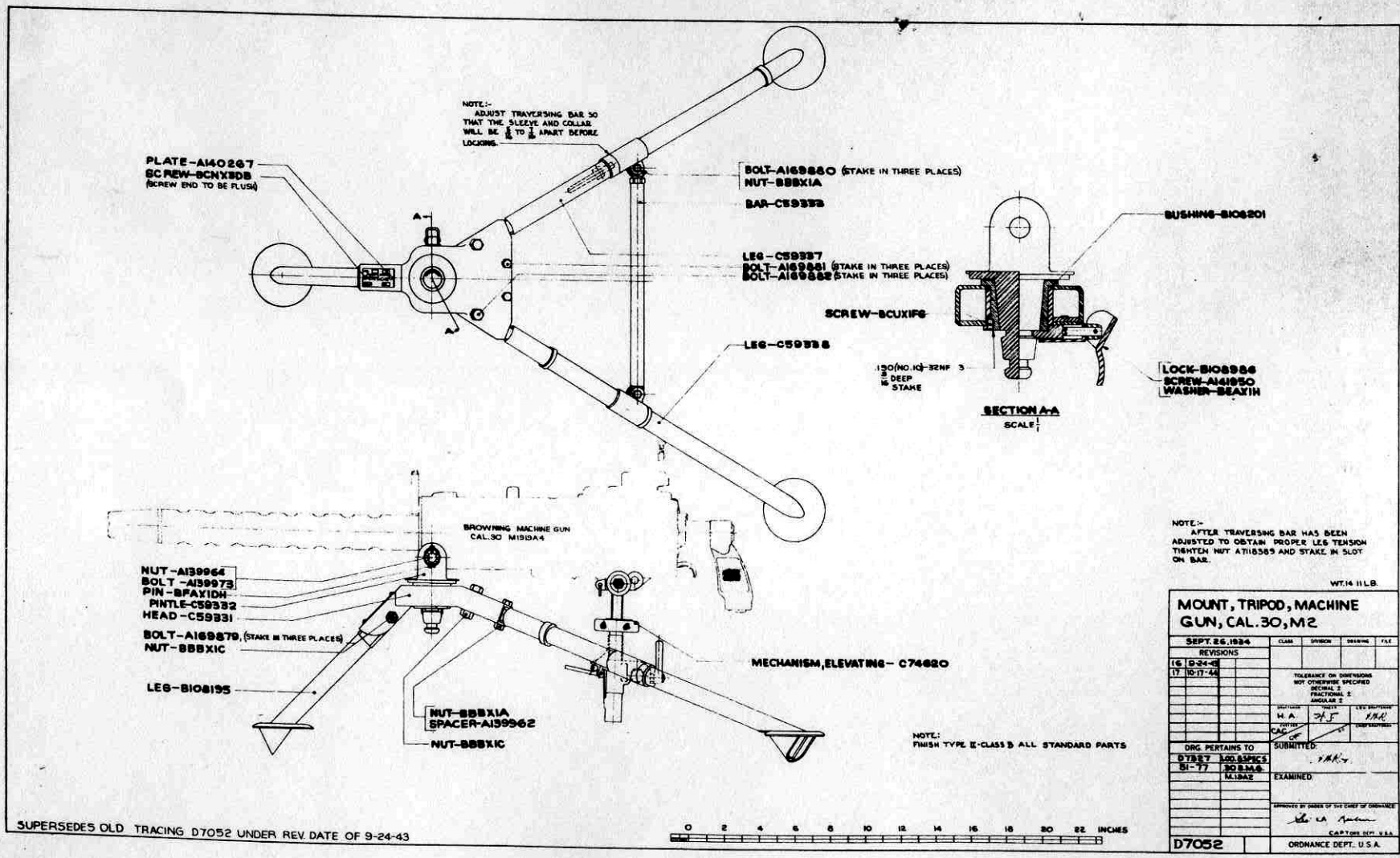

WT. 14 11 LB.

MOUNT, TRIPOD, MACHINE GUN, CAL. 30, M2

SEPT. 26, 1934

REVISIONS

(6	9-24-43	
(7	10-17-44	

TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

DRAFTSMAN	TRACED	LEAD DRAFTSMAN
H. A.	H.S	H.M.

CAC

SUBMITTED: H.M.

EXAMINED:

APPROVED BY ORDER OF THE CHIEF OF ORDNANCE
Wm. H. Rutan
CAPTAIN ORD. U.S.A.

ORG. PERTAINS TO

D7&7	30.1 SPECS
81-77	30 B.M.G.
	M.1942

D7052

ORDNANCE DEPT. U.S.A.

SUPERSEDES OLD TRACING D7052 UNDER REV. DATE OF 9-24-43