

RESTRICTED

Ordnance Pamphlet 865

(Second Revision)

**AVIATION ORDNANCE
EQUIPMENT CATALOG**



A Bureau of Ordnance Publication

4 May 1944

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ORDNANCE PAMPHLET 865

(SECOND REVISION)

AVIATION ORDNANCE EQUIPMENT CATALOGUE



3 MAY 1944

THIS PUBLICATION IS **RESTRICTED** AND WILL BE HANDLED IN ACCORDANCE WITH
ARTICLE 76, UNITED STATES NAVY REGULATIONS, 1920

BUREAU OF ORDNANCE

WASHINGTON, D. C.

4 May 1944.

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ORDNANCE PAMPHLET 865 (Second Revision)

AVIATION ORDNANCE EQUIPMENT CATALOGUE

1. The primary purpose of Ordnance Pamphlet 865 (Second Revision) is to catalogue *current major* items of Aviation Ordnance Equipment and items related thereto, so that the name, stock number, and physical characteristics may be quickly associated. It also furnishes general information regarding interchangeability and use. Detailed information regarding construction, operation, maintenance, etc., will be found in the applicable publications and drawings listed.

2. Unless otherwise stated in individual write-ups, illustrations other than those depicting typical installations show what is furnished under the stock number indicated. Where not assigned, stock numbers have been omitted.

3. Most of the items listed herein are under the cognizance of the Bureau of Ordnance. These items have been grouped under the following headings:

- | | |
|------------------------------------|---|
| (a) Aircraft Guns and Accessories. | (e) Bomb and Torpedo Equipment. |
| (b) Fire Control Equipment. | (f) Smoke Screen Equipment. |
| (c) Pyrotechnic Equipment. | (g) Tow Target Equipment and Accessories. |
| (d) Trap and Skeet Equipment. | (h) Mobile Ordnance Equipment. |

The remaining items are under the cognizance of the Bureau of Aeronautics and have been listed under the heading "Bureau of Aeronautics Cognizance."

4. The major and minor supply points mentioned in OCL V26-43 stock all equipment catalogued herein with the exception of Mobile Ordnance Equipment, which is supplied only on formal request to the Bureau of Ordnance by the Commanding Officer of the activity requiring it. Spare parts for Mobile Ordnance Equipment should be requisitioned from the Naval Ammunition Depot, Crane, Indiana.

5. OP's 865 and 865A, dated July 1942 and May 1943 respectively, are hereby superseded and should be destroyed.

6. This publication is RESTRICTED and should be handled in accordance with Article 76, U. S. Navy Regulations, 1920.

G. F. HUSSEY, JR.
Rear Admiral, U. S. Navy
Chief of the Bureau of Ordnance

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AIRCRAFT GUNS and ACCESSORIES

AIRCRAFT GUNS AND ACCESSORIES

ADAPTERS, GUN MOUNT (Also see Mounts, Gun.)

BEARINGS, MOUNTING

BOLTS, TRUNNION

BOX, AMMUNITION (See Magazines.)

BRACKETS, SIGHT (See Open Fore Post Sights.)

CABLE, IMPULSE (See Motors, Trigger.)

CHARGERS, GUN

CONTAINERS, EJECTED CASE AND LINK

CONTROLS, TRIGGER

ELIMINATOR, FLASH

FEEDS, AMMUNITION

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GUNS, MACHINE

HANDLES, GUN CHARGING

HOLDERS, MAGAZINE

LATCH, GUN MOUNT ADAPTER

LEVERS, FEED BELT (See Gages.)

MACHINE, GREASE DIP

MACHINES, LINK LOADING

MAGAZINES

MOTORS, TRIGGER

MOUNTS, AMMUNITION BOX

MOUNTS, GUN (Also see Adapters.)

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SETS, SPARE PARTS

SETS, TOOL AND ACCESSORY

SLIDES, OPERATING AND RETRACTING

SOLENOIDS (See Controls, Trigger.)

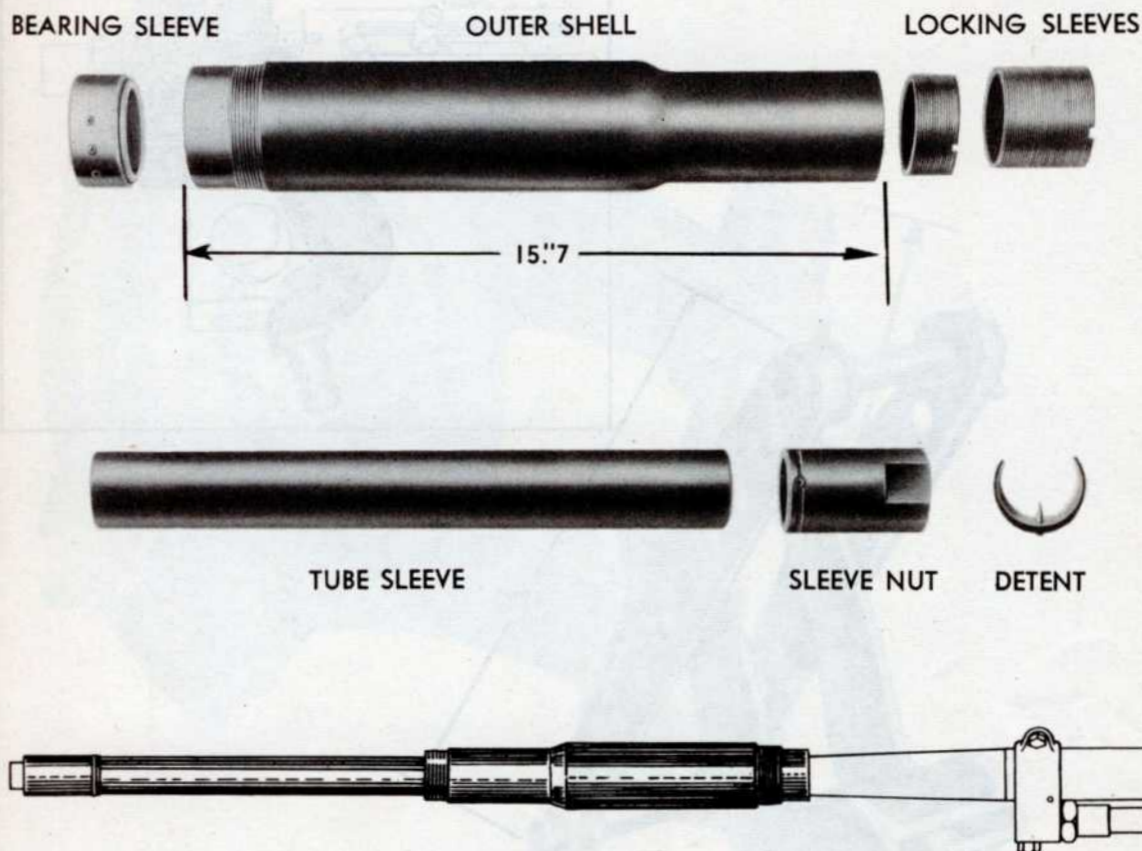
STAND, GUN

TOOL, BELTING

TRIGGERS

VALVES, GUN CHARGING

ADAPTER, GUN MOUNT, 20 MM TYPE AN-M1



ADAPTER, GUN MOUNT, AUTO 20 MM, AN M2, EDGEWATER, TYPE AN-M1

STOCK No. 1-A-56

THE 20 MM Gun Mount Adapter Type AN-M1 absorbs the recoil shock of a 20 mm gun. It also provides a front mounting arrangement for the gun and permits the gun to recoil the required distance to operate any recoil-actuated feed mechanism.

The adapter consists of an outer shell containing a ring spring under compression, in series with a coil spring. A tube sleeve and sleeve nut hold the outer shell firmly in place on the gun tube.

The adapter is mounted to the airplane structure by a ball and socket type gun mount that may screw on either end of the outer shell.

This adapter replaces the recoil spring

and mounting sleeve assembly which was previously furnished with the 20 mm M2 gun. The manufacturer lubricates the adapter for life with a graphite-base lubricant.

A special muzzle thread protector is furnished with the adapter.

DIMENSIONS (assembled): approx. 33.5 x 3.0 x 3.0 inches.

WEIGHT: approx. 11.8 pounds.

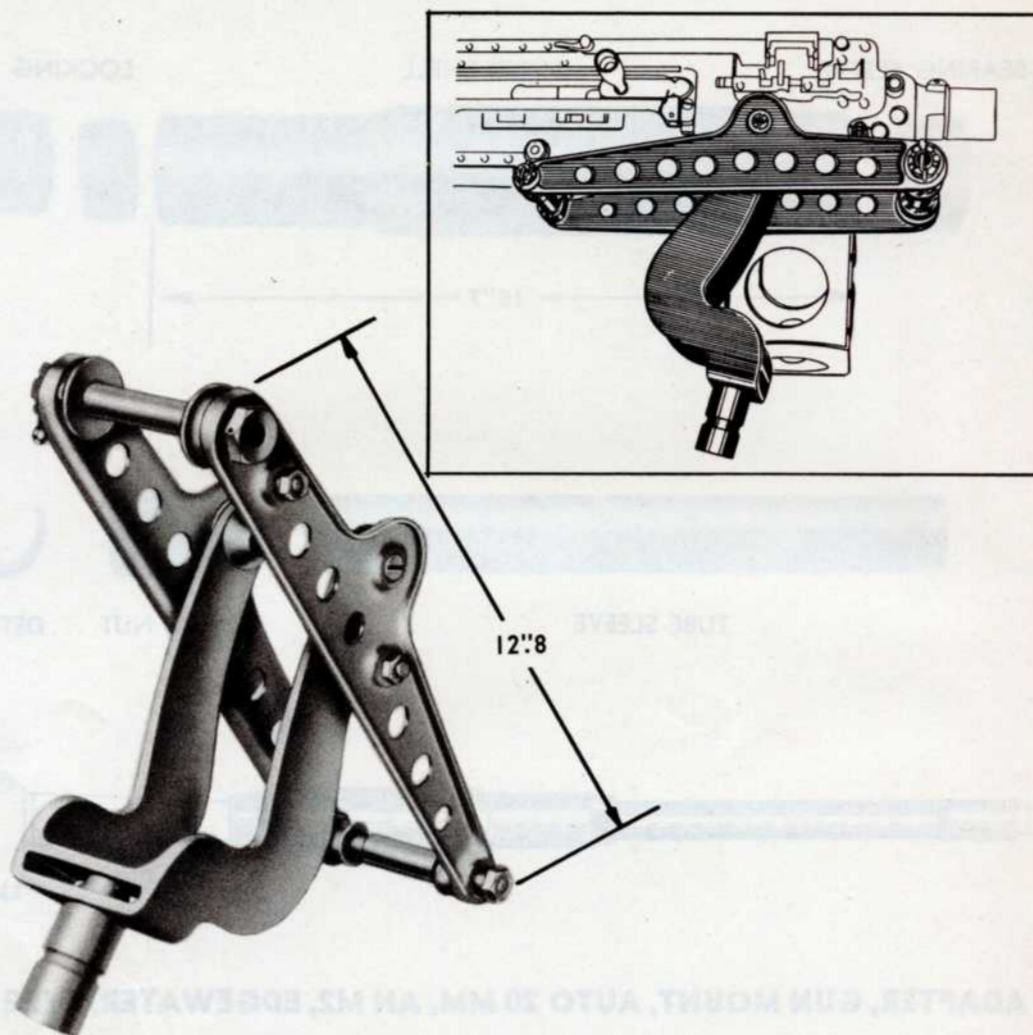
PUBLICATIONS: O.D. 4447, T.M. 9-227, AAF Tech. Order 11-1-16.

AAF DWG: 41D10198.

ARMY ORD. DWG: D36592.

BuORD DWG: Gen. Arr. 328016.

ADAPTER, GUN MOUNT, TYPE C-12



ADAPTER, ASSEMBLY, GUN MOUNT, TYPE C-12

STOCK No. 1-A-104-310

THE Gun Mount Adapter Assembly Type C-12 accommodates a caliber .30 machine gun. It consists of 2 side plates, bolted to the gun at the front trunnion and rear mounting attachments. These plates also bolt to a curved yoke, the lower end of which is grooved to engage the locking balls of standard gun mount sockets.

This adapter, which is not recoil-absorbing, has an Ammunition Box Holder Type H-1 at-

tached to studs on the left side plate.

The Gun Mount Adapter Mark 1 may be made interchangeable with the Type C-12 by substitution of a yoke, AAF Part No. 37D4926.

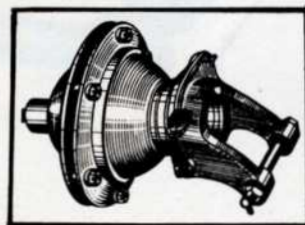
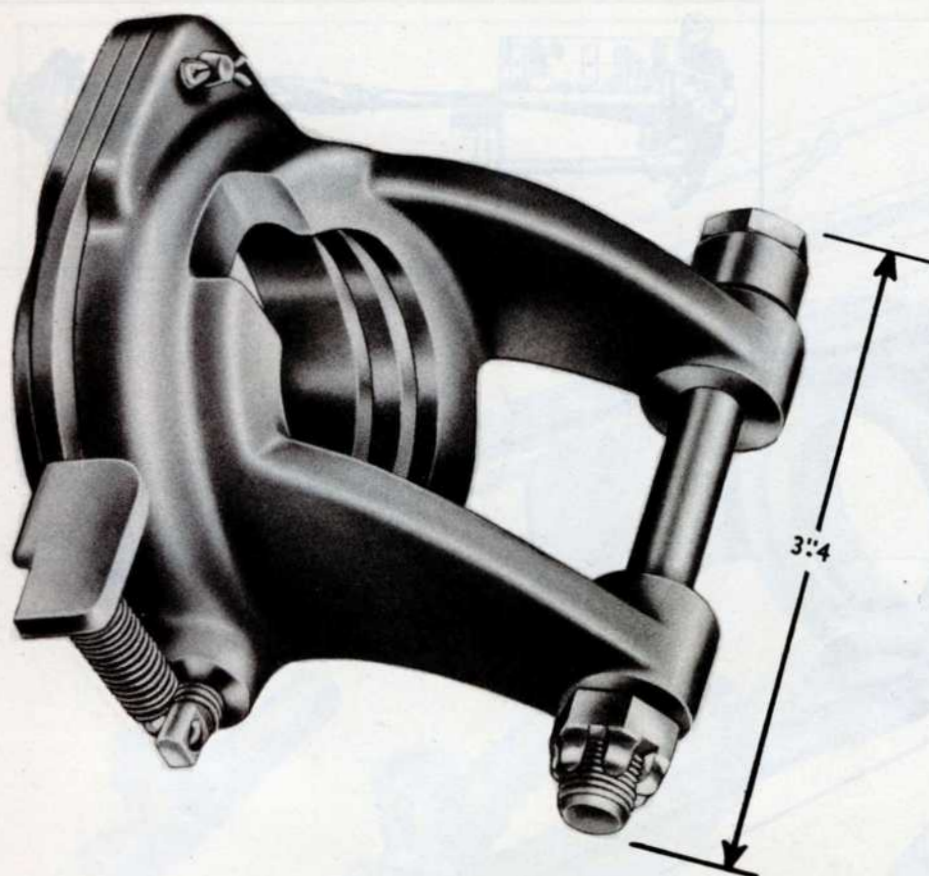
DIMENSIONS: approx. 12.8 x 10.1 x 4.4 inches.

WEIGHT: approx. 5.5 pounds.

PUBLICATION: AAF Tech. Order 11-10-9.

AAF DWG: 37G4926.

ADAPTER, GUN MOUNT, TYPE C-18



ADAPTER, ASSEMBLY, GUN MOUNT, TYPE C-18

STOCK No. 1-A-104-340

THE Gun Mount Adapter Assembly Type C-18 attaches a caliber .30 machine gun to a ball and socket type mount. The adapter consists of a frame with a pair of lugs, and a circular spring latch. The lugs are attached to the gun by a bolt, and the latch locks the gun to the mount.

The adapter, which is not recoil-absorbing, is quickly detachable from the ball and socket

mount.

When this adapter is used, the front trunnion mount, supplied with the gun, is removed.

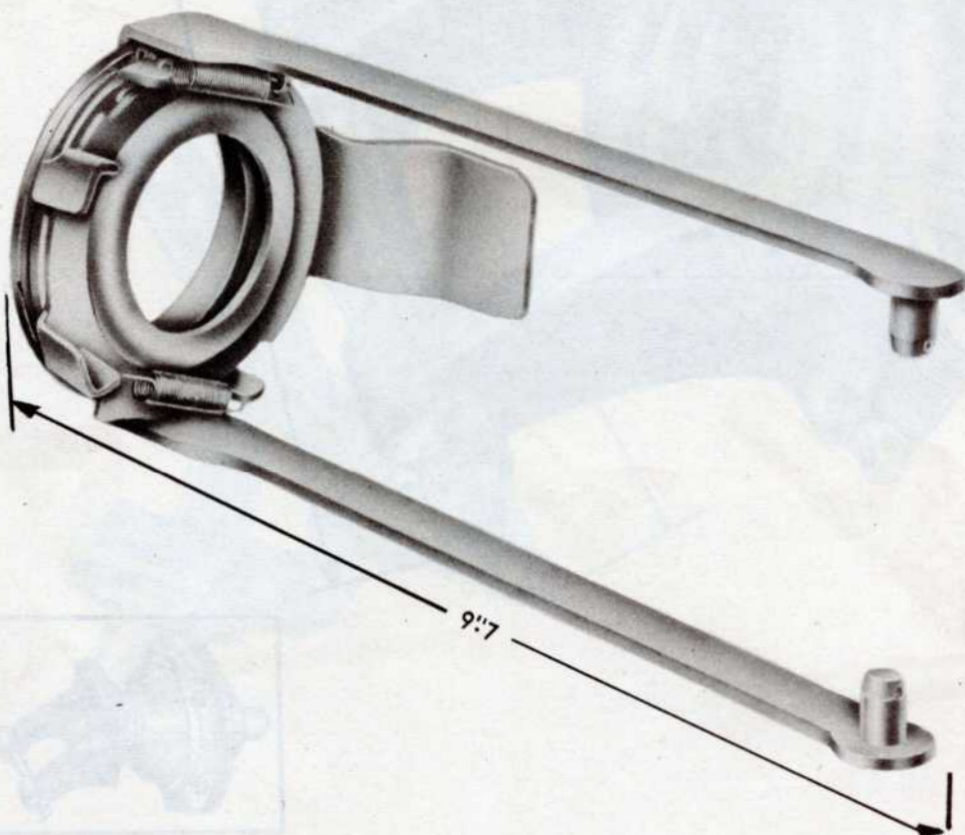
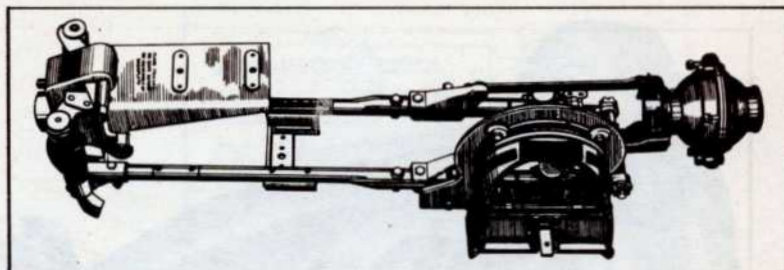
DIMENSIONS: approx. 4.0 x 3.4 x 3.0 inches.

WEIGHT: approx. 1.8 pounds.

PUBLICATION: AAF Tech. Order 11-10-9.

AAF DWG: 41D11020.

ADAPTER, GUN MOUNT, TYPE C-19



ADAPTER, ASSEMBLY, GUN MOUNT, TYPE C-19

STOCK No. 1-A-104-350

THE Gun Mount Adapter Assembly Type C-19 is used to attach a recoil-absorbing Gun Mount Adapter Type E-11 to a Ball and Socket Gun Mount Type K-4. The unit consists of a frame, a latch and 2 long arms with a lug on each end. The frame fits around the neck of the ball and is retained by the spring latch. The 2 arms engage the Adapter Type

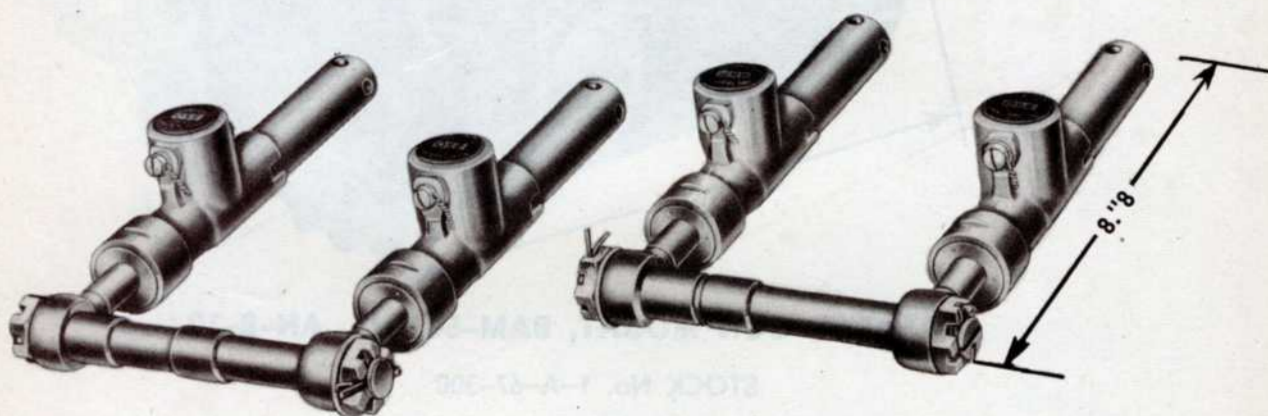
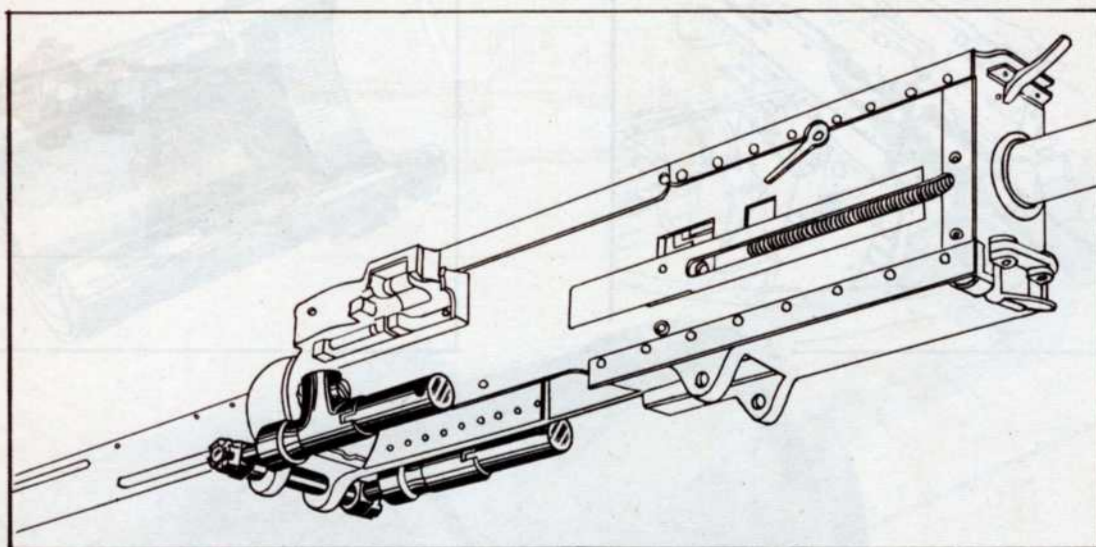
E-11 by means of the lugs at their ends. The combination provides a flexible support for a caliber .50 machine gun through the skin of the airplane.

DIMENSIONS: approx. 9.7 x 4.7 x 4.3 inches.

WEIGHT: approx. 2.0 pounds.

AAF DWG: 42D19090.

ADAPTER, ASSEMBLY, GUN MOUNT, TYPE E-5A



ADAPTER, ASSEMBLY, GUN MOUNT, TYPE E-5A

STOCK No. 1-A-104-405

THE Gun Mount Adapter Assembly Type E-5A absorbs the recoil shock of twin caliber .50 machine guns. It consists of 2 separate units, each containing 2 hydraulic shock absorbers, trunnion bolts, and spacers. The absorbers dampen recoil shock by the action of a piston and a recoil spring.

This adapter is designed for gun turret installations or for mounting fixed guns.

DIMENSIONS (each unit): approx. 3.4 x 8.8 x 1.9 inches.

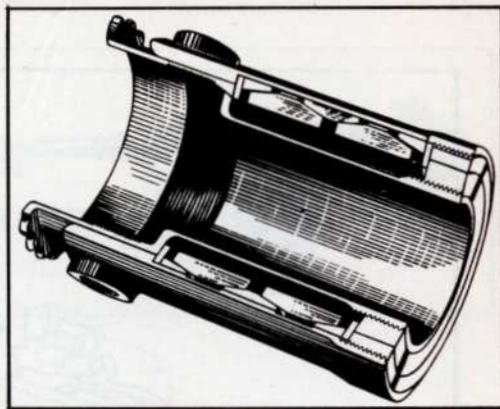
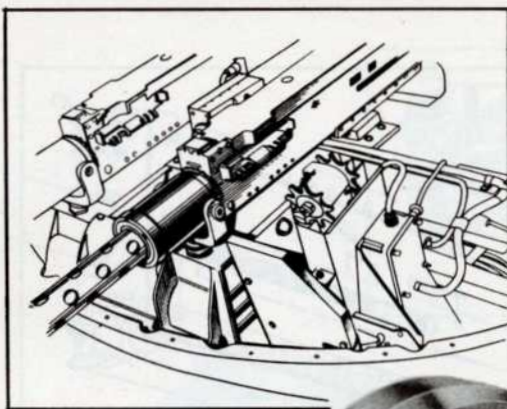
WEIGHT (each unit): approx. 3.2 pounds.

PUBLICATION: AAF Tech. Order 11-10-6.

MFR'S. DWG: Bell Aircraft Corporation
No. GM-749-782.

BuORD DWG: Gen. Arr. 372704.

ADAPTER, GUN MOUNT, TYPE AN-E-10



ADAPTER, GUN MOUNT, BAM-50, M2, AN-E-10

STOCK No. 1-A-67-300

THE AN-E-10 Gun Mount Adapter absorbs the recoil shock of a caliber .50 machine gun. It consists of an annular housing enclosing a series of ring springs that fit concentrically around an inner sliding shell. The shell is fastened to the gun and after each shot, the recoil causes the rings to telescope into each other, thus absorbing the energy of recoil and preventing transmission of shocks to the airplane structure. The outer housing is attached by means of 2 tapped holes to the structure of the turret. When this adapter is used, the Trunnion Adapter Army Ordnance Dwg. C4052, which is furnished with the gun, is removed.

The AN-E-10 is similar to the Gun Mount Adapter Mark 13 except that the Mark 13

is equipped with a hydraulic shock absorbing unit, in place of the ring springs, and is $\frac{3}{8}$ -inch longer and has $\frac{3}{32}$ -inch greater recoil. Both adapters are interchangeable as complete assemblies only.

The AN-E-10 was formerly known as the Gun Mount Adapter Mark 15. It was also known as the AAF Type E-10.

DIMENSIONS: approx. 5.4 x 3.6 x 3.6 inches.

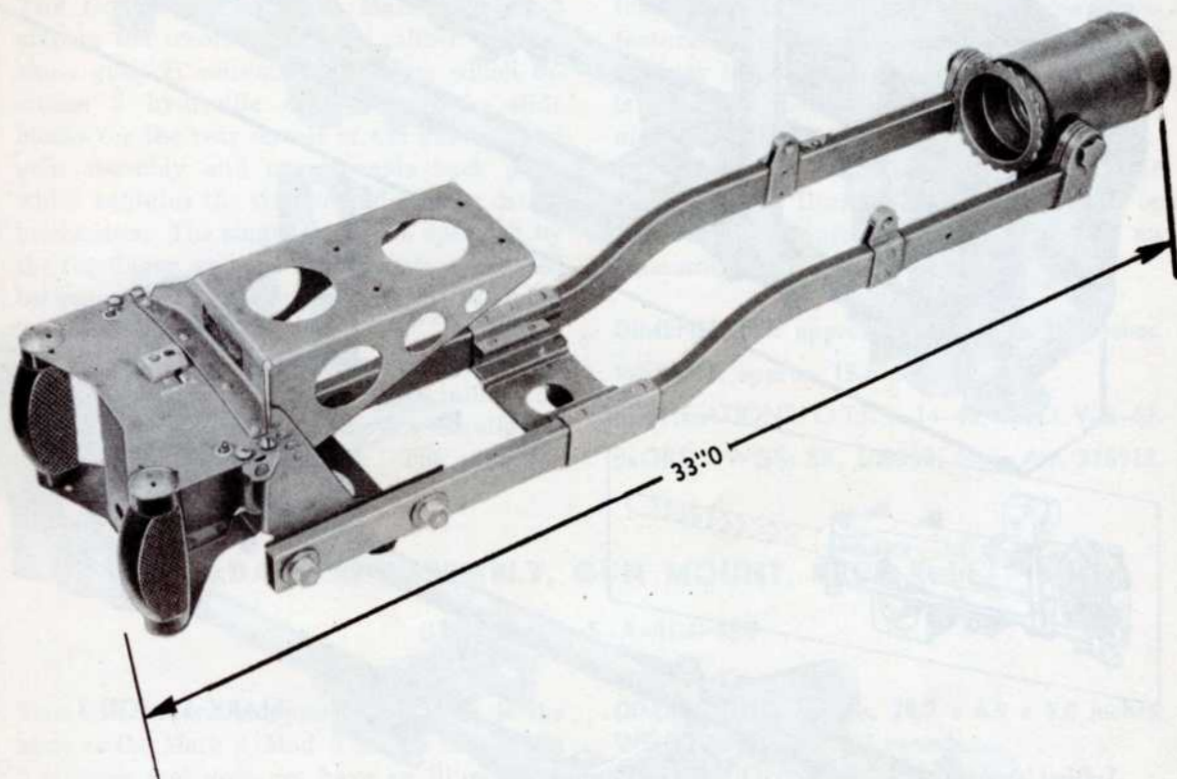
WEIGHT: approx. 5.5 pounds.

PUBLICATIONS: Edgewater Steel Co. Eng. Report No. 431, O.T.I. V-18-43, AAF Tech. Order 11-10-5.

AAF DWG: 41B2679.

BuORD DWG: Gen. Arr. 328862.

ADAPTER, GUN MOUNT, TYPE E-12



ADAPTER, ASSEMBLY, GUN MOUNT, TYPE E-12

STOCK No. 1-A-104-460

THE Gun Mount Adapter Type E-12 absorbs the recoil shock of a caliber .50 machine gun. It incorporates 2 rectangular tubes bolted to the sides of a recoil-absorbing Gun Mount Adapter Type E-10. A removable back plate assembly is fixed to the rear of the tubes, and the base of the back plate carries dual hand grips, dual triggers, and the safety mechanism. The rear support of the gun fastens to a member attached near the rear of the side tubes. The gun and adapter are supported from the airplane structure by a yoke, which

is not furnished as a part of the adapter. An Ammunition Box Mount Type C-3 and an Ammunition Box Type 0-1 are used in conjunction with the adapter but must be ordered separately.

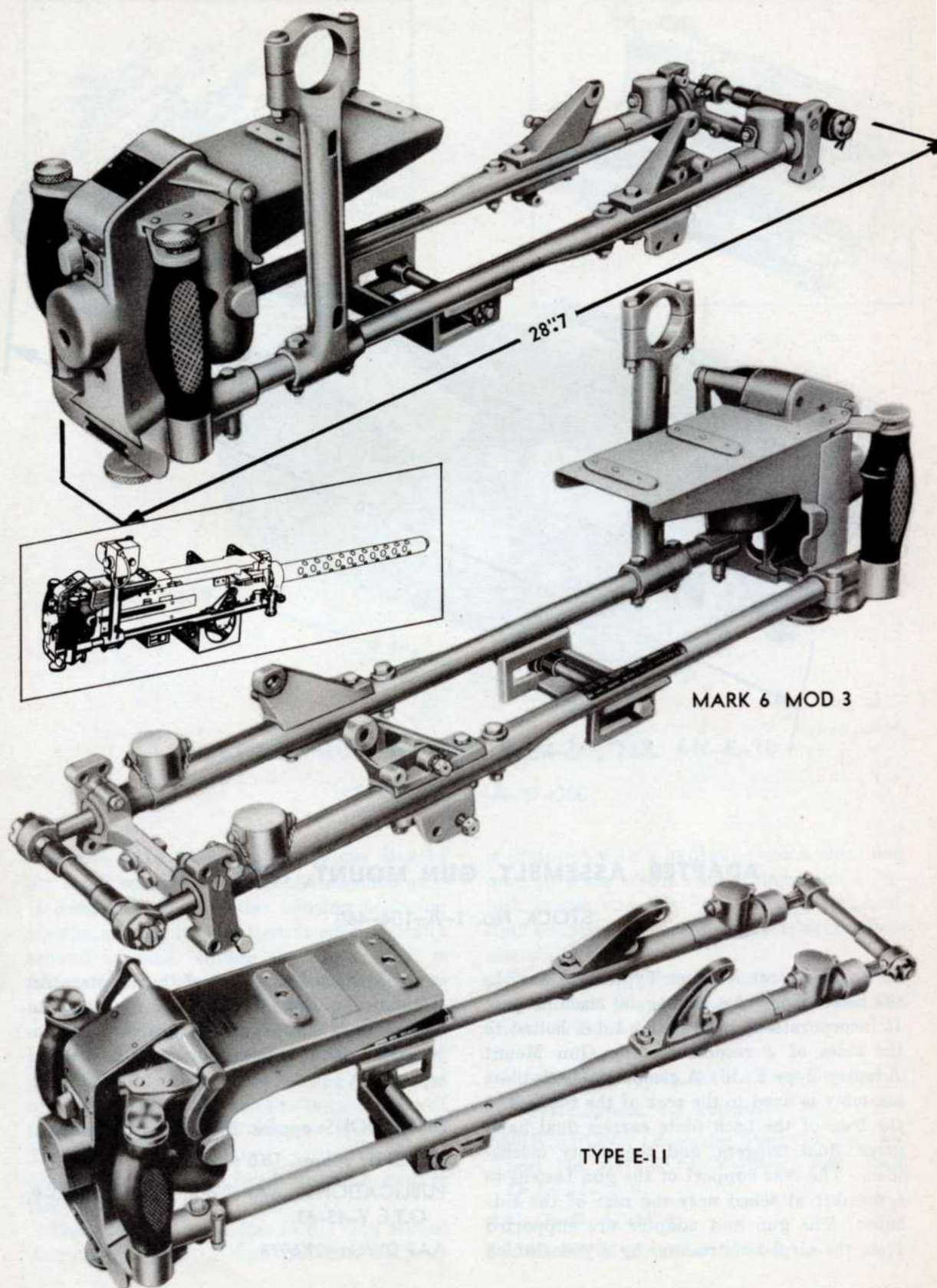
DIMENSIONS: approx. 33.0 x 7.0 x 6.8 inches.

WEIGHT: approx. 16.0 pounds.

PUBLICATIONS: AAF Tech. Order 11-10-9, O.T.I. V-43-43.

AAF DWG: 42K6978.

ADAPTER, GUN MOUNT, MARK 6, MOD. 3 AND TYPE E-11



ADAPTER, GUN MOUNT, MARK 6, MOD. 3 AND TYPE E-11

ADAPTER, GUN MOUNT, BAM-50, M2, FLEXIBLE, SINGLE, MARK 6, MOD. 3

STOCK No. 1-A-68-13

THE Gun Mount Adapter Mark 6, Mod. 3 absorbs the recoil shock of a caliber .50 machine gun. It consists of a frame which includes 2 hydraulic shock absorbers, slide blocks for the rear mount of the gun, a hand grip assembly and a removable back plate which contains the trigger and trigger safety mechanism. The single trigger is operated by the forefinger, and the safety control (located between the hand grip supports) is operated by the thumb.

The back plate trigger, spacer, spring, and pin, required to convert the basic caliber .50 gun back plate for use with this installation is supplied with the adapter. The yoke for

this adapter is provided by the airplane manufacturer in order that the required angles of fire may be obtained for the particular installation. The yoke is supplied under the cognizance of the Bureau of Aeronautics.

The Mark 6, Mod. 3 provides a bracket for mounting the Illuminated Sight Mark 9 or Mods. and has provisions for mounting an ammunition box holder.

DIMENSIONS: approx. 28.7 x 6.9 x 1.7 inches.

WEIGHT: approx. 15.6 pounds.

PUBLICATIONS: O.T.I. V-14-43, O.H.I. V-5-43.

BuORD DWGS: SK. 108830; Gen. Arr. 375918.

ADAPTER, ASSEMBLY, GUN MOUNT, TYPE E-11

STOCK No. 1-A-104-450

THE Gun Mount Adapter Type E-11 is the same as the Mark 6, Mod. 3 except that it has 2 triggers and does not have an illuminated sight bracket.

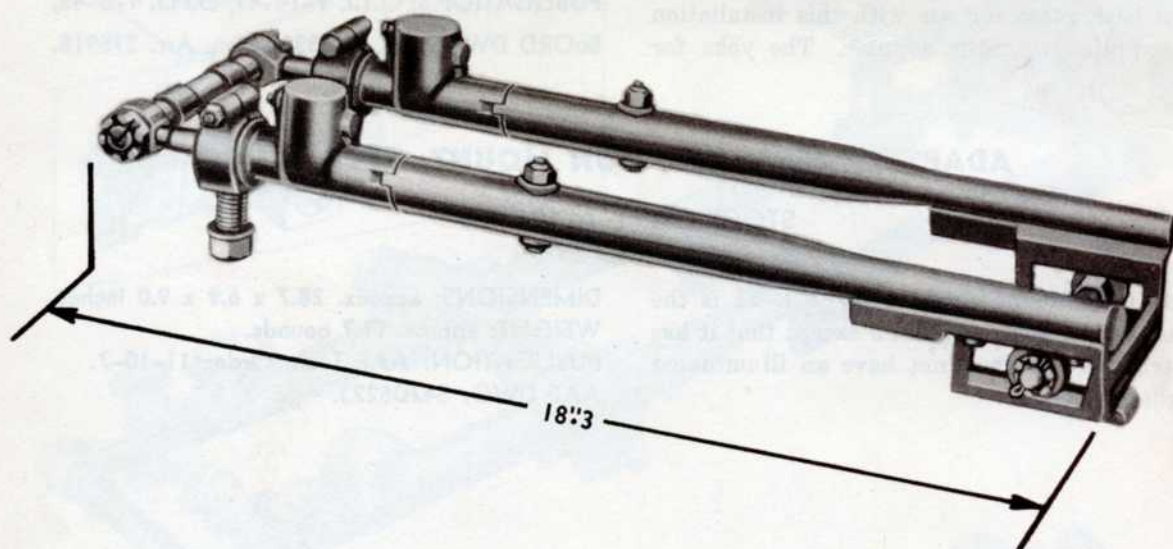
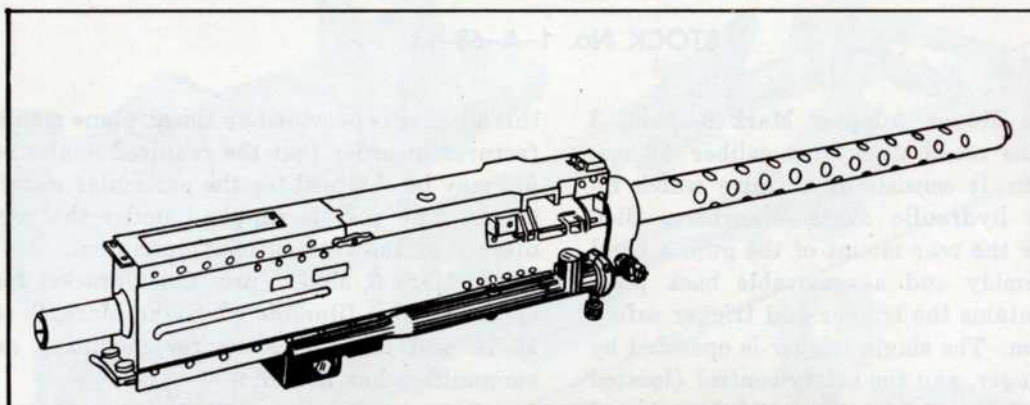
DIMENSIONS: approx. 28.7 x 6.9 x 9.0 inches.

WEIGHT: approx. 11.7 pounds.

PUBLICATION: AAF Tech. Order 11-10-7.

AAF DWG: S42D5223.

ADAPTER, GUN MOUNT, MARK 8, MOD. 1



ADAPTER, GUN MOUNT, BAM-50, M2, TURRET TYPE, MARK 8, MOD. 1

STOCK No. 1-A-69-17

THE Turret Type Gun Mount Adapter Mark 8, Mod. 1 absorbs the recoil shock of a caliber .50 machine gun on TBF and TBM airplanes. It is mounted directly to the turret structure. All associated feed chutes, sight brackets, etc. are furnished by the airplane contractor and are under the cognizance of the Bureau of Aeronautics.

This adapter is heavier and more rigidly

constructed than the Mark 8 which is now obsolete.

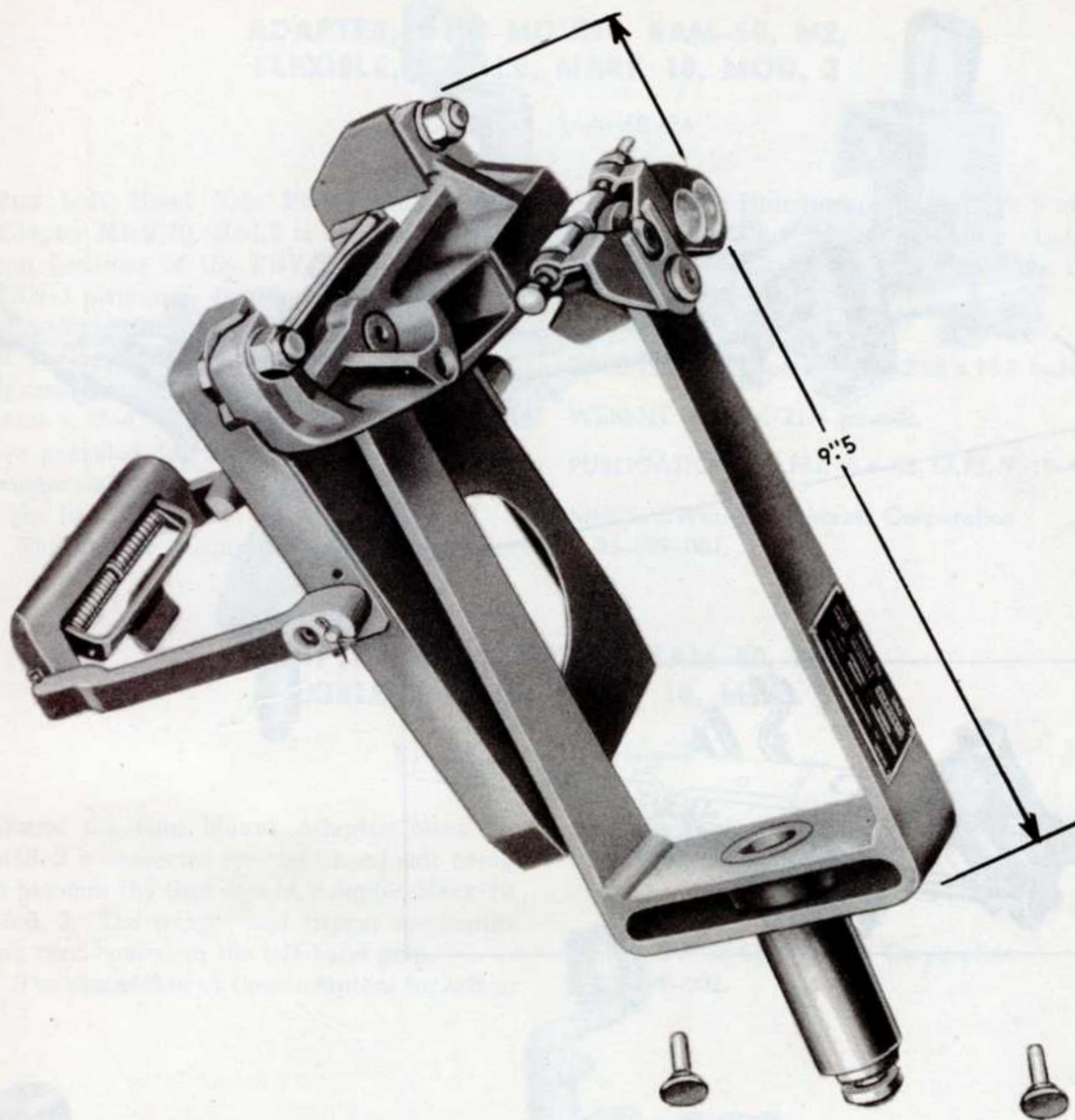
DIMENSIONS: approx. 18.3 x 5.4 x 3.0 inches.

WEIGHT: approx. 6.0 pounds.

PUBLICATION: Bell Aircraft Corporation Manual.

BuORD DWGS: SK. 90882, Gen. Arr. 320115.

ADAPTER, GUN MOUNT, MARK 9



ADAPTER, GUN MOUNT, BAM-30, M2, FLEXIBLE, SINGLE, MARK 9

STOCK No. 1-A-67-10

THE Gun Mount Adapter Mark 9 mounts a flexible caliber .30 machine gun. It is a simple yoke suspension type and is provided with a folding holder for a Magazine Mark 1 or Mark 7.

The adapter is secured to the mounting post of the airplane by the Gun Mount Adapter Latch (Stock No. 1-S-150). At present, the

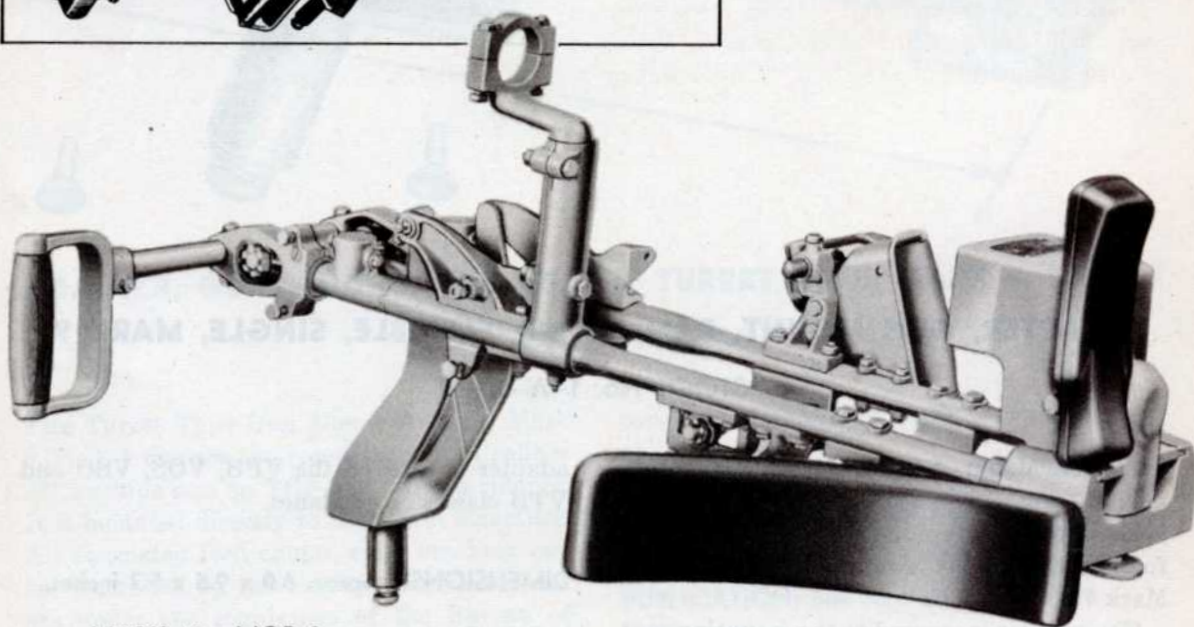
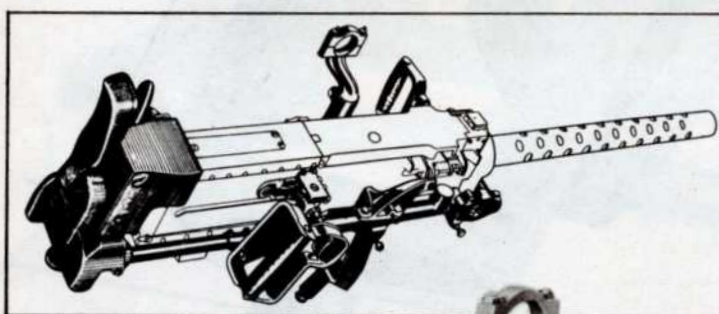
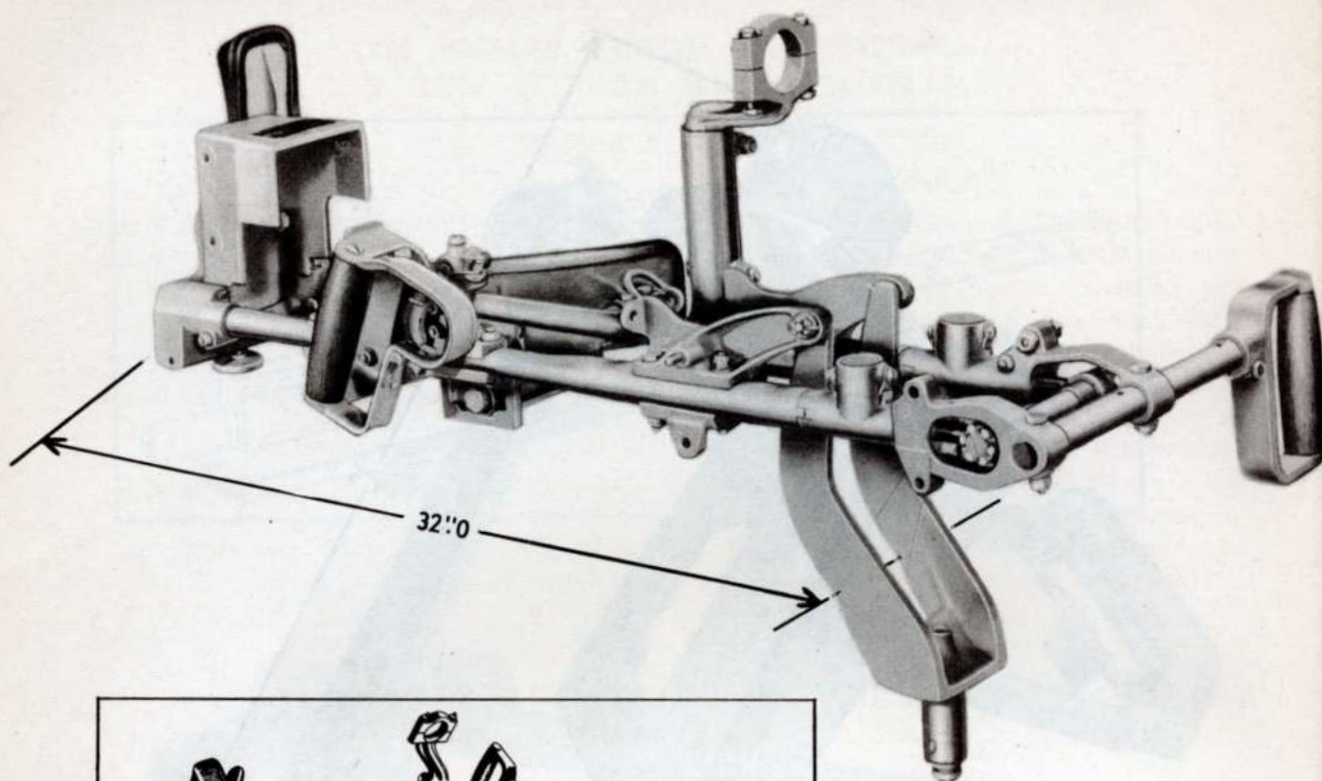
adapter is used on the VPB, VOS, VSO and VTB classes of airplanes.

DIMENSIONS: approx. 6.0 x 9.5 x 5.3 inches.

WEIGHT: approx. 4.3 pounds.

BuORD DWGS: SK. 90459, Gen. Arr. 272666.

ADAPTER, GUN MOUNT, MARK 10, MODS.



MARK 10 MOD 3

ADAPTER, GUN MOUNT, MARK 10, MODS.

ADAPTER, GUN MOUNT, BAM-50, M2, FLEXIBLE, SINGLE, MARK 10, MOD. 2

STOCK No. 1-A-68-24

THE Left Hand Side Firing Gun Mount Adapter Mark 10, Mod.2 is used in the waist gun positions of the PBV-5, PBV-5A, and PBN-1 airplanes. It absorbs the recoil shock of a single caliber .50 machine gun by means of spring and hydraulic shock dampening devices, similar to those used in the Adapter Mark 6, Mod. 3. Breast and shoulder supports are provided for firing and the trigger and trigger safety mechanism are housed in the right hand grip.

The adapter is equipped with a bracket for

mounting the Illuminated Sight Mark 9 and Mods. The Gun Mount Adapter Latch (Stock No. 1-L-150) is used to secure the adapter to the mount.

DIMENSIONS: approx. 32.0 x 20.8 x 18.2 inches.

WEIGHT: approx. 21.4 pounds.

PUBLICATIONS: O.H.I. V-4-43, O.T.I. V-15-43.

MFR'S. DWG: Bell Aircraft Corporation
03-099-001.

ADAPTER, GUN MOUNT, BAM-50, M2, FLEXIBLE, SINGLE, MARK 10, MOD. 3

STOCK No. 1-A-68-26

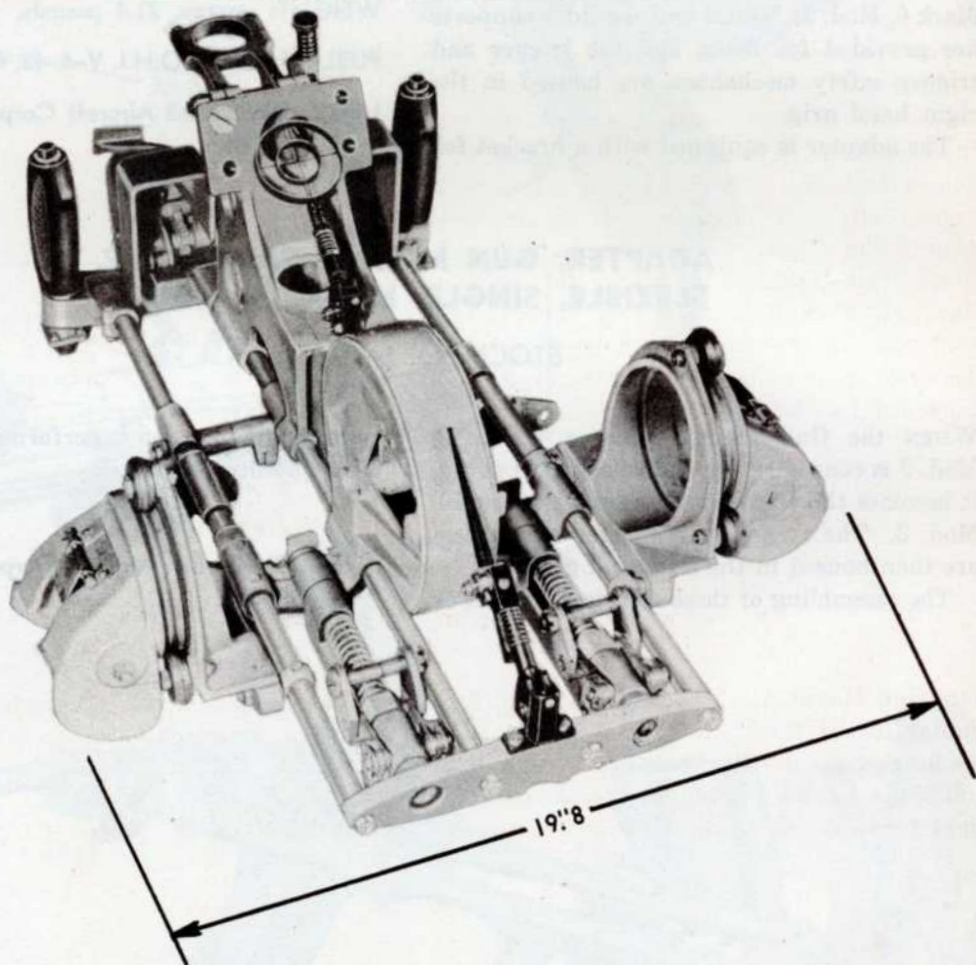
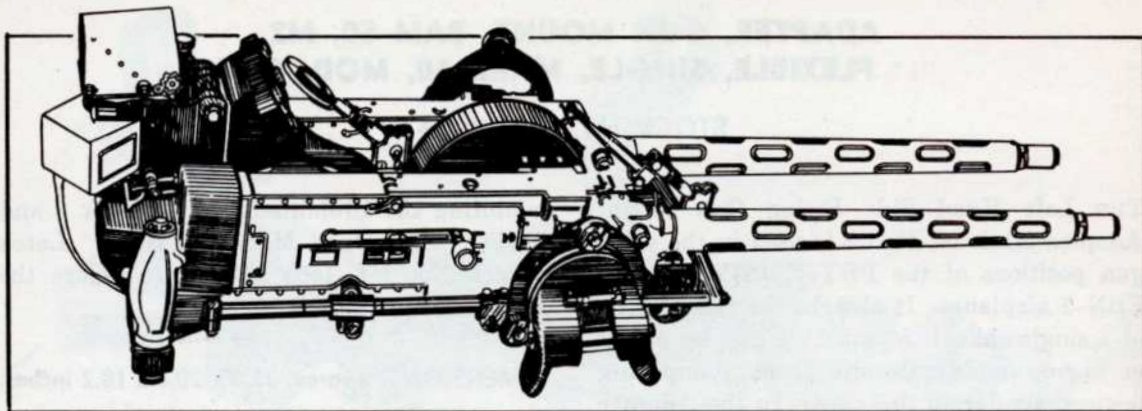
WHEN the Gun Mount Adapter Mark 10, Mod. 2 is converted for right hand side firing, it becomes the Gun Mount Adapter Mark 10, Mod. 3. The trigger and trigger mechanism are then housed in the left hand grip.

The assembling of these adapters for left or

right hand operation is performed without the use of additional parts.

MFR'S. DWG: Bell Aircraft Corporation
03-099-002.

ADAPTER, GUN MOUNT, MARK 11, MODS.



**ADAPTER, GUN MOUNT, BAM-30, M2,
FLEXIBLE TWIN, MARK 11, MOD. 3**

STOCK No. 1-A-67-80

THE Gun Mount Adapter Mark 11, Mod. 3,
used in the SBD series airplanes, absorbs the

recoil shock of twin caliber .30 machine
guns.

ADAPTER, GUN MOUNT, MARK 11, MODS.

ADAPTER, GUN MOUNT, BAM-30, M2, FLEXIBLE TWIN, MARK 11, MOD. 3 (Cont'd)

THE adapter has 4 parallel bars held in a front and a rear cross member. The rear member carries 2 handgrips each with a push button switch on the top. The left hand switch provides a connection to control the gunner's microphone and the right hand switch can be connected to control a gun camera. The Gun Camera Type AN and the Gun Camera Mount Mark 3, Mod. 1 can be installed on the right hand gun.

Two spring-pneumatic shock absorbers and 2 upper continuous feed units are located at the forward portion of the frame and a back guard and sight bracket are placed at the rear. The back guard unit contains the trigger and trigger safety mechanism and the bracket mounts the Illuminated Sight Mark 9 and Mods. This bracket differs from that on the Mark 11, Mod. 2 because it provides more headroom for the gunner and meets certain clearance requirements. The bracket was shortened 1.25 inches and is now capable of

being folded forward to facilitate removal of the back guard unit. A Rear Ring Sight Mark 11 and a Forepost Sight Mark 1 or Mark 1, Mod. 1 are used as standby installations. They are folded backward when not in use. These sights should be requisitioned separately when ordering the adapter.

In the center of the adapter, and supporting the entire assembly, is a combination ejection chute and yoke. The ejection chute serves both guns.

A Gun Mount Adapter Latch (Stock No. 1-L-150) secures the end of the yoke post after the adapter has been placed in the gun mount.

DIMENSIONS: approx. 24.5 x 19.8 x 14.4 inches.

WEIGHT: approx. 30.0 pounds.

PUBLICATION: Bell Aircraft Corp. Manual
NXS-403.

BuORD DWG: Gen. Arr. 329516.

ADAPTER, GUN MOUNT, BAM-30, M2, FLEXIBLE TWIN, MARK 11, MOD. 4

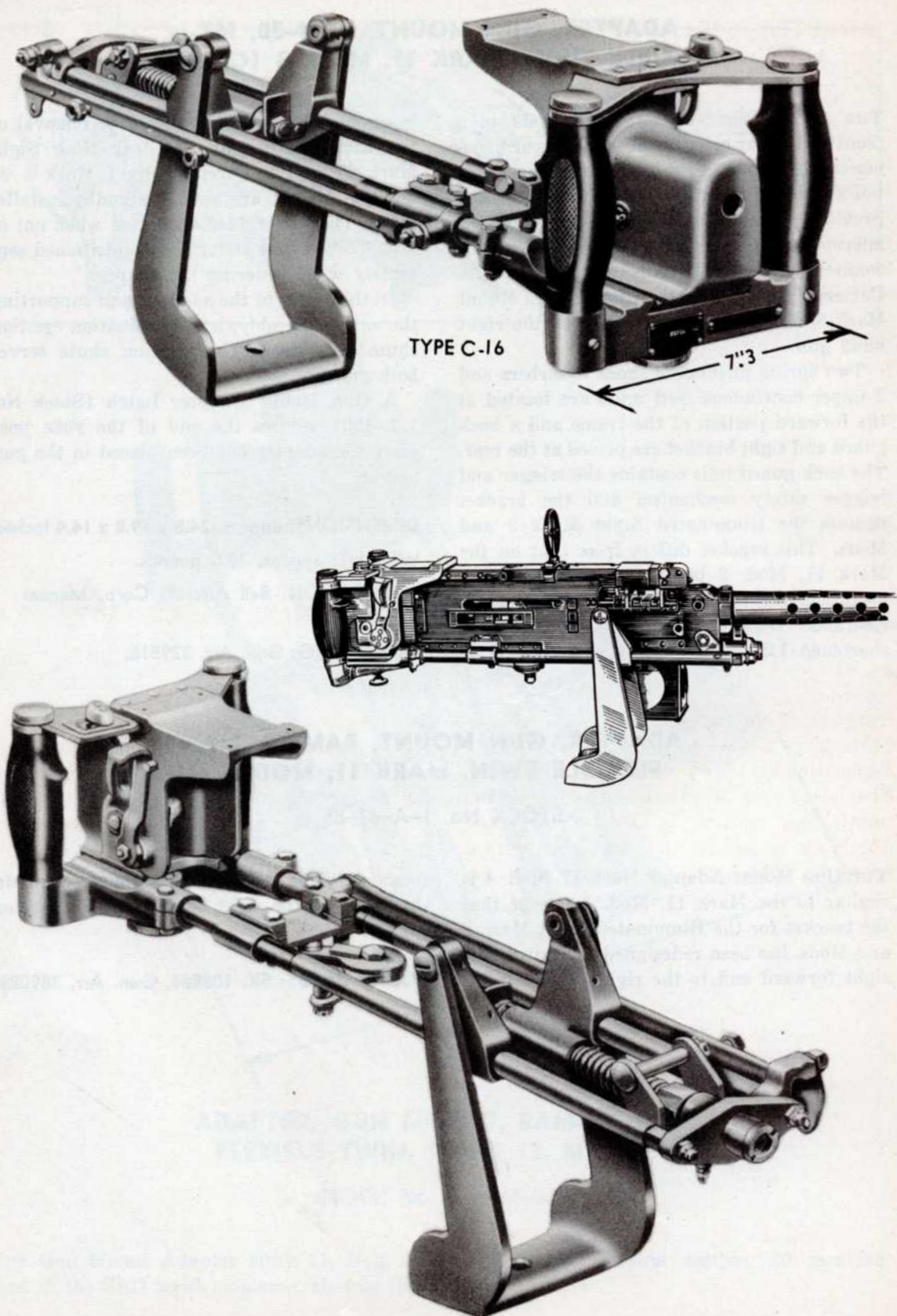
STOCK No. 1-A-67-85

THE Gun Mount Adapter Mark 11, Mod. 4 is similar to the Mark 11, Mod. 3 except that the bracket for the Illuminated Sight Mark 9 and Mods. has been redesigned to position the sight forward and to the right of its former

position. This change was made to eliminate breakage of the sight on the airplane armor plate.

BuORD DWGS: SK. 108866, Gen. Arr. 389088.

ADAPTER, GUN MOUNT, TYPE C-16 AND MARK 12



ADAPTER, GUN MOUNT, TYPE C-16 AND MARK 12

ADAPTER, GUN MOUNT, BAM-30, M2, FLEXIBLE, SINGLE, TYPE C-16

STOCK No. 1-A-67-25

THE Gun Mount Adapter Type C-16 absorbs the recoil shock of a caliber .30 machine gun. It consists of a frame which includes a single pneumatic shock absorber, slide blocks for the rear mount of the gun, and a removable back plate containing the trigger and trigger safety mechanism. The single trigger is operated by the forefinger, and the safety control by the thumb. This safety control is located near the top of the right hand grip support.

When in a forward position, the yoke of the mount allows an upward swing of 90 degrees and a downward swing of 35 degrees. By reversing the yoke, the upward swing is 35 degrees and the downward swing is 90 degrees.

The Gun Mount Adapter Type C-16 is the same as the Gun Mount Adapter Mark 12 except that the Mark 12 uses a different yoke and includes an ammunition box holder. Both adapters may use either Open Fore Post Sight Type A-4 or Mark 6, Mod. 1 and Rear Ring Sight Type B-10 or Mark 12, Mod. 1.

DIMENSIONS: approx. 22.3 x 11.0 x 7.3 inches.

WEIGHT: approx. 8.7 pounds.

PUBLICATION: AAF Tech. Order 11-10-14.

AAF DWG: 40K3852.

MFR'S DWG: Bell Aircraft Corporation
GM-749-658.

ADAPTER, GUN MOUNT, BAM-30, M2, FLEXIBLE, SINGLE, MARK 12

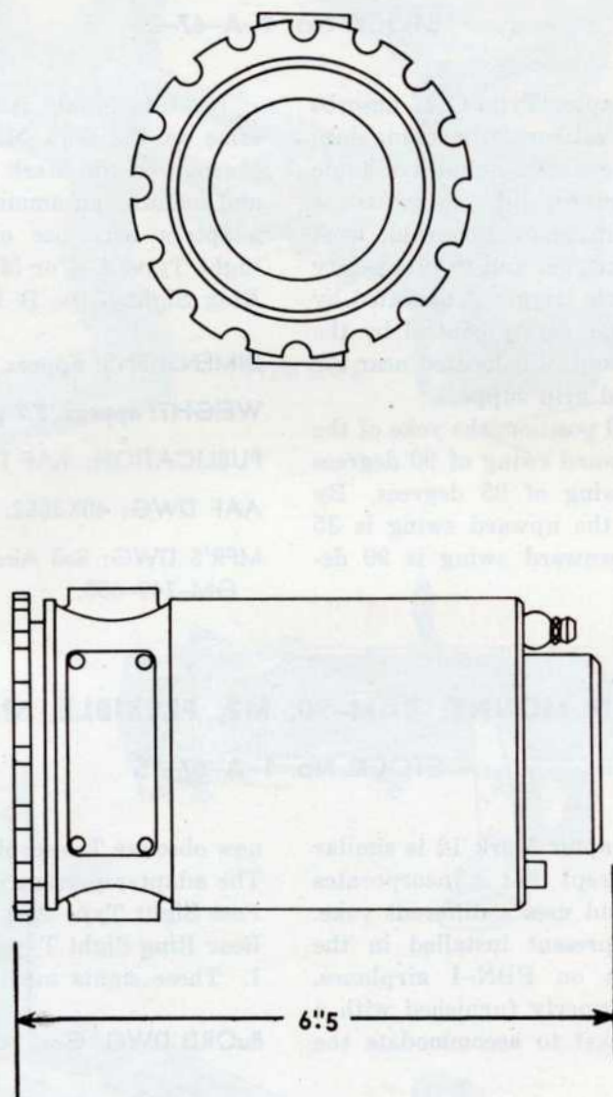
STOCK No. 1-A-67-15

THE Gun Mount Adapter Mark 12 is similar to the Type C-16 except that it incorporates a magazine holder and uses a different yoke. The adapter is at present installed in the tunnel gun position on PBN-1 airplanes. The Mark 12 was formerly furnished with a telescopic sight bracket to accommodate the

now obsolete Telescopic Sight Mark 5, Mod. 1. The adapter presently uses either Open Fore Post Sight Type A-4 or Mark 6, Mod. 1 and Rear Ring Sight Type B-10 or Mark 12, Mod. 1. These sights must be ordered separately.

BuORD DWG: Gen. Arr. 320160.

ADAPTER, GUN MOUNT, MARK 13



ADAPTER, GUN MOUNT, BAM-50, M2, TURRET TYPE, MARK 13

STOCK No. 1-A-69-21

THE Turret Type Gun Mount Adapter Mark 13 absorbs the recoil shock of a caliber .50 machine gun. It consists of an annular housing enclosing a hydraulic shock absorber unit. When this adapter is used, it replaces the Trunnion Adapter (Army Ordnance Dwg. C4052) which is furnished with the gun.

The Mark 13 is similar to the AN-E-10 which uses a series of ring springs instead of

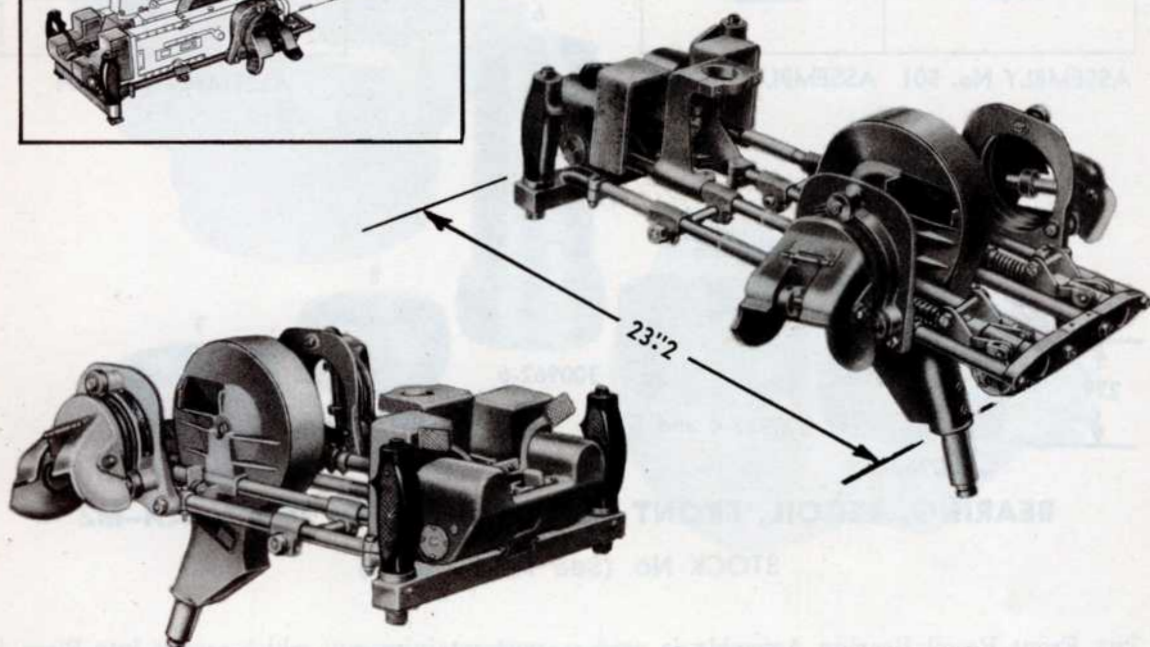
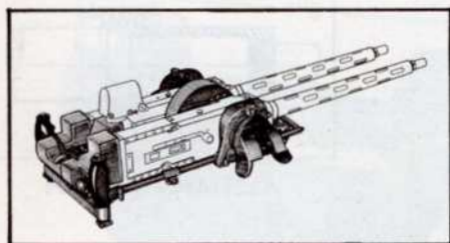
the hydraulic shock absorber unit. The Mark 13 is $\frac{3}{8}$ -inch longer, and has $\frac{3}{32}$ -inch greater recoil. The 2 adapters are interchangeable as complete assemblies only.

DIMENSIONS: approx. 6.5 x 3.6 x 3.6 inches.

WEIGHT: approx. 5.25 pounds.

BuORD DWG: Gen. Arr. 375032.

ADAPTER, GUN MOUNT, MARK 14



ADAPTER, GUN MOUNT, BAM-30, FLEXIBLE, TWIN MARK 14

STOCK No. 1-A-67-100

THE Gun Mount Adapter Mark 14 absorbs the recoil shock of twin caliber .30 machine guns. It is located in a special turret developed to provide a continuous feed installation in the bow of the PBV-5 and PBV-5A airplanes. The adapter consists of a frame of 4 parallel bars attached to front and rear supports, and a centrally located ejection chute and yoke, which serves both guns. Spring-pneumatic shock absorbers are fastened to the front support and suspended from the bars. The rear support carries the hand grips and mounts the removable back plate which contains the trigger and trigger safety mechanism. The guns are fired, and the safety control operated, by the thumb of either hand.

The adapter is secured by the Gun Mount Adapter Latch (Stock No. 1-L-150).

The Mark 14 differs from the Mark 11, Mod. 3 in that the continuous feed units are closer to the center line of the adapter, the face armor bracket has been removed, and a different bracket is provided to mount the Illuminated Sight Mark 9 or Mods. No alternate sight installations are provided for.

DIMENSIONS: approx. 23.2 x 18.4 x 9.0 inches.

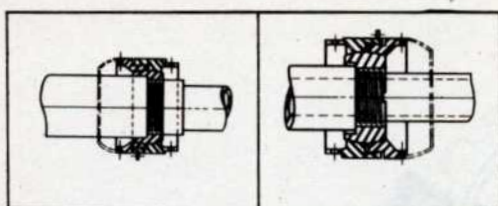
WEIGHT: approx. 27.0 pounds.

PUBLICATIONS: O.H.I. V-1-43, O.C.L.

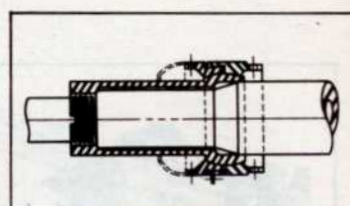
V-17-43, O.T.I. V-25-43.

BuORD DWGS: SK. 108829, Gen. Arr. 375914.

BEARING, MOUNTING, 20 MM, FRONT



ASSEMBLY No. 501 ASSEMBLY No. 503



ASSEMBLY No. 504



BEARING, RECOIL, FRONT ASSEMBLY AUTO. 20 MM AN-M2

STOCK No. (See table below)

THE Front Recoil Bearing Assembly is used with the Gun Mount Adapter AN-M1 for mounting a 20 mm Aircraft Gun AN-M2 to the airplane structure. The assembly consists of 3 main pieces; a mounting bearing which screws into either the front mounting collar or the rear mandrel of the adapter; a bearing support which is secured to the airplane structure; and a bearing support retaining nut which secures the bearing in the support. Any one of 3 different bearings can be affixed to the adapter to obtain the desired positioning of the gun in relation to the airplane structure.

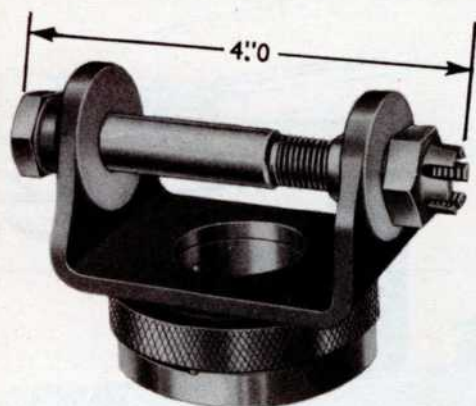
The pieces comprising the various assemblies are as illustrated. Their drawing number is also shown. Piece 3 is the bearing sup-

port retaining nut which screws into Piece 4 and 5, the bearing support, and forms a mounting socket for either Pieces 6, 7 or 8. Pieces 6, 7, and 8 are the 3 alternative types of spherical mounting bearings. Piece 7 screws onto the threaded section at the rear of the adapter and provides a mounting at this point. To fit an installation necessitating a mounting position further to the rear, a suitable sleeve furnished by the airplane contractor is required with Piece 7. Piece 8 enables the bearing to mount at the forward end of the adapter. Piece 6 also screws on the forward end but the assembly is positioned further toward the center due to the integral sleeve.

PIECE NOS. BuOrd Dwg. 300962	ASSEMBLY NO. SHOWN IN BuOrd DWG. 328016	STOCK NO.	DIMENSIONS (approx. inches) (diameter)	WEIGHT (approx. pounds)
3, 4, 5, 8	501	1-B-1745-50	2.9 x 4.5	1.8
3, 4, 5, 7	503	1-B-1745-60	2.9 x 4.5	2.0
3, 4, 5, 6	504	1-B-1745-70	7.6 x 4.5	2.5

PUBLICATION: TM 9-227.

BuORD DWGS: SK. 90912 and 108983 through 108988, Gen. Arr. 300962, 394228, 328016.



MARK 1



BOLT, TRUNNION, MARK 1

STOCK No. 1-B-4532

THE Trunnion Bolt, Mark 1 is used to mount the forward trunnion of a fixed caliber .30 or .50 machine gun to a post (contractor furnished equipment) in the airplane. The bolt includes a U-shaped bracket with a sleeve and release mechanism at its base. The bracket is a single forging and is provided with a bolt which fastens to the trunnion adapter of the gun.

The release mechanism has three retaining balls in the trunnion bracket sleeve which fits over the gun mounting post. When in locked position, the balls project into a groove in the

gun mounting post. To release the bolt, a knurled collar outside the sleeve is rotated 45 degrees, permitting the balls to recede from the groove around the mounting post. This bolt permits the forward mount of the gun to be quickly released from or secured to the airplane.

DIMENSIONS: approx. 4.0 x 2.4 x 2.4 inches.

WEIGHT: approx. 1.2 pounds.

PUBLICATION: O.T.I. V-17-43.

BuORD DWGS: SK. 57928, Gen. Arr. 179008.

BOLT, TRUNNION, TYPE A-3

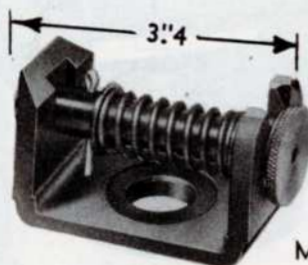
STOCK No. 1-B-4536

THE Trunnion Bolt Type A-3 is similar to the Mark 1.

AAF DWG: 32B1644.



MARK 3 MOD 2



MARK 4

BOLT, TRUNNION, MARK 3, MOD. 2

STOCK No. 1-B-4535-100

THE Trunnion Bolt Mark 3, Mod. 2 connects the forward trunnion of a caliber .30 or .50 machine gun to the airplane. It includes a U-shaped bracket with a sleeve and release mechanism at its base. The bracket is a single forging and is provided with a bolt which fastens to the trunnion adapter of the gun.

The Trunnion Bolt Mark 3, Mod. 2 has a different release mechanism from that of the Mark 1. It consists of 2 parallel release pins, (instead of retaining balls) that fit into the

groove around the trunnion post. The pins are held in locked position by 2 springs. To release the trunnion bolt from the post, the pins are partially withdrawn by pulling on the knurled knobs of the pins, or by pushing on the opposite ends.

DIMENSIONS: approx. 3.8 x 2.4 x 2.4 inches.

WEIGHT: approx. 1.2 pounds.

MFR'S. DWG: Douglas Aircraft Co. 2192638.

BOLT, TRUNNION, MARK 4

STOCK No. 1-B-4535-400

THE Trunnion Bolt Mark 4 provides for rapid mounting and dismounting of the forward end of a fixed caliber .30 or .50 machine gun. It consists of a U-shaped bracket with spring-loaded plunger.

The trunnion bolt is fastened to the airplane by a bolt (furnished by the airplane manufacturer) which passes through a hole

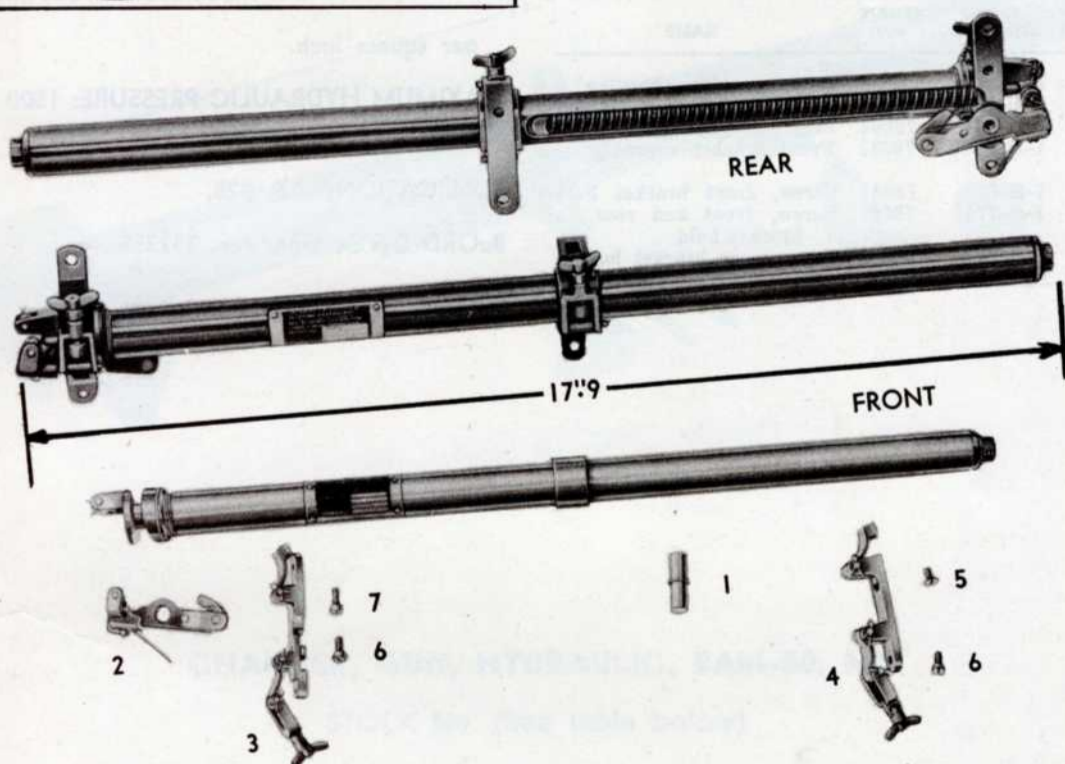
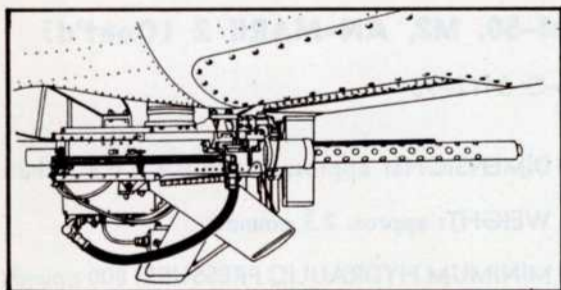
in the base of the bracket. The gun is secured to the trunnion bolt by the plunger and is dismounted by withdrawing the plunger a short distance.

DIMENSIONS: approx. 3.4 x 2.0 x 2.0 inches.

WEIGHT: approx. 0.9 pound.

BuORD DWG: Assembly 422350.

CHARGER, GUN, HYDRAULIC, AN-MARK 2



CHARGER, GUN, HYDRAULIC, BAM-50, M2, AN-MARK 2

STOCK No. 1-C-3412-95

THE Hydraulic Gun Charger Mark 2 is used to charge a caliber .50 machine gun. The charger is simply a piston inside a cylinder and is operated hydraulically by a Remote Control Valve (Stock No. 1-V-430), located in the cockpit.

Hydraulic pressure, from the airplane's hydraulic system, is applied through a control valve to the charging cylinder, and forces a lug, on an extension of the piston, against the gun bolt stud. This action carries the bolt back to the recoil position. A latch mechanism

holds the bolt in this position until the pressure is released from the cylinder, permitting the bolt to return to battery. The control valve can be set either to hold the bolt in the safety position or to complete the charging cycle and prepare the gun for firing.

This charger, which is the same as the Hydraulic Gun Charger Army Type D-2 (AAF Dwg. H41G5288), is not a part of the machine gun, but must be ordered separately. It may be used as either a right hand or left hand installation.

CHARGER, GUN, HYDRAULIC, AN-MARK 2

CHARGER, GUN, HYDRAULIC, BAM-50, M2, AN-MARK 2 (Cont'd)

STOCK No. 1-C-3412-95

The Hydraulic Gun Charger Mark 2 includes the following parts which are illustrated:

ITEM	BuORD STOCK NO.	BENDIX NO.	NAME
1	1-S-22242	78064	Stud bolt (Pin, charging)
2	1-L-2300	78005	Lever assembly
3	1-B-5343	78004	Rear bracket assembly
4	1-B-5340	78031	Front bracket assembly
5	1-S-770	78061	Screw, front bracket hold
6	1-S-773	78062	Screw, front and rear bracket hold
7	1-S-776	78063	Screw, rear bracket hold

DIMENSIONS: approx. 17.9 x 0.9 x 0.9 inches.

WEIGHT: approx. 2.3 pounds.

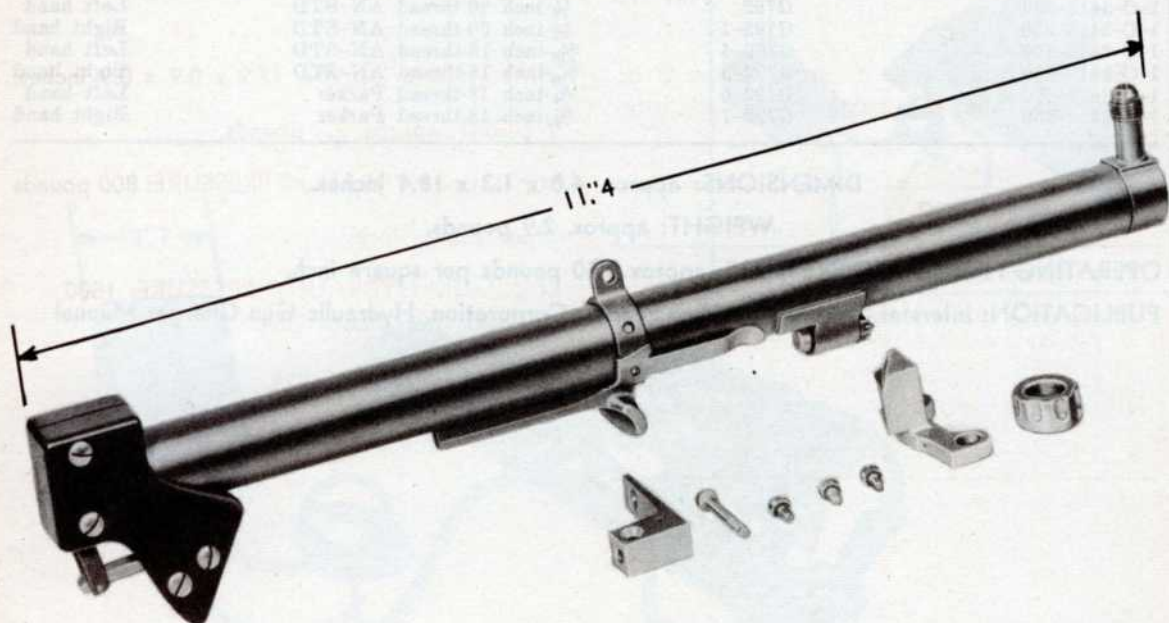
MINIMUM HYDRAULIC PRESSURE: 800 pounds per square inch.

MAXIMUM HYDRAULIC PRESSURE: 1500 pounds per square inch.

PUBLICATION: O.P. 828.

BuORD DWG: Gen. Arr. 332358.

CHARGER, GUN, HYDRAULIC BAM-50, M2



CHARGER, GUN, HYDRAULIC, BAM-50, M2

STOCK No. (See table below)

THE Interstate Hydraulic Gun Charger is a mechanical-hydraulic unit used to charge a caliber .50 machine gun. The charger may be located on the side plate of the gun for either right or left hand operation. The assembly consists of a hydraulically-operated piston, piston springs, a cylinder, a bolt hold-back mechanism, and front and rear supports.

Hydraulic pressure from the airplane's hydraulic system forces the piston from the forward end of the cylinder toward the rear. During this movement, and as the piston springs are compressed, a pawl engages the gun bolt stud and carries the bolt back to the recoil position, causing the trigger to engage. After traveling the full charging stroke, the pressure inside the cylinder is reduced to zero, permitting the springs to return the

piston to the original position and leaving the bolt free to move forward and fire if the trigger is actuated.

An Adel Hydraulic Gun Charging Valve (Stock No. 1-V-435) controls the operation of the charger, and can also be set to hold the bolt back in the safety position.

The charger comes equipped with $\frac{1}{2}$, $\frac{9}{16}$, or $\frac{3}{4}$ inch hydraulic fittings. The chargers using $\frac{9}{16}$ - or $\frac{3}{4}$ -inch fittings are interchangeable for either right or left hand installation providing the proper rear support is used. The charger using the $\frac{1}{2}$ -inch fitting is not interchangeable because this is an offset fitting.

In the following table, the stock numbers identify the unit together with the hydraulic fitting and type of rear support.

CHARGER, GUN, HYDRAULIC BAM-50, M2 (CONT'D.)

STOCK NO.	MFR'S. DWG.	FITTING	OPERATING SIDE
1-C-3412-300	G792	1/2-inch 20-thread AN-STD	Left hand
1-C-3412-350	G792-1	1/2-inch 20-thread AN-STD	Right hand
1-C-3412-400	G792-4	9/16-inch 18-thread AN-STD	Left hand
1-C-3412-450	G792-5	9/16-inch 18-thread AN-STD	Right hand
1-C-3412-600	G792-6	3/4-inch 18-thread Parker	Left hand
1-C-3412-650	G792-7	3/4-inch 18-thread Parker	Right hand

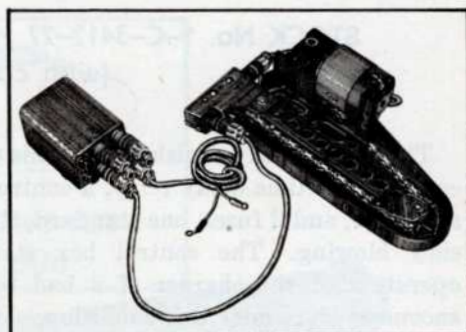
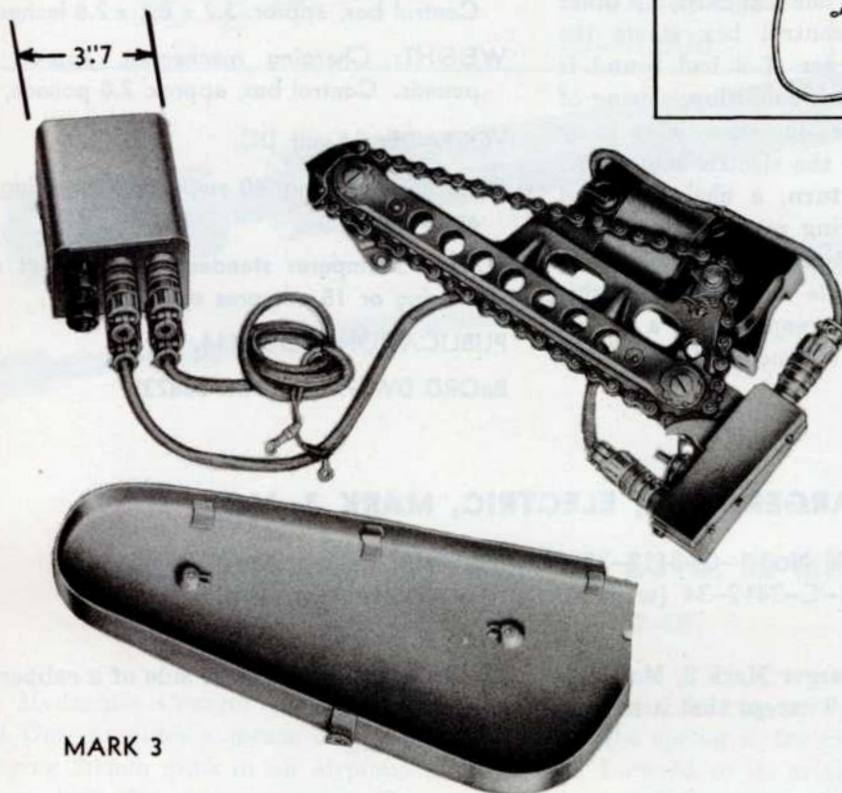
DIMENSIONS: approx. 4.0 x 1.3 x 18.4 inches.

WEIGHT: approx. 2.9 pounds.

OPERATING HYDRAULIC PRESSURE: approx. 850 pounds per square inch.

PUBLICATION: Interstate Aircraft and Engineering Corporation, Hydraulic Gun Charger Manual.

CHARGER, GUN, ELECTRIC MARK 3 AND MOD.



MARK 3

CHARGER, GUN, ELECTRIC, MARK 3

STOCK No. 1-C-3412-27 (with control box assembled), 1-C-3412-29
(with control box disassembled)

THE Electric Gun Charger Mark 3, mounted on the top and left rear side of a caliber .50 machine gun, is used to automatically place a cartridge in the gun breech when the gun is not firing. The charger consists of a loop of bicycle-type chain passed over 3 sprockets. One of the sprockets is driven by an electric

motor, the other 2 are guides. A pawl, attached to the chain, engages the gun bolt stud. As the chain is rotated, the pawl draws the bolt stud back, causing a new round to be inserted in the breech and the old case to be ejected. A chain guard encloses the moving parts.

CHARGER, GUN, ELECTRIC, MARK 3 AND MOD.

CHARGER, GUN, ELECTRIC, MARK 3 (Cont'd)

STOCK No. 1-C-3412-27 (with control box assembled), 1-C-3412-29
(with control box disassembled)

The control box furnished with this charger consists of a time delay relay, a control relay, a resistor, and 2 fuzes, one standard, the other slow blowing. The control box starts the operation of the charger if a bad round is encountered. Under this condition, closing of the firing switch causes the time delay relay to close the circuit to the electric motor. As the chain begins to turn, a chain-operated switch is closed, assuring continuance of motor operation throughout a complete charging cycle. When the cycle is completed, this switch is automatically reopened by a pin on the bicycle-chain and the motor stops operating.

DIMENSIONS: Charging mechanism, approx. 13.4 x 7.2 x 3.7 inches.

Control box, approx. 3.7 x 6.2 x 2.6 inches.

WEIGHT: Charging mechanism, approx. 5.0 pounds. Control box, approx. 2.0 pounds.

VOLTAGE: 24-volt DC.

CURRENT: Starting, 40 amperes. Operating, 20 amperes.

FUZES: 5 amperes standard, 10 amperes slow blowing or 15 amperes standard.

PUBLICATION: O.P. 1114.

BuORD DWG: Gen. Arr. 388232.

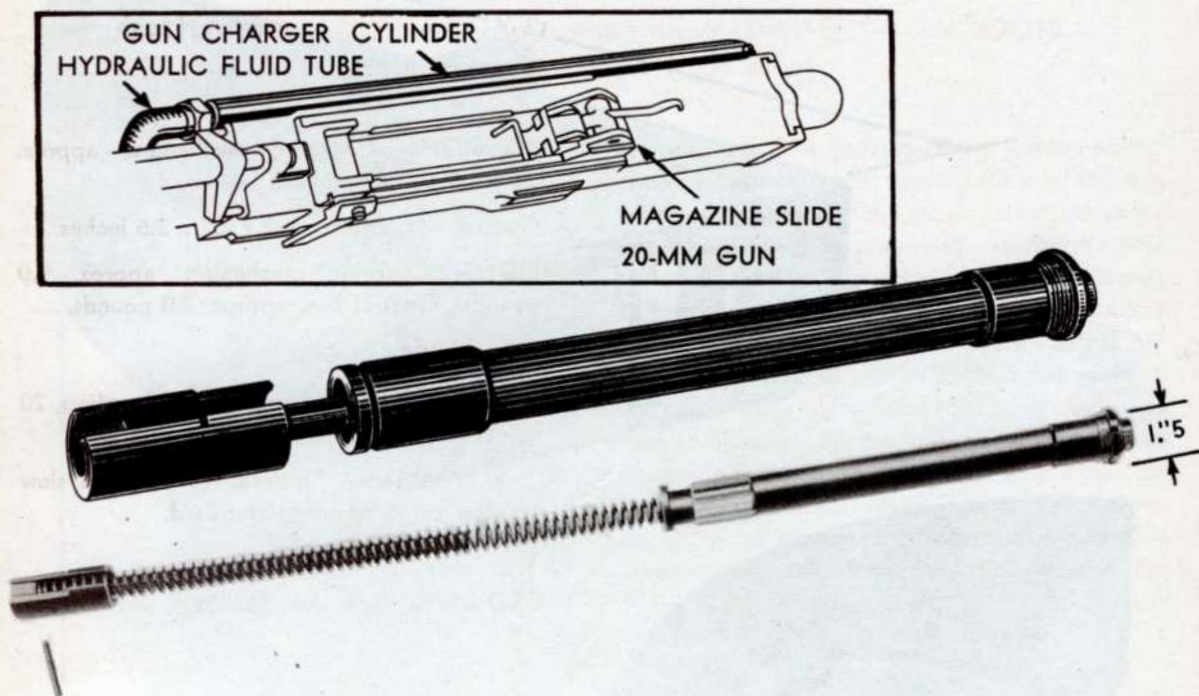
CHARGER, GUN, ELECTRIC, MARK 3, MOD. 1

STOCK No. 1-C-3412-32 (with control box assembled),
1-C-3412-34 (with control box disassembled)

THE Electric Gun Charger Mark 3, Mod. 1 is identical to the Mark 3 except that it mounts

on the top and right rear side of a caliber .50 machine gun.

CHARGER, GUN, HYDRAULIC AUTO, 20 MM, M2



CHARGER, GUN, HYDRAULIC AUTO, 20 MM, M2

STOCK No. 1-C-3412-50

THE Hydraulic Charger for a 20 MM Aircraft Gun provides a means of charging or safetizing 20 mm guns in an airplane by remote control. The charger consists of a spring guide assembly, a piston spring, and a cylinder and piston assembly. These are all assembled within the cylindrical charger housing on the right hand side of the gun.

When the Gun Charger Control Valve (Stock No. 1-V-430) is actuated, hydraulic fluid is permitted to flow into the cylinder chamber, causing a movement of the piston to the rear. The piston carries the gun bolt rearward, to the point where the sear can lock the bolt in the cocked position. After this position is reached, the pressure in the system continues to increase until the control valve handle "pops out." If the control valve is set on "SAFE," hydraulic fluid is locked in the system and holds the bolt in the rear position. If the control valve is set on "FIRE,"

hydraulic fluid is returned to the reservoir, and the spring in the charger forces the piston forward to its original position, leaving the bolt free to move forward and fire if the trigger is actuated.

This charger, which is the same as the Hydraulic Gun Charger AAF Type D-3, is a part of the 20 MM Automatic Gun Type E.

DIMENSIONS (spring extended): approx. 24.0 x 1.5 x 1.5 inches.

WEIGHT: approx. 2.3 pounds.

MINIMUM HYDRAULIC PRESSURE: 800 pounds per square inch.

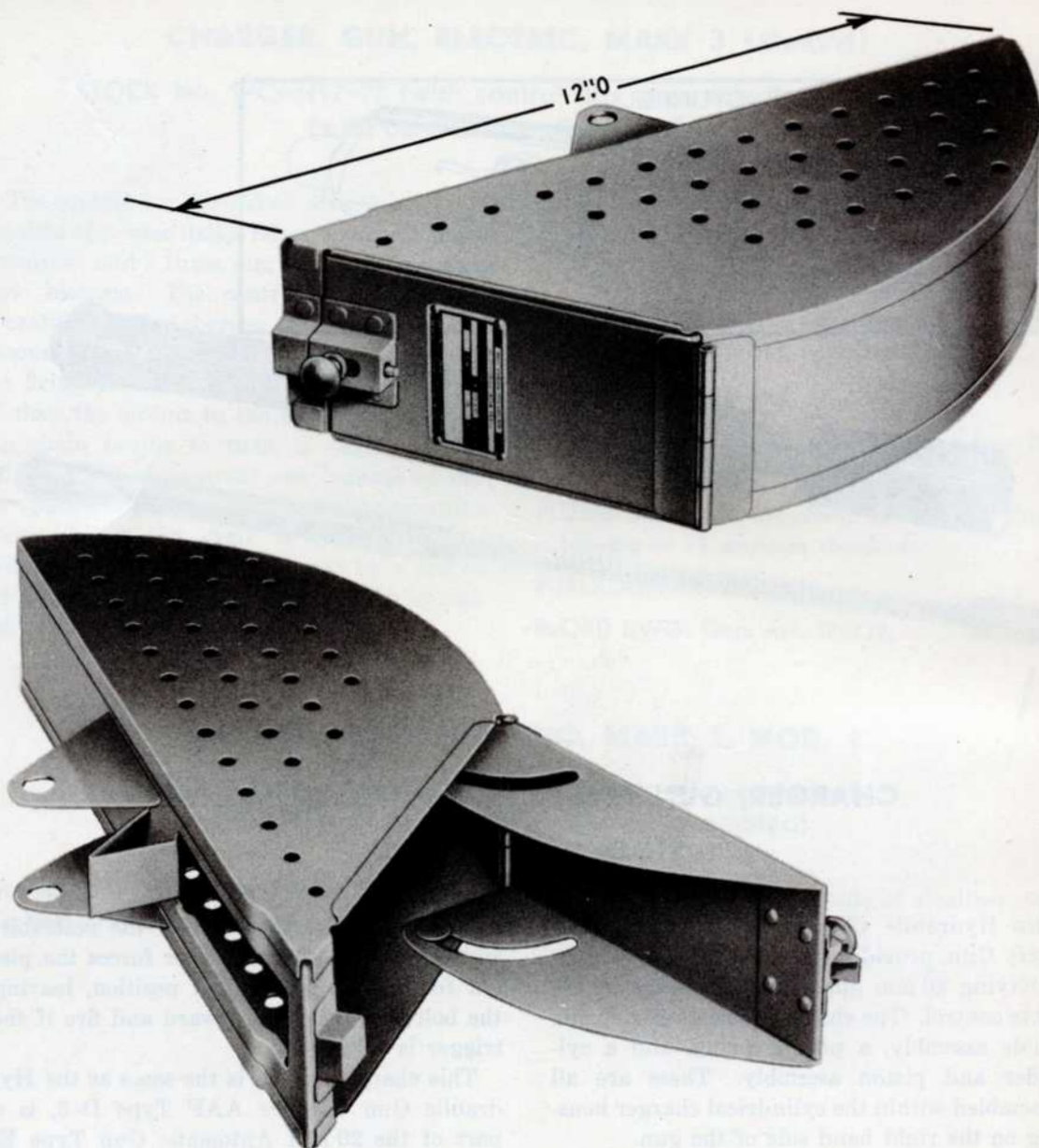
MAXIMUM HYDRAULIC PRESSURE: 1500 pounds per square inch.

PUBLICATIONS: O.P. 829, TM 9-1227, AAF Tech. Order 11-1-21.

AAF DWG: H41G5289.

BuORD DWG: Gen. Arr. 370989.

CONTAINER, EJECTED CASE, MARK 3, MOD. 1



CONTAINER, EJECTED CASE, MARK 3, MOD. 1

STOCK No. 1-C-5431-5

THE Ejected Case Container Mark 3, Mod. 1 is a metal box for receiving empty caliber .30 cartridge cases as they are ejected from the machine gun. It has a hinged door at the rear which is held in the closed position by a snap latch.

The container is used with the Gun Mount

Adapter Mark 9, fitting directly under the gun, inside the fork of the yoke. Nominal capacity is 100 empty cases.

DIMENSIONS: approx. 12.0 x 6.7 x 2.8 inches.

WEIGHT: approx. 1.7 pounds.

BuORD DWGS: SK. 90693, Gen. Arr. 294279.

CONTAINER ASSEMBLY, CASE EJECTION, TYPE A-4



CONTAINER ASSEMBLY, CASE EJECTION, TYPE A-4

STOCK No. 1-C-5457-500

THE Case Ejection Container Type A-4, is a semi-circular sheet metal box for receiving empty caliber .30 cartridge cases as they are ejected from the machine gun. Its nominal capacity is 100 empty cases, and it is used on a Gun Mount Adapter Type C-12.

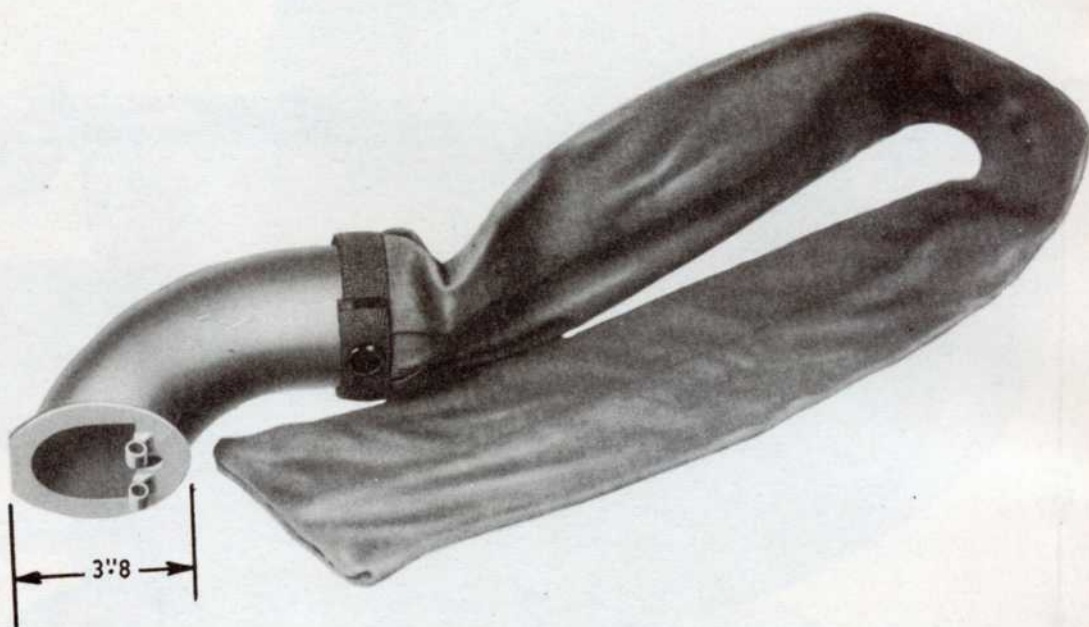
To empty this container, it must be detached from the gun.

DIMENSIONS: approx. 11.6 x 5.5 x 2.4 inches.

WEIGHT: approx. 1.4 pounds.

AAF DWG: 37D5641.

CONTAINER ASSEMBLY, LINK EJECTION, TYPE A-3



CONTAINER ASSEMBLY, LINK EJECTION, TYPE A-3

STOCK No. 1-C-5458

THE Link Ejection Container Assembly Type A-3 receives the links as they are ejected from a single caliber .30 machine gun. It consists of a long narrow canvas bag suspended from the end of a short curved metal tube. The upper end of the tube is attached to either the right or left hand side of the gun by a belt-holding pawl pin. The bag can be quickly emptied by

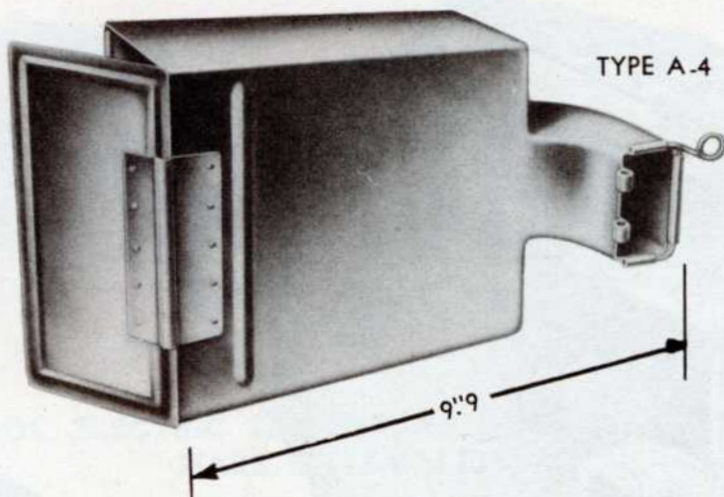
unsnapping the fastener which secures it to the metal tube. This container can hold approximately 200 caliber .30 ammunition belt links.

DIMENSIONS: approx. 28.4 x 3.8 x 3.6 inches.

WEIGHT: approx. 0.8 pound.

AAF DWG: 37D2077.

CONTAINER ASSEMBLY, LINK EJECTION, TYPE A-4, AND A-5



CONTAINER ASSEMBLY, LINK EJECTION, TYPE A-4

STOCK No. 1-C-5435-50

THE Link Ejection Container Assembly Type A-4 is a rectangular metal box for receiving the links as they are ejected from the caliber .30 machine gun. The box has a tapering elbow neck which attaches to either side of the gun. Links are removed from the con-

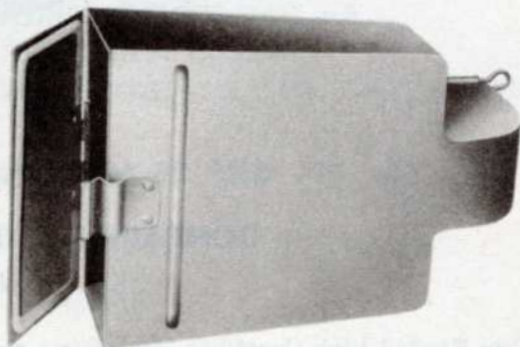
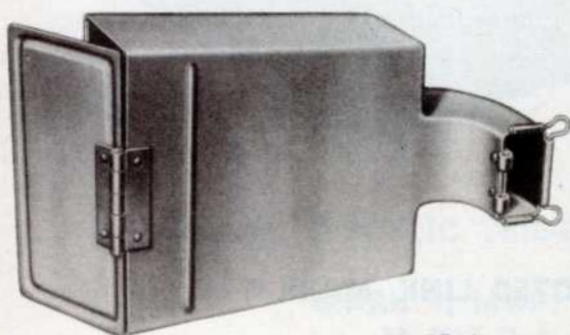
tainer through the metal flap at the bottom.

DIMENSIONS: approx. 9.9 x 5.8 x 3.9 inches.

WEIGHT: approx. 1.3 pounds.

CAPACITY: approx. 200 caliber .30 links.

AAF DWG: 37D5642.



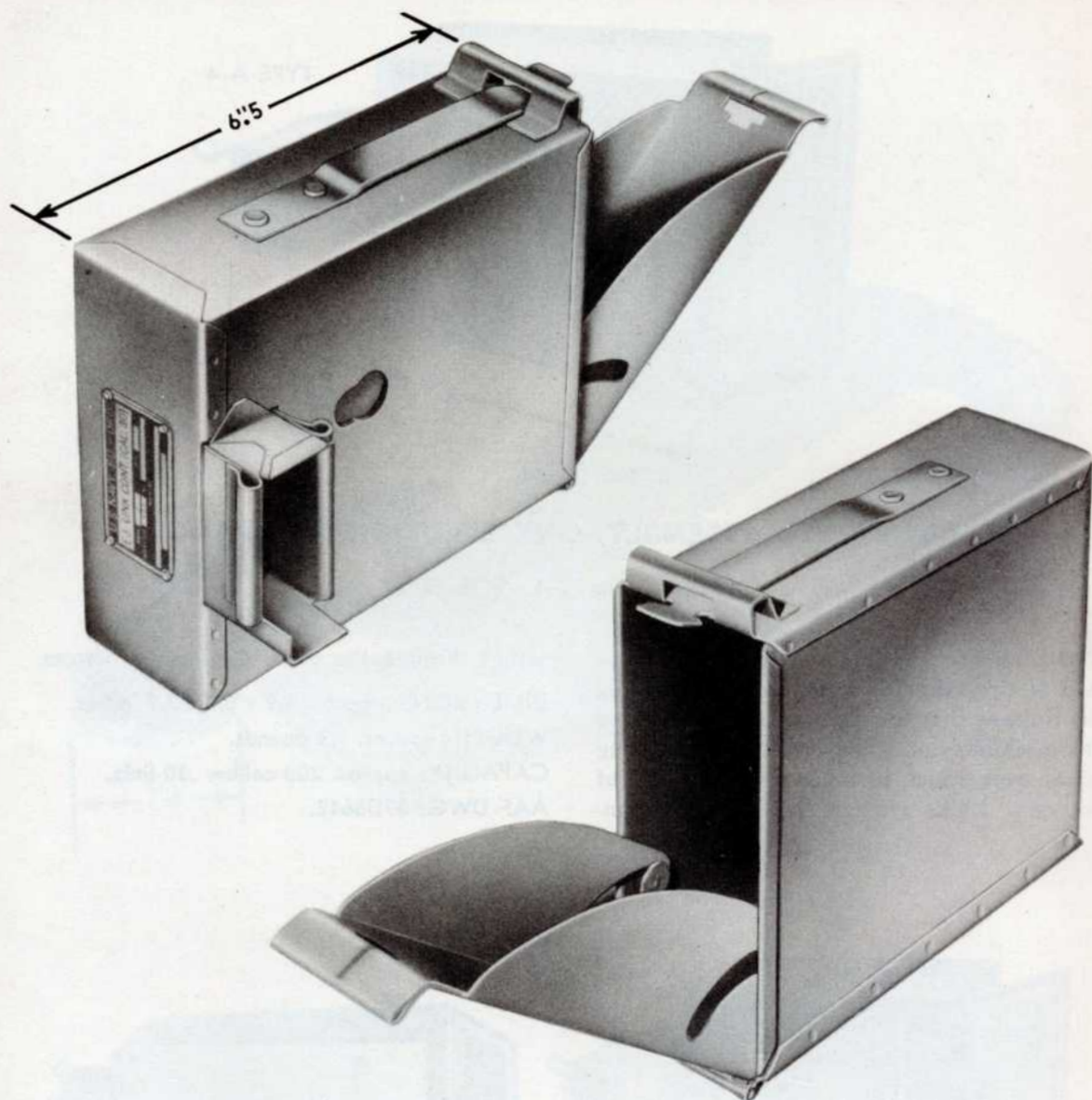
CONTAINER ASSEMBLY, LINK EJECTION, TYPE A-5

STOCK No. 1-C-5435-60

THE Link Ejection Container Assembly Type A-5 is similar to the Type A-4, except for an

extra hook by which it is fastened to the gun.

CONTAINER, EJECTED LINK, MARK 5



CONTAINER, EJECTED LINK, MARK 5

STOCK No. 1-C-5435-15

THE Ejected Link Container Mark 5 is a rectangular sheet metal box for receiving the links as they are ejected from the caliber .30 machine gun. The under side is hinged to facilitate removal of links. The container is used with the Gun Mount Adapter Mark 9 and has a nominal capacity of 100 links.

The Container Mark 5 is an improvement

over the Container Mark 3, Mod. 2 which it supersedes. It has an improved lip design, strengthened seams, and an improved flat spring latch for fastening the under side shut.

DIMENSIONS: approx. 6.5 x 6.0 x 3.5 inches.

WEIGHT: approx. 1.3 pounds.

BuORD DWGS: SK. 90685, Gen. Arr. 294194.

CONTROL, ELECTRIC TRIGGER, MARK 4 AND MOD.



CONTROL, ELECTRIC TRIGGER, BAM-30 AND -50, M2, MARK 4 (12-VOLT)

STOCK No. 1-C-5461-10

THE Electric Trigger Control Mark 4 is a solenoid used to fire a caliber .30 or .50 machine gun. It hooks into a slot on the side of the gun by means of a mounting plate on the bottom of the control.

The moving portion of the solenoid is connected by a lever arm to a plunger that engages the sear mechanism of the gun. When the firing circuit is closed, the solenoid causes the plunger to trip the sear mechanism. The sear then stays in the tripped position, sustaining automatic fire until the circuit is broken, and the solenoid is released.

A connecting rod screwed into the end of the solenoid, and held by a lock nut, determines the amount of movement of the sear plunger. Therefore, adjusting the length of the rod affects the timing of the gun.

The electrical connector on this trigger control is the single-pin screw-on type AN 9533-10S-2P.

The Electric Trigger Control Mark 5 is interchangeable as a complete assembly with the Mark 4, which is 2 inches longer. It may be used on installations where the length makes no difference. The individual parts of the 2 controls are not interchangeable.

DIMENSIONS: approx. 5.9 x 2.8 x 2.2 inches.

WEIGHT: approx. 2.75 pounds.

OPERATING VOLTAGE: 12-volt DC.

CURRENT DRAIN: 10 amperes.

PLUNGER STROKE: 0.097 inch.

PUBLICATION: O.S. 2359.

BuORD DWGS: SK. 90696, Gen. Arr. 300188.

CONTROL, ELECTRIC TRIGGER, BAM-30 AND -50, M2, MARK 4, MOD. 1 (24-VOLT)

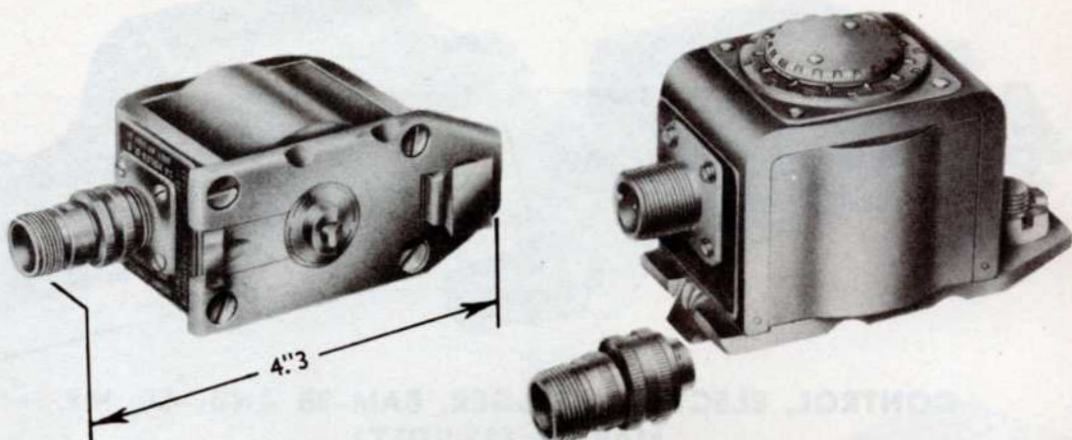
STOCK No. 1-C-5461-15

THIS Electric Trigger Control is identical to the Gun Firing Solenoid Type G-4A (AAF Dwg. 41B3718). It is also the same as the Mark 4 except that it incorporates a 24-volt solenoid instead of the 12-volt unit used in the Mark 4.

The Electric Trigger Control Mark 4, Mod. 1 is interchangeable as a complete assembly with the Mark 5, Mod. 1 which is 2 inches shorter. The individual parts of the 2 units are not interchangeable.

PUBLICATION: AAF Tech. Order 11-1-30.

CONTROL, ELECTRIC TRIGGER, BAM-30 AND -50, MARK 5 AND MOD.



CONTROL, ELECTRIC TRIGGER, BAM-30 AND -50, MARK 5 (12-VOLT)

STOCK No. 1-C-5462

THE Electric Trigger Control Mark 5 is a solenoid used to fire a caliber .30 or .50 machine gun. It hooks into a slot on the side of the gun by means of a mounting plate on the bottom of the control.

The solenoid plunger protrudes through the bottom of the control and trips the sear mechanism of the gun when the firing circuit is closed. The sear then stays in the tripped position, sustaining automatic fire, until the circuit is broken and the solenoid is released.

A notched dial on the top of the control may be turned to adjust the timing of the gun. Controls of earlier manufacture had a dial using an exposed turning pin. Present controls do not have this pin.

This control is interchangeable as a complete assembly with the Electric Trigger Control Mark 4 which is 2 inches longer.

The electrical connector is the single-prong, screw-on type AN3102-10S-2P.

DIMENSIONS: approx. 4.3 x 2.1 x 2.5 inches.

WEIGHT: approx. 2.25 pounds.

OPERATING VOLTAGE: 12 volts DC.

CURRENT DRAIN: 9.5 amperes.

PLUNGER STROKE: 0.322 inch.

PUBLICATIONS: O.T.I. V-13-43, AAF Tech.

Orders 11-1-30, 11-20-16, 11-20-12.

BuORD DWGS: SK. 90696, Gen. Arr. 300186.

CONTROLS, ELECTRIC TRIGGER, BAM-30 AND -50, MARK 5, MOD. 1 (24-VOLT)

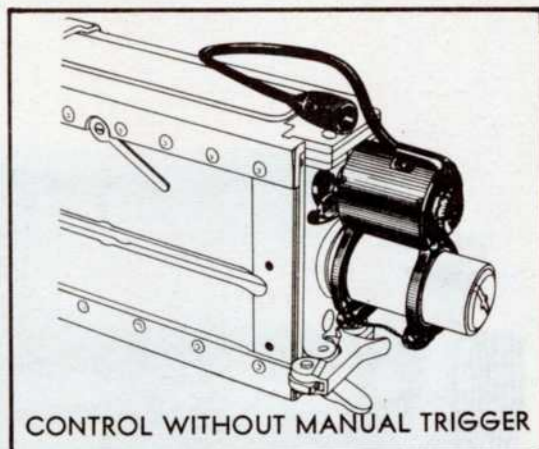
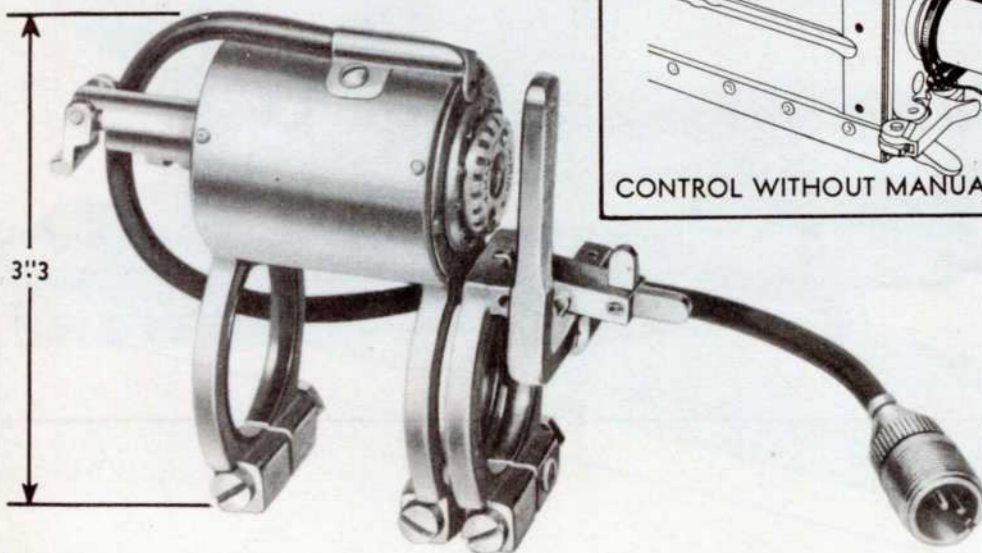
STOCK No. 1-C-5462-5

THE Electric Trigger Control Mark 5, Mod. 1 is the same as the Mark 5, except that it employs a 24-volt solenoid.

The Mark 5, Mod. 1 is identical with the Gun Firing Solenoid Type G-9 (AAF Dwg. H41D10358), and both of these controls are

interchangeable with the Electric Trigger Control Mark 4, Mod. 1 also known as the Gun Firing Solenoid Type G-4A (AAF Dwg. 41B3718). These last types are 2 inches longer than the Mark 5, Mod. 1 but employ the same type of electrical connector.

CONTROL, ELECTRIC TRIGGER, BAM-50 MARK 7, MOD. 1 (24-VOLT)



CONTROL, ELECTRIC TRIGGER, BAM-50 MARK 7, MOD. 1 (24-VOLT)

STOCK No. 1-C-5463

THE Electric Trigger Control Mark 7, Mod. 1 is a solenoid used to fire caliber .50 machine guns. It is installed on the buffer tube of the gun's backplate. The filler piece in the top of the backplate is removed, and the plunger of the control projects through the opening provided and engages the trigger bar in the gun.

This control assembly, which is similar to the Gun Firing Solenoid Type G-11 (AAF Spec. 93-24746) and the Manual Trigger Type A-1 (AAF Dwg. 43A15180), uses a single-prong screw-on type AN3106-10S-2P electrical connector.

The assembly consists of the control itself, and the manual standby firing trigger which

also attaches over the buffer tube at the rear of the solenoid.

DIMENSIONS:

Trigger, approx. 2.3 x 3.3 x 1.6 inches.

Control, approx. 1.6 x 3.3 x 3.7 inches.

WEIGHT:

Trigger, approx. 0.3 pound.

Control, approx. 1.3 pounds.

OPERATING VOLTAGE: 24-volt DC.

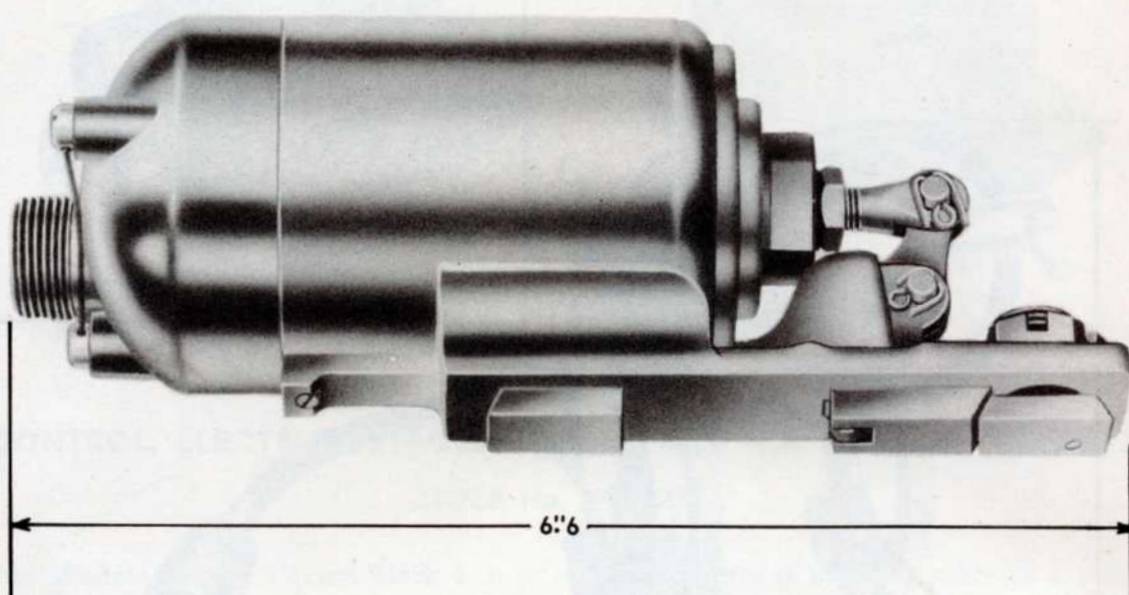
CURRENT DRAIN: 4.2 amperes.

PLUNGER STROKE: 0.062 inch.

PUBLICATION: AAF Tech. Order 11-1-30.

BuORD DWG: SK. 99030.

SOLENOID, LEFT HAND GUN, TYPE C-4C



SOLENOID, LEFT HAND GUN, TYPE C-4C

STOCK No. 1-S-9593

THE Left Hand Gun Solenoid Type C-4C is used on some early SNJ airplanes, for electric trigger control of free-firing caliber .30 and caliber .50 machine guns. The solenoid is mounted in a slot in the left hand side plate of the gun. A lever arm connects the solenoid to a plunger that engages the sear mechanism of the gun. When the firing circuit is closed, the solenoid causes the plunger, which projects through the gun side plate, to trip the sear mechanism. The tripped position is retained as long as the circuit is unbroken.

A connecting rod, screwed in the end of the solenoid and held by a lock nut, determines the amount of movement of the sear plunger. Adjusting the length of the rod alters the timing of the gun.

A 2-pin, screw-on type electrical connector

is a part of the solenoid head cover. Removing the cover, reversing the terminals underneath, and then reassembling the head converts this solenoid from left to right hand operation.

This solenoid has been superseded by the Electric Trigger Control Mark 4 and Mark 5. It is interchangeable with these units as a complete assembly only.

DIMENSIONS: approx. 6.6 x 2.3 x 2.3 inches.

WEIGHT: approx. 2.9 pounds.

OPERATING VOLTAGE: 12-volt DC.

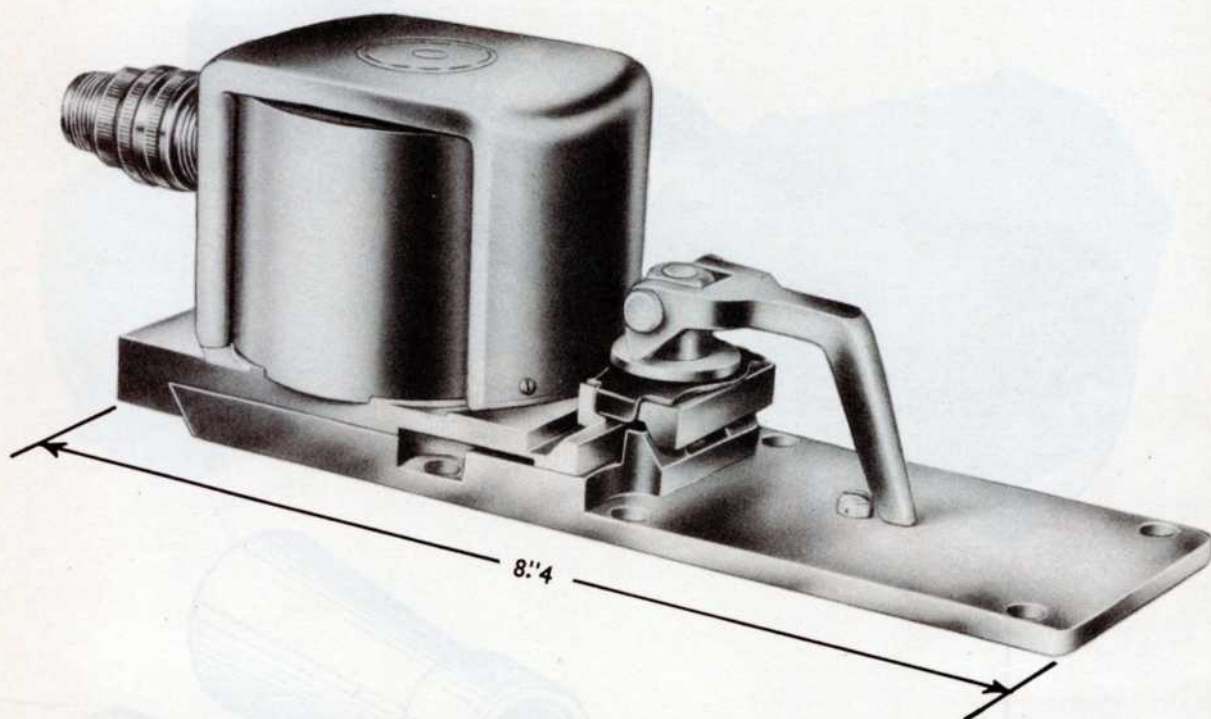
CURRENT DRAIN: 18 amperes.

PLUNGER STROKE: 0.344 inch.

PUBLICATION: AAF Tech. Order 11-1-30.

AAF DWG: 41B5099L.

TRIGGER, ELECTRIC, AG 20 MM, TYPE AN-M1



TRIGGER, ELECTRIC, AG 20 MM, TYPE AN-M1

STOCK No. 1-T-2890

THE Electric Trigger Type AN-M1 is a solenoid used to control the fire of a 20 mm AN-M2 Aircraft Gun Type E. It is mounted on a bracket at the bottom of the gun. The sear cover plate assembly and the solenoid body comprise the complete Electric Trigger Type AN-M1. The solenoid body is attached perpendicular to the sear cover plate by means of a snap latch. A movable plunger protruding through the cover plate operates the sear of the gun trigger mechanism. When the solenoid is energized by pressing a firing switch, magnetic forces actuate the plunger so as to release the sear, and fire the gun. Release of the firing switch opens the circuit, and a spring returns the plunger to its original position, causing the gun to cease firing.

This device was formerly known as the Electric Trigger Control Mark 6, Mod. 1 and the Gun Firing Solenoid Type G-17. The electrical connector is the single prong, screw-on type AN3102-10S-2P.

DIMENSIONS: approx. 8.4 x 2.8 x 2.9 inches.

WEIGHT: approx. 5.3 pounds.

OPERATING VOLTAGE: 24-volt DC.

CURRENT DRAIN: 10 amperes.

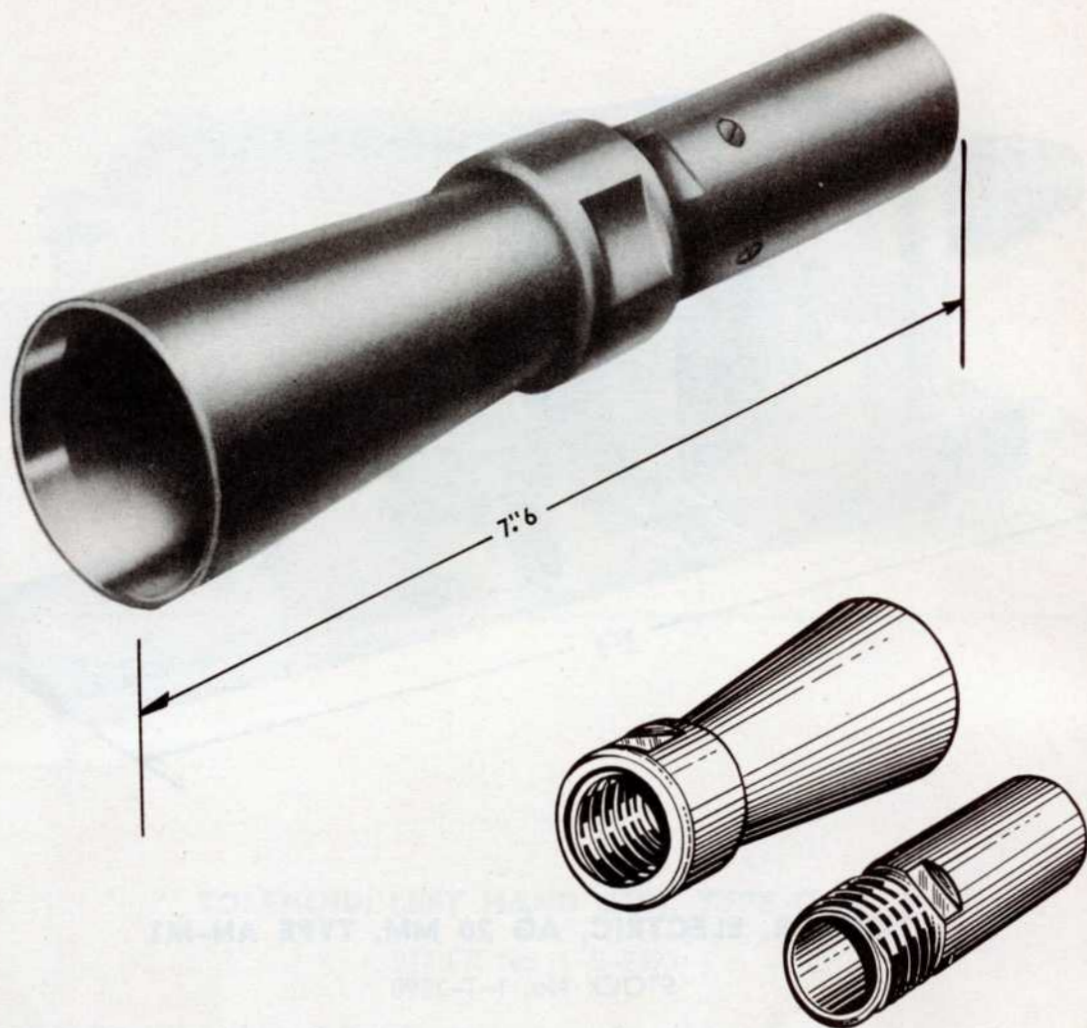
PLUNGER STROKE: 0.31 inch.

PUBLICATION: O.P. 829.

AAF DWG: H43G10990.

BuORD DWGS: SK. 99028, Assembly 339964.

ELIMINATOR, FLASH, MARK 1



ELIMINATOR, FLASH, MARK 1

STOCK No. 1-E-465

THE Flash Eliminator Mark 1 is attached to the end of a caliber .50 machine gun to decrease the blinding effect on the gunner's eyes of the powder flash emitted from the gun barrel. The device consists of 2 parts that screw together by a self-locking thread. One part is threaded on the inside, and fastens to the end of the gun barrel, and the other is

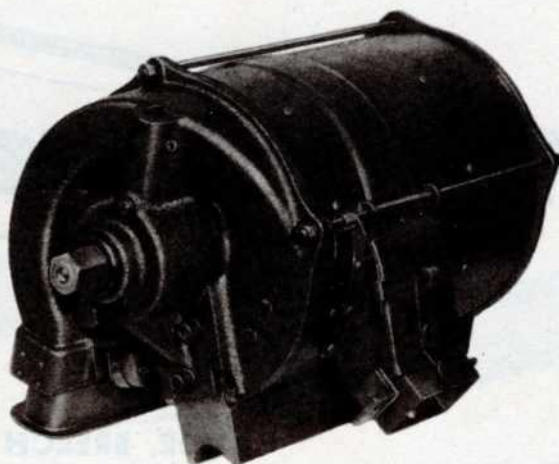
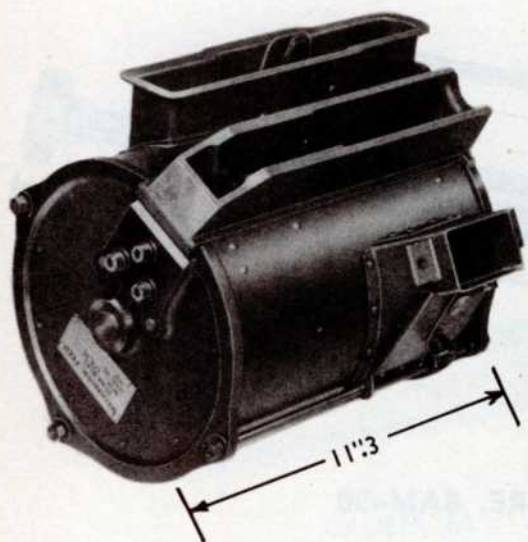
flared out to form a cone. The eliminator can only be used with the caliber .50 gun barrel assembly having the Removable Barrel Bearing Sleeve (Stock List No. 1-B-710).

DIMENSIONS: approx. 7.6 x 1.9 x 1.9 inches.

WEIGHT: approx. 1.3 pounds.

BuORD DWG: Gen. Arr. 394222.

FEED MECHANISM, AIRCRAFT AUTOMATIC, 20 MM, TYPE M1A1



RIGHT HAND FEED

FEED MECHANISM, AIRCRAFT AUTOMATIC, 20 MM, TYPE M1A1

STOCK No. 1-F-122-50 LEFT HAND, 1-F-122-75 RIGHT HAND

THE 20 MM Feed Mechanism Type M1A1, as used on a 20 MM Aircraft Automatic Gun, pulls the belted ammunition into the feed mechanism housing, separates and ejects the links, and feeds the unbelted rounds of ammunition into the gun. It consists of a circular metal housing, an assembly of sprockets mounted on a shaft, and a spiral spring.

The feed mechanism derives power for its operation from the recoil of the gun and from the driving spring which rotates the shaft. The spring is initially wound to a suitable tension which is maintained by the recoil of the gun actuating a rack and pinion and a ratchet assembly. The sprockets engage the rounds in the belt and pull the ammunition into the mechanism as they revolve with the shaft.

The front casting is constructed to act as a cam, pushing the rounds to the rear, and

freeing them of the links as they revolve.

The parts of this feed mechanism which have piece numbers followed by the letter "A" cannot be used in the left hand feed; parts with piece numbers followed by the letter "B" cannot be used in the right hand feed. All other parts are interchangeable.

The Feed Mechanism Type M1A1 is an improved design of the AN-M1. It has a stronger driving spring, 4 sprockets instead of 3, a stronger front cover, and an improved camming surface.

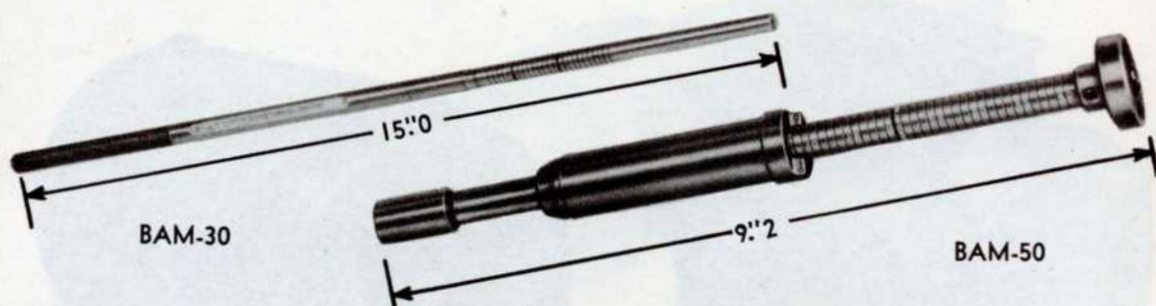
DIMENSIONS: approx. 11.3 x 7.3 x 6.3 inches.

WEIGHT: approx. 19.3 pounds.

ARMY ORD DWGS: D69488 (left hand), D69487 (right hand).

BuORD DWGS: 395656 (left hand), 395655 (right hand).

GAGE, BREECH BORE, BAM-30 AND -50



GAGE, BREECH BORE, BAM-30

STOCK No. 1-G-30

THE Breech Bore Gage BAM-30, is used to determine the chamber dimensions of the bullet seat in caliber .30 machine guns. The gage consists of a slightly tapered rod marked in increments of $\frac{1}{10}$ th inch, from 0 to 2 inches. Each graduation can be converted into an approximation of the service life remaining in the barrel.

When the gage is inserted in a new barrel, it will seat at approximately 0 inches. A ser-

viceable barrel will gage from 0 to the 2-inch mark. A red line at the 2-inch mark enables the user to determine quickly whether or not a barrel is serviceable.

DIMENSIONS: approx. 15.0 x 0.8 x 0.8 inches.

WEIGHT: approx. 0.5 pound.

ARMY ORD DWG: C3940.

BuORD DWG: 296454.

GAGE, BREECH BORE, BAM-50

STOCK No. 1-G-34

THIS Breech Bore Gage performs the same function for the caliber .50 machine gun as the previously described gage does for the caliber .30 machine gun.

The appearance is somewhat different, however, since this gage has both a rod and a slider. When the slider is inserted into the chamber of the gun, and the rod is placed in the barrel as far as it will go, a reference mark on the rear of the slider will be opposite a graduated mark on the rod. The figure this mark represents indicates the service life of

the barrel. The rod is marked from 0 to 40 with 10 graduations to the inch. The red rejection line located around the rod at the 20th graduation indicates approximately 3000 rounds of firing.

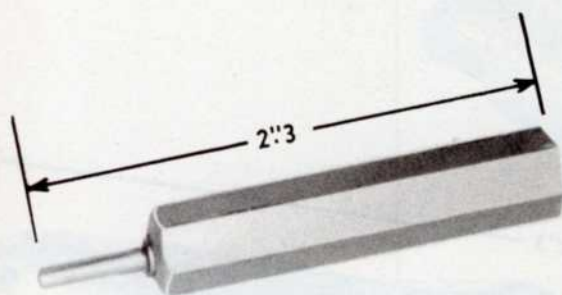
DIMENSIONS: approx. 9.2 x 1.0 x 1.0 inches.

WEIGHT: approx. 0.6 pound.

ARMY ORD DWG: C2623.

BuORD DWG: 308013.

GAGE, FIRING PIN HOLE, BAM-30 AND -50



CALIBER .50



CALIBER .30

GAGE, FIRING PIN HOLE, BAM-30, M2

STOCK No. 1-G-49-75

THE Firing Pin Hole Gage for the caliber .30 machine gun is a "NO GO" type gage used to obtain the proper measurement of the firing pin hole. If the gage will go into the firing pin hole, the bolt should be scrapped.

The gage consists of a handle and a plug .008-inch in diameter. The gun caliber for

which the gage is used is stamped on the handle.

DIMENSIONS: approx. 2.3 x 0.4 x 0.4 inches.

WEIGHT: approx. 0.1 pound.

PUBLICATION: O.P. 1015.

ARMY ORD. DWG: A77203.

GAGE, FIRING PIN HOLE, BAM-50, M2

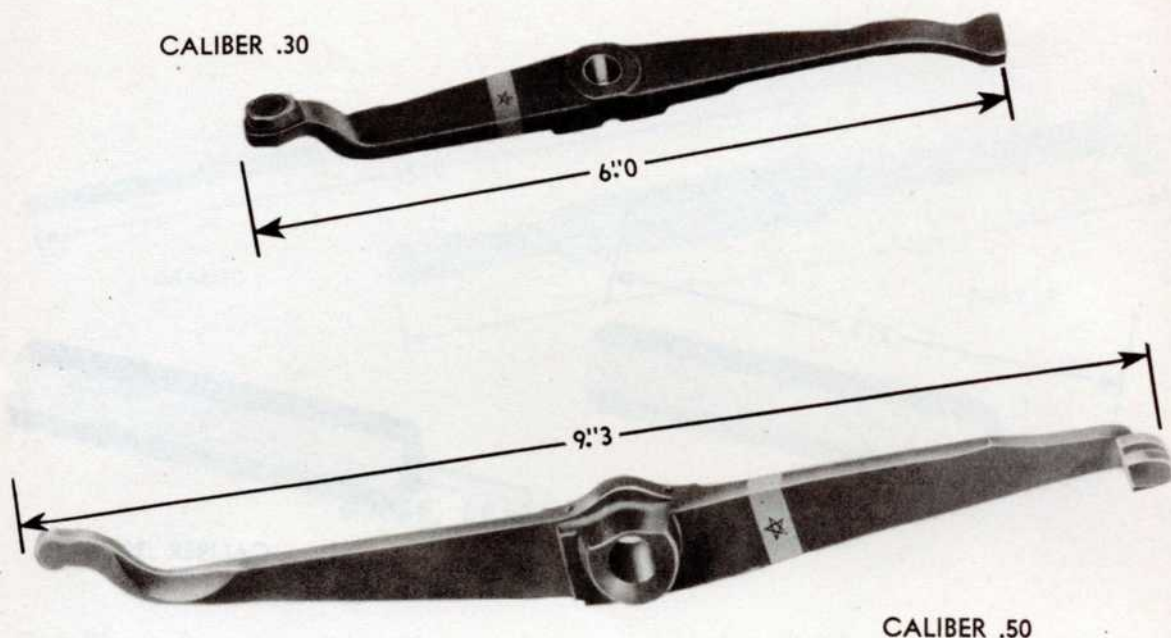
STOCK No. 1-G-49-95

THE Firing Pin Hole Gage for the caliber .50 machine gun is similar to the gage for the caliber .30 machine gun. The diameter of the

plug for caliber .50 guns is 0.084 inch.

ARMY ORD DWG: A77200.

LEVER, FEED BELT, SPECIAL CHECK LEVER, $\frac{3}{16}$ -INCH STAR AND RED STRIPE, FOR CALIBER .30 AND .50 MACHINE GUNS



LEVER, FEED BELT, SPECIAL CHECK LEVER, $\frac{3}{16}$ -INCH STAR AND RED STRIPE, FOR CALIBER .30 MACHINE GUNS

STOCK No. 1-L-3280-25

THE Special Check Belt Feed Lever for caliber .30 BAM guns is for use by activities other than machine gun major overhaul shops to check the relative positions of the belt feed lever ends.

It should normally be used only as a gage in accordance with instructions contained in O.T.I. GV35-43, and not as a replacement

part. The $\frac{1}{4}$ -inch red stripe was painted on the lever to identify it as a check lever.

DIMENSIONS: approx. 6.0 x 0.9 x 0.5 inches.

WEIGHT: approx. 0.1 pound.

PUBLICATION: O.T.I. GV35-43.

ARMY ORD DWG: B134176.

BuORD DWG: 162580.

LEVER, FEED BELT, SPECIAL CHECK LEVER, $\frac{3}{16}$ -INCH STAR AND RED STRIPE, FOR CALIBER .50 MACHINE GUNS

STOCK No. 1-L-3281-25

THIS Special Check Belt Feed Lever is for caliber .50 machine guns and except for di-

DIMENSIONS: approx. 9.3 x 1.1 x 1.5 inches.

WEIGHT: approx. 5.3 ounces.

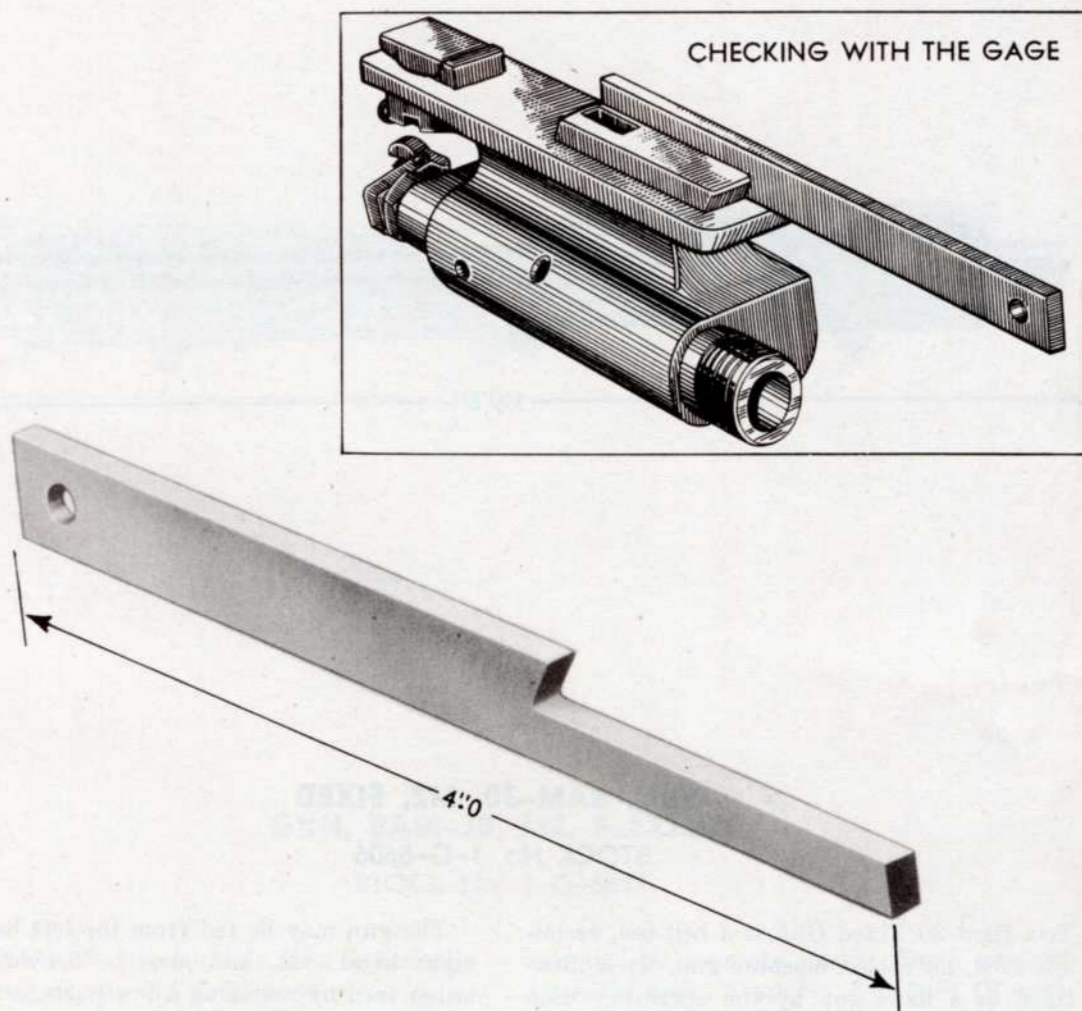
mensions is the same as the Special Check Belt Feed Lever for caliber .30 machine guns.

PUBLICATION: O.T.I. GV35-43.

BuORD DWG: 284275.

ARMY ORD DWG: C64278.

GAGE, SLIDE LOCATING, TRIGGER MOTOR, MARK 1, MOD. 1



GAGE, SLIDE LOCATING, TRIGGER MOTOR, MARK 1, MOD. 1

STOCK No. 1-G-117

THE Trigger Motor Slide Locating Gage is used to check the dimension on the trigger motor that extends from the bottom of the angled surface on the front mounting lug to the after edge of the slide. This dimension should be 1.406 inches \pm .003 inch.

The gage is a small flat piece of metal with a notch on one side. The dimension of this notch, which is also considered maximum for

the trigger motor, is 1.409 inches \pm .000 and $-$.002 inch.

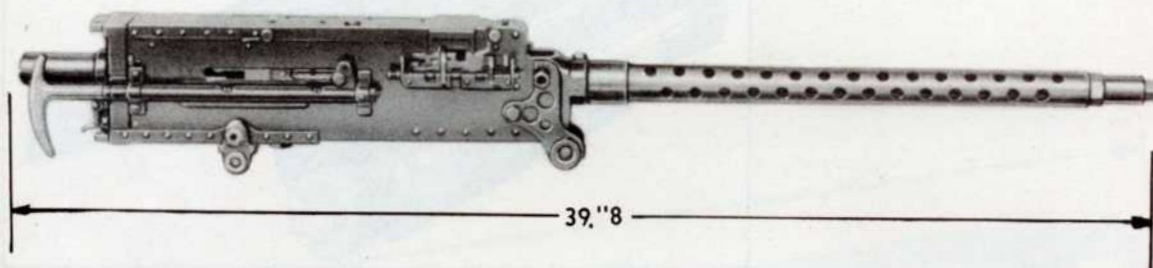
DIMENSIONS: approx. 4.0 x 0.1 x 0.4 inches.

WEIGHT: approx. 0.2 pound.

PUBLICATION: O.C.L. V-7-43.

BuORD DWG: SK. 124095.

GUN, BAM-30, M2, FIXED



GUN, BAM-30, M2, FIXED

STOCK No. 1-G-5606

THE Bam-30 Fixed Gun is a belt-fed, recoil-operated, air-cooled machine gun. It is identified as a fixed gun by the operating slide group, and absence of provisions for manual firing. It is mounted rigidly to the airplane by a trunnion bolt in the front, and a rear mounting post in the rear.

The gun is fired by a trigger motor unit in synchronized installations, and by an electric trigger control when installed outside the disc of the propeller rotation. The trigger motor or trigger control may be installed on either side of the gun. The operating slide must be installed on the side opposite to that on which the trigger motor is installed. Duplicate mounting facilities are provided on both sides of the gun, and no extra parts are required to change the operating slide group from one side of the gun to the other.

The gun may be fed from the left hand or right hand side, and may be converted to either feed by reversing a few parts.

All parts of this gun, except those of the operating slide group, may be used for the Flexible Gun (Stock No. 1-G-5611), for the Flexible Gun with Fixed Type Back plate (Stock No. 1-G-5611) and for the Flexible Gun with Fixed Type Back Plate (Stock No. 1-G-5612).

DIMENSIONS: approx. 39.8 x 5.3 x 3.3 inches.

WEIGHT: approx. 21.5 pounds.

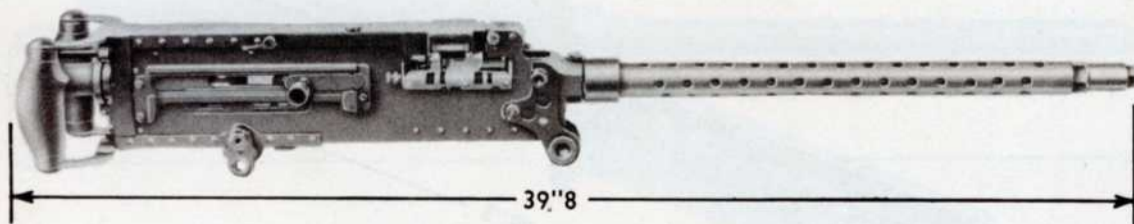
PUBLICATIONS: O.P. 215, 398, 552, 558, 714,
O.C.L. V-34, SNL A-28, TM 9-205; 9-1205.

AAF DWG: H39G5331.

ARMY ORD DWG: 51-57-3.

BuORD DWGS: SK. 282205, Gen. Arr. 204675.

GUN, BAM-30, M2, FLEXIBLE



GUN, BAM-30, M2, FLEXIBLE

STOCK No. 1-G-5611

THE BAM-30, M2, Flexible Gun is basically the same as the BAM-30 fixed gun. A retracting slide group assembly mounted on the side of the gun is used instead of the operating slide group assembly. This retracting slide group is usually installed on the right hand side of the gun, but may be changed to the left hand side without extra parts. The flexible type gun has hand grips, a manual trigger and safety, and an internal trigger bar (with pin and spring). These are not used on fixed guns. All other parts are common to both guns, and completely interchangeable.

This gun is used in free gun positions where simple non-recoil absorbing adapters, such as the Mark 9, are used.

Front and rear wind vane sight brackets previously supplied with the gun are now

supplied as separate items. These brackets are listed under Stock No. 1-B-5984 (Front), and 1-B-5984-15 (Rear).

Magazines and ejected link and case containers are used with the flexible gun, although in some installations, the latter 2 accessories are omitted, and the ejected links and cases are allowed to fall on the deck or over the side.

DIMENSIONS: approx. 39.8 x 5.5 x 6.6 inches.

WEIGHT: approx. 23.0 pounds.

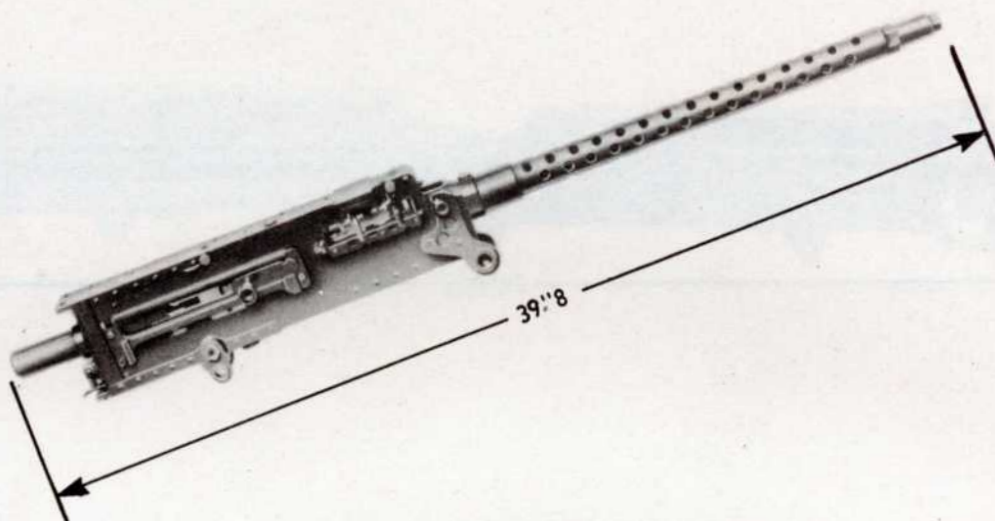
PUBLICATIONS: O.P. 714, 558, 398, 215, O.C.L. V-34, S.N.L. A-28, and TM 9-205; 9-1205.

AAF DWG: H39G5331.

ARMY ORD DWG: 51-76-1.

BuORD DWGS: SK. 275711, Gen. Arr. 204674.

GUN, BAM-30, M2, FLEXIBLE WITH FIXED TYPE BACK PLATE



GUN, BAM-30, M2, FLEXIBLE WITH FIXED TYPE BACK PLATE

STOCK No. 1-G-5612

THE BAM-30 Flexible Gun with Fixed Type Back Plate is equipped with a retracting slide group assembly and is used in installations which require flexibility of movement, but which do not require hand grips on the guns. Such installations are found in power-operated gun turrets or in gun mount adapters equipped with hand grips (such as Gun Mount Adapter Mark 11 and Mods., etc.)

When mounted in an adapter, the gun is fired manually by a trigger and safety mechanism which is part of the adapter. A bell crank, spacer, and spring (or back plate trigger) are furnished with each adapter for installation on the back plate of the gun. The

trigger mechanism on the adapter operates this bell crank, which actuates the trigger bar in the gun. When installed in a power operated turret the gun is usually fired by means of an electric trigger control.

Mounting of the slide group assembly may be made on either side of the gun.

DIMENSIONS: approx. 39.8 x 5.5 x 5.3 inches.

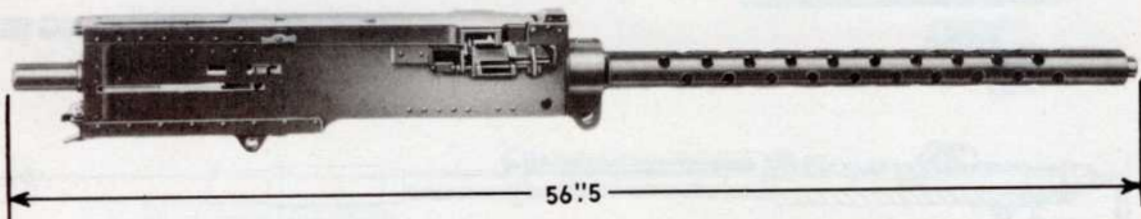
WEIGHT: approx. 21.8 pounds.

PUBLICATIONS: O.P. 714, 558, 398, 215, O.C.L. V-34, S.N.L. A-28, and TM 9-205; 9-1205.

AAF DWG: H39G5331.

ARMY ORD DWG: 51-122-1.

GUN, BAM-50, M2, BASIC



GUN, BAM-50, M2, BASIC

STOCK No. 1-G-5636

THE BAM-50, M2, Gun is a belt-fed, recoil-operated, air-cooled machine gun similar in operation to the BAM-30 guns. Since this is a basic gun, only parts which are common to all installations are included. No charging mechanism, external trigger, or hand grips are provided, but it is equipped with a fixed back plate, an internal trigger bar and trigger bar pin assembly.

In flexible gun installations, a retracting slide group is used for charging, and the hand grips and trigger mechanism are provided as a part of the gun mount adapter.

In turret installations, the retracting slide group, or an electric or hydraulic gun charger, is used for charging, and the gun is fired with an electric trigger control. Most turret installations are also provided with standby mechanical triggers for use when the electric circuit fails.

In synchronized gun installations, the gun is fired by a trigger motor. For charging the

gun, the operating slide, charging handle, or one of the hydraulic type gun chargers is used.

In remote fixed positions, the gun is fired by an electric trigger control and may be charged with a retracting slide and charging handle combination, or with one of the hydraulic-type or electric-type chargers.

The trigger motor unit, or electric trigger control, may be installed on either side of the gun. The charger mechanism is installed on the opposite side.

DIMENSIONS: approx. 56.5 x 5.9 x 3.9 inches.

WEIGHT: approx. 60.8 pounds.

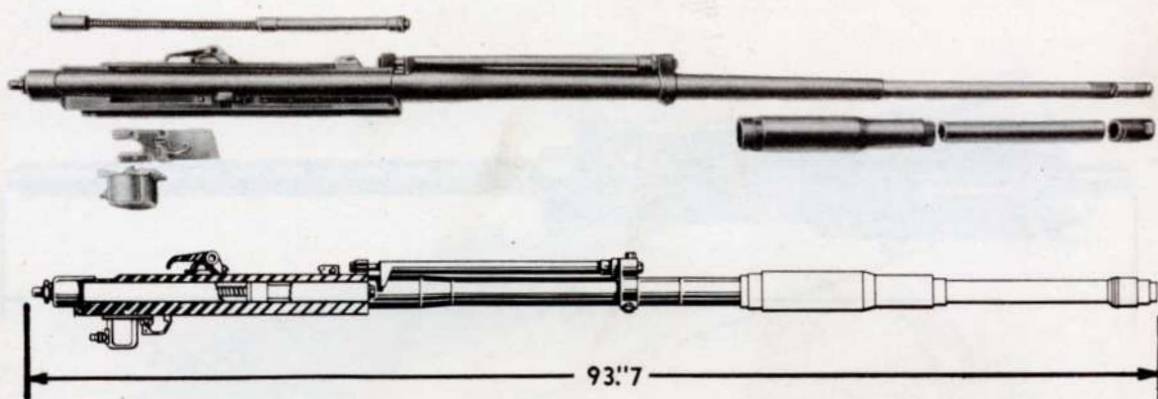
PUBLICATIONS: O.P. 255, 548, 716, O.C.L. V-34, SNL A-36; A-38, TM 9-225; 9-1225, and O.T.I. GV35-43.

AAF DWG: H39G5332.

ARMY ORD DWG: 51-82-1.

BuORD DWG: Gen. Arr. 297034.

GUN, 20 MM, AG, AN-M2, TYPE E



GUN, 20 MM, AG, AN-M2, TYPE E

STOCK No. 1-G-5599

THE 20 MM Aircraft Automatic Gun is an air-cooled weapon, the mechanism of which is operated by a combination of gas pressure and recoil. The gun may be mounted as a fixed installation to fire through the propeller hub, or it may be placed in the fuselage or wing to fire outside the disc of propeller rotation. The 20 mm gun does not lend itself to a synchronized installation.

The forward part of the gun is mounted to the airplane by a Recoil Adapter Type AN-M1 which attaches to a front mounting bearing assembly in the airplane. Integral L-shaped flanges along the lower edge of the gun receiver engage a suitable bearing on the airplane to support the after end of the gun. When used in a flexible installation, the gun must be supported in a flexible or turret-type mount.

The gun currently used by the Navy, and designated as the AN-M2 Type E, consists of a one-piece barrel screwed into a receiver at

its breech end. It is furnished complete with a Recoil Adapter Type AN-M1, and Electric Trigger Type AN-M1, and a 20 MM Hydraulic Gun Charger (Stock No. 1-C-3412-50). The Feed Mechanism Type M1A1, used with the gun, is carried in stock as a separate item and is not included as a part of the Type E Gun. Ammunition is fed from either a magazine or a continuous feed belt. In most cases, firing is accomplished by the electric trigger, but provisions may be made to permit remote firing with a manually-operated control cable.

DIMENSIONS: approx. 93.7 x 9.2 x 8.4 inches.

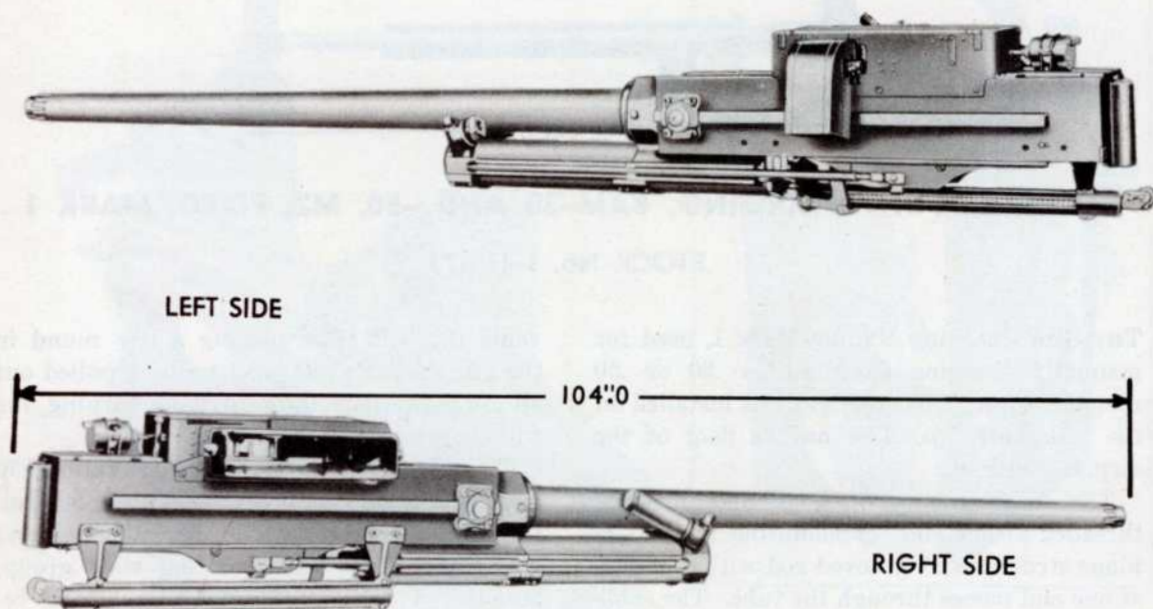
WEIGHT: approx. 102 pounds.

PUBLICATIONS: TM 9-227, 9-1227, SNL A-47, Oldsmobile Training Manual on the 20 MM Automatic Gun.

AAF DWG: H41J9229.

BuORD DWG: Gen. Arr. 296509.

GUN, AIRCRAFT, AUTOMATIC, 37 MM, TYPE M-9



GUN, AIRCRAFT, AUTOMATIC, 37 MM, TYPE M-9

STOCK No. 1-G-5600

THE 37 MM Automatic Gun Type M-9 is a high-velocity aircraft weapon of the long recoil type. The feed and ejector mechanism are operated by movement of the recoiling portion of the gun. Recoil and counter-recoil are hydraulically-controlled by a piston connected to the recoiling parts and a cylinder mounted on the stationary trunnion block assembly.

The gun will fire in any position since all parts operate independently of gravity. It is used in fixed installations only and is not designed for synchronized fire through the airplane propeller blades. In fixed installations, the gun may be mounted to fire through the propeller shaft, or to fire outside the disc of propeller rotation. It is mounted to the airplane by 2 trunnion brackets attached to the longitudinal ribs of the gun. Additional brackets are furnished by the airplane manufacturer to support the front or rear of the gun, depending upon the installation.

In most cases, gun firing is accomplished by an electric trigger, but provisions may be made to permit remote firing with a manually operated control cable. The gun is equipped to use belt-fed ammunition, and is built with either a right hand or left hand feed box. The cartridge links are ejected through an opening in the side of the feed box opposite the side from which ammunition is fed. The empty cases are ejected through a longitudinal opening between the bottom of the trunnion block side plates of the gun.

DIMENSIONS: approx. 104.0 x 14.0 x 14.7 inches.

WEIGHT (without magazine): approx. 398 pounds.

PUBLICATION: TM 9-241.

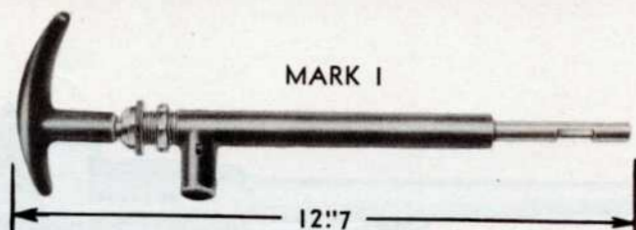
ARMY ORD DWGS:

List of Dwgs. 51-126-1.

Assembly Dwg. D69417.

BuORD DWGS: SK. 374040, Assembly 374282.

HANDLE, GUN CHARGING, BAM-30 AND -50 FIXED, MARK 1 AND MOD.



HANDLE, GUN CHARGING, BAM-30 AND -50, M2, FIXED, MARK 1

STOCK No. 1-H-473

THE Gun Charging Handle Mark 1, used for manually charging fixed caliber .30 or .50 remotely-located machine guns, is installed on the instrument panel or on the floor of the airplane cockpit.

The unit consists of a tubular member threaded at one end for mounting to the airplane structure. A grooved rod with a handle at one end passes through the tube. The cable leading to the charging device on the gun is fastened to the other end of the rod. The rod is notched so that the handle may be turned, locking the charging device in the safety position. Pulling the handle all the way out, and locking it in the full recoil position, pre-

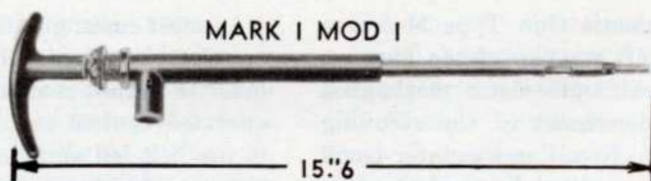
vents the bolt from placing a live round in the gun chamber. If the handle is pulled out all the way, and released without turning, the full charging cycle will be completed.

This handle can be used with the caliber .30 operating slide group or the caliber .50 Gun Charging Control Mark 1. It cannot be used with the caliber .50 retracting slide group, because of the longer charging stroke required.

DIMENSIONS: approx. 12.7 x 3.6 x 0.7 inches.

WEIGHT: approx. 0.6 pound.

BuORD DWGS: SK. 57926, Gen. Arr. 178489.



HANDLE, GUN CHARGING, BAM-30 AND -50, M2, FIXED, MARK 1, MOD. 1

STOCK No. 1-H-475

THE Gun Charging Handle Mark 1, Mod. 1 is basically the same as the Mark 1, except that the charging rod is 3 inches longer. This provides for charging a remotely placed, caliber .50 fixed gun when the retracting slide group is used. An intermediate locking notch is also provided so that this handle may be used with the caliber .30 operating slide group, or the caliber .50 Gun Charging Control Mark 1. These items necessitate an interme-

mediate locking position because of the shorter stroke required for their operation.

This handle is identical to the Gun Charging Handle Type A-2.

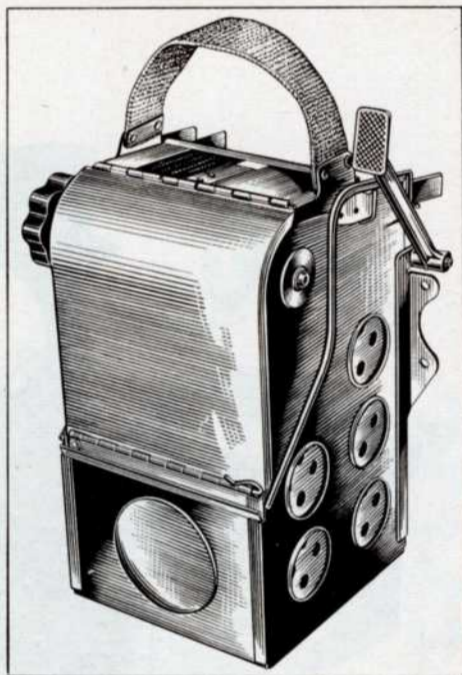
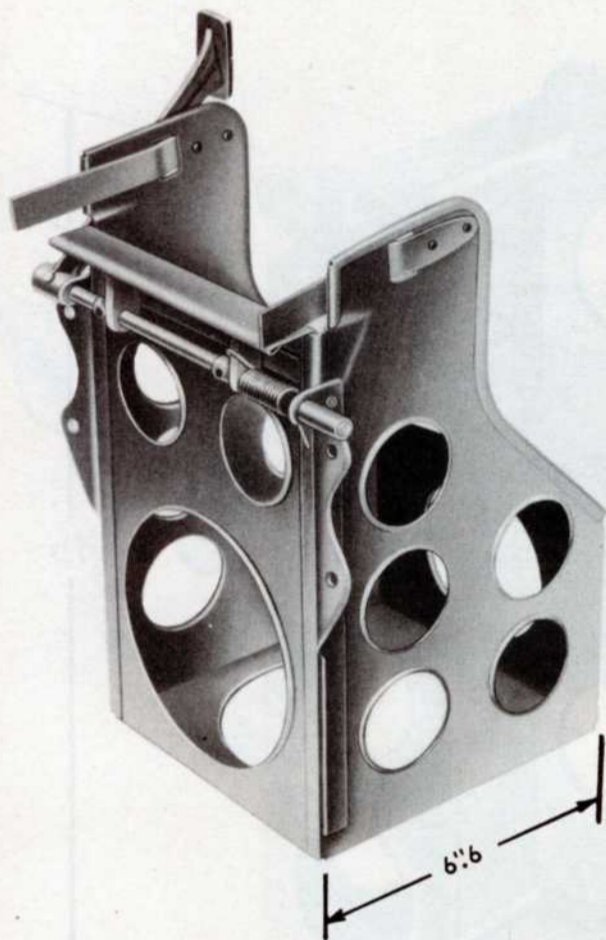
DIMENSIONS: approx. 15.6 x 3.6 x 0.7 inches.

WEIGHT: approx. 0.7 pound.

AAF DWG: 31B1184.

BuORD DWGS: SK. 57926, Gen. Arr. 178489.

HOLDER, MAGAZINE, FOR MAGAZINE MARK 5



HOLDER, MAGAZINE, FOR MAGAZINE MARK 5

STOCK No. 1-H-1951

THIS Magazine Holder, which attaches to Gun Mount Adapters Mark 6, Mod. 3 and Mark 10, is a perforated sheet metal retainer. It is used to hold the Magazine Mark 5 in position for belt-feeding ammunition into the gun. In the rear of the holder is a double catch,

operated by a lever, for locking the magazine in position.

DIMENSIONS: approx. 11.1 x 6.6 x 7.8 inches.

WEIGHT: approx. 2.2 pounds.

BuORD DWG: Gen. Arr. 298640.

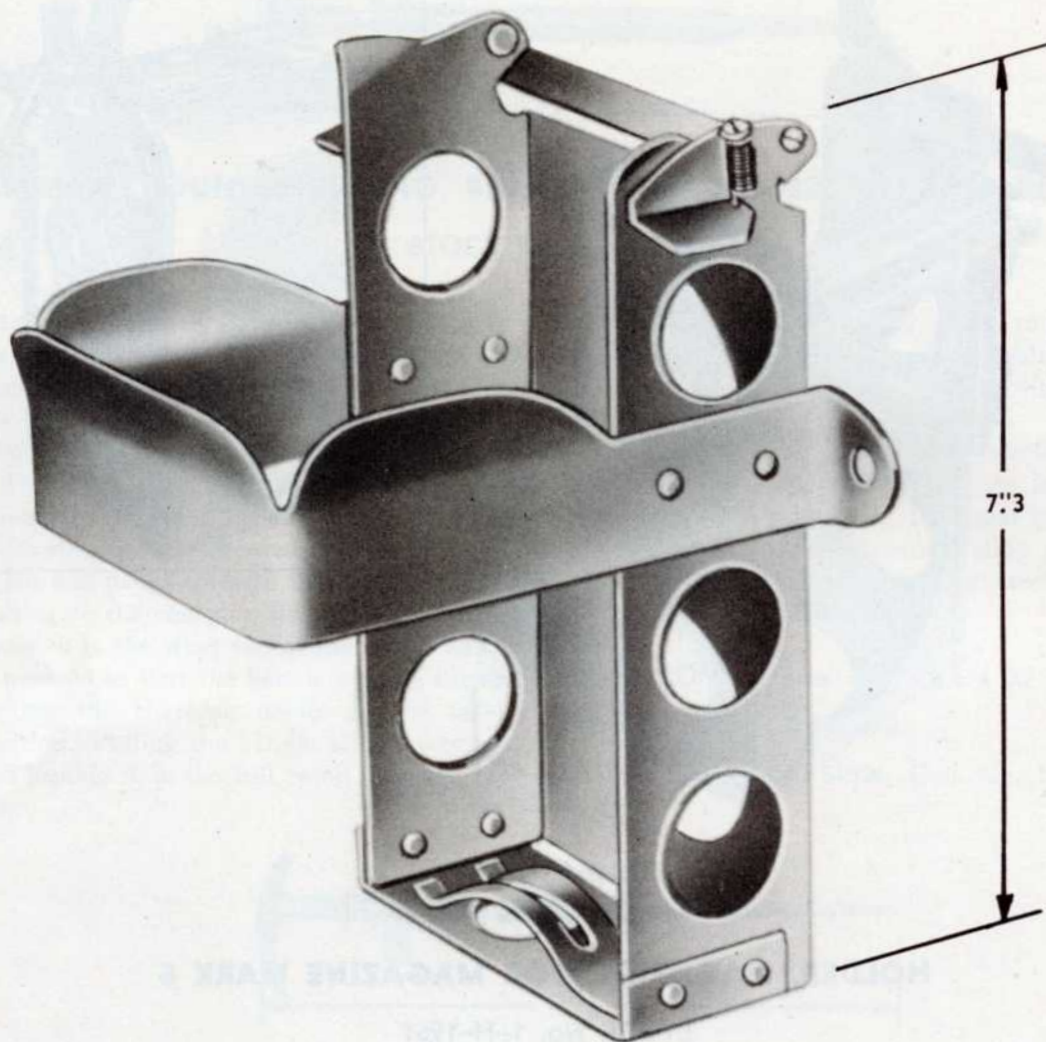
HOLDER, MAGAZINE, FOR MAGAZINE MARK 5

STOCK No. 1-H-1952

THIS Magazine Holder is identical to the holder with Stock No. 1-H-1951, except that it is

not equipped with a magazine catch.

HOLDER, AMMUNITION BOX, TYPE A-1



HOLDER, AMMUNITION BOX, TYPE A-1

STOCK No. 1-H-2059

THE Ammunition Box Holder Type A-1 attaches to caliber .30 gun mount adapters to hold the Magazines Type L-4 and Type L-7. The holder is a perforated metal retainer with a horizontal metal strip that extends around and secures the magazine when it is inserted in the holder. The holder is constructed so

that empty ammunition boxes may readily be removed and replaced with full boxes.

DIMENSIONS: approx. 7.3 x 5.5 x 5.0 inches.

WEIGHT: approx. 1.1 pounds.

AAF DWG: 40G7402.

LATCH, ADAPTER, GUN MOUNT, BAM-30 AND -50, M2



LATCH, ADAPTER, GUN MOUNT, BAM-30 AND -50, M2

STOCK No. 1-L-150

THE Gun Mount Adapter Latch secures flexible gun mount adapters to the mounting, or yoke post socket in the airplane. When the yoke post has been inserted into the yoke post socket, it is anchored by the latch which fits in an annular groove in the exposed lower end of the yoke post. The latch is held in this position by a spring plunger which fits into a hole in the bottom end of the yoke post. A chain fastened to the latch permits it to be secured to the gun mount. This latch is used to secure Gun Mount Adapters Mark 6, Mark

9, Mark 10, Mark 11, Mark 12, Mark 14, and their Mods. It can also be used on the Gun Mount Adapter Mark 3 if the yoke post is modified by substituting the yoke post plug as shown in BuORD SK. 8396C.

DIMENSIONS:

Latch, approx. 1.0 x 1.0 x 1.3 inches.

Length of Chain, approx. 10.0 inches.

WEIGHT (with chain): approx. 0.1 pound.

BuORD DWGS: SK. 84005, Gen. Arr. 227626.

MACHINE, GREASE DIP, 20 MM, TYPE 20 MM JR. CIRCO



MACHINE, GREASE DIP, 20 MM, TYPE 20 MM JR. CIRCO

STOCK No. 1-M-35

THIS Grease Dip Machine is used in the application of a petroleum preservative such as "Cosmoline" for storage of guns and other ordnance equipment. The unit consists of an all-welded steel tank supported by an angle leg frame with casters. Attached to one side, along the top edge of the tank, is a removable drain pan upon which the work is allowed to dry after dipping. The tank is equipped with three 2000-watt, 230-volt, 60-cycle, 3-phase, AC electric immersion heating elements, controlled by a calibrated temperature adjusting

dial thermostat with a range of 60 degrees Fahrenheit to 250 degrees Fahrenheit. A 25-foot electric cord with a plug and receptacle is also provided.

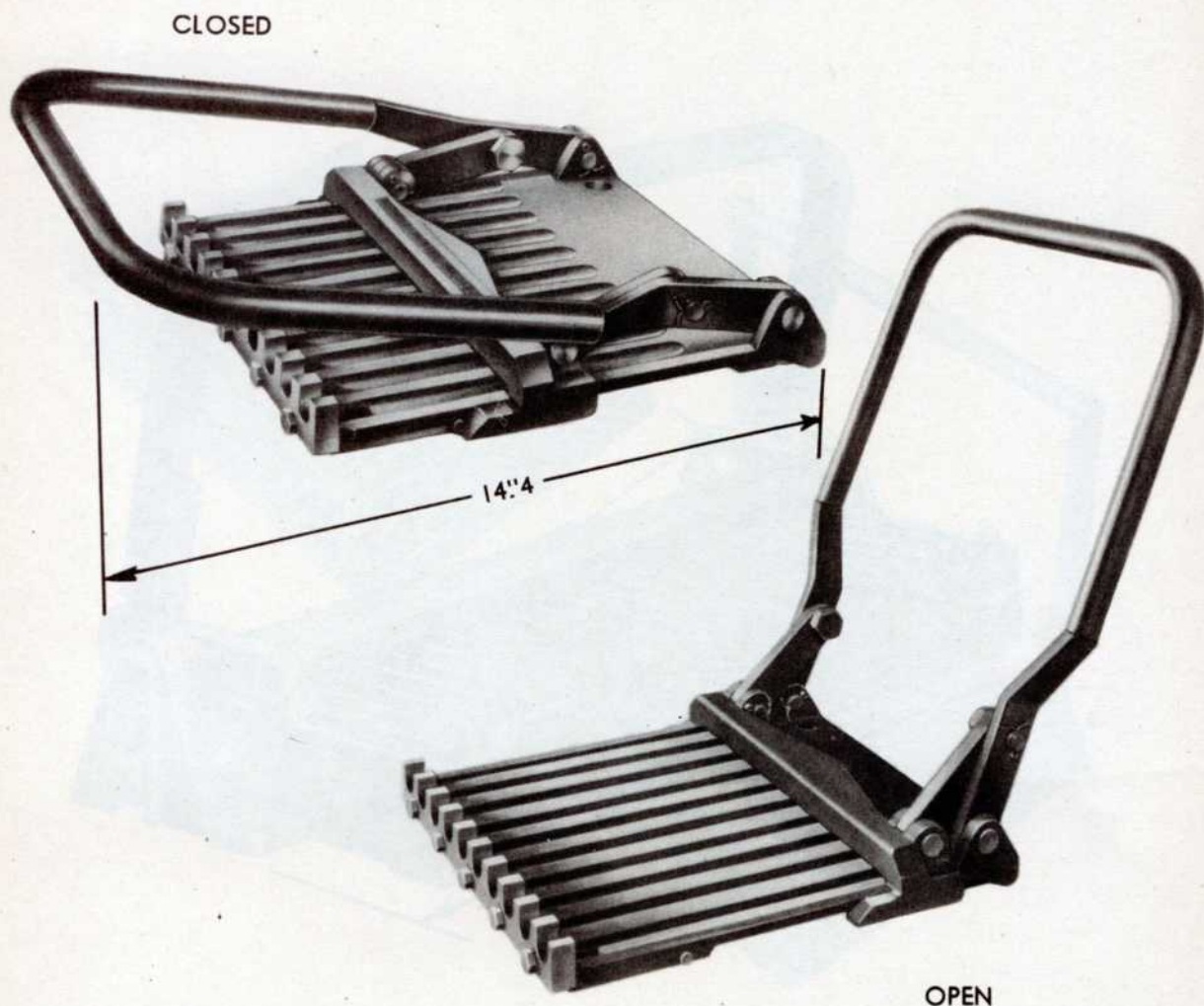
The tank is emptied by means of a drain cock.

DIMENSIONS: approx. 103.0 x 21.0 x 30.5 inches.

WEIGHT (shipping): approx. 575 pounds.

PUBLICATION: Circo Products Co. Grease Dip, Model 20 MM Jr.

MACHINE, LINK LOADING, TYPE M-2



MACHINE, LINK LOADING, TYPE M-2

STOCK No. 1-M-71

THE Link Loading Machine Type M-2 is a hand-operated device for belting caliber .50 ammunition. It has a metal base with grooves in its upper side and a horizontal bar that slides across the grooves. The bar is operated by a handle. Links and cartridges are placed in the grooves, and the handle pushed forward to the stop. This moves the bar, inserting the cartridges into the links, and forming a section of the ammunition belt. The machine belts 10 rounds of ammunition at a time.

Screw holes in the base enable the machine to be fastened to a support. This machine is furnished as a part of the caliber .50 BAM gun tool and accessory set.

DIMENSIONS: approx. 14.4 x 12.5 x 4.5 inches.

WEIGHT: approx. 17.8 pounds.

PUBLICATION: SNL A-36.

ARMY ORD DWG: D8794.

BuORD DWG: Gen. Arr. 214281.

MACHINE, LINK LOADING, TYPE M-3



MACHINE, LINK LOADING, TYPE M-3

STOCK No. 1-M-62

THE Link Loading Machine Type M-3 belts caliber .30 ammunition. It consists of a metal base with grooves on its upper side, a horizontal bar that is free to move across the grooves, and a handle that operates the bar. Links and cartridges are placed in the grooves and the handle pushed forward to the stop. This moves the bar, inserting the cartridges into the links, and forming a section of the ammunition belt. The capacity of this machine is 20 rounds of ammunition at a time. Screw holes are provided in the base so that

the machine may be fastened to a suitable support.

This machine is furnished as a part of the Tool and Accessory set for the caliber .30 BAM gun.

DIMENSIONS: approx. 13.3 x 6.0 x 2.8 inches.

WEIGHT: approx. 10.4 pounds.

PUBLICATION: S.N.L. A-28.

ARMY ORD DWG: D-35341.

BuORD DWG: Gen. Arr. 307904.

MACHINE, LINK LOADING, TYPE M-4



MACHINE, LINK LOADING, TYPE M-4

STOCK No. 1-M-50

THIS is a hand-operated Link Loading Machine used to belt 20 mm ammunition. It consists of a metal base with grooves on its upper side, a horizontal bar that slides across the grooves, and a handle that operates the bar. Links and cartridges are properly placed in the grooves, and the handle is pulled forward to the stop. This moves the bar, inserting the cartridges into the links, and forming a sec-

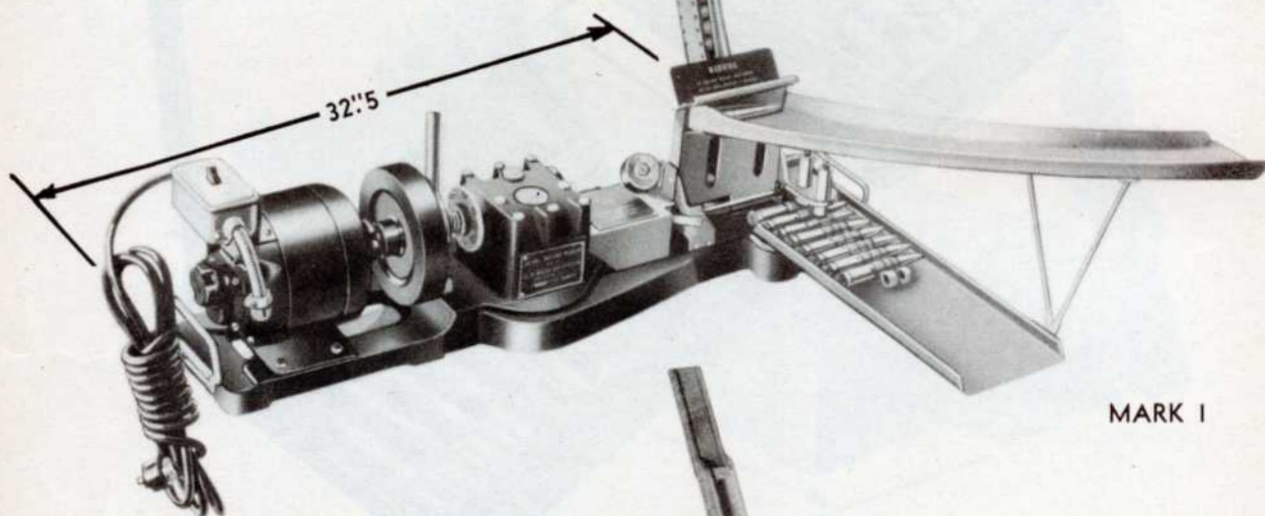
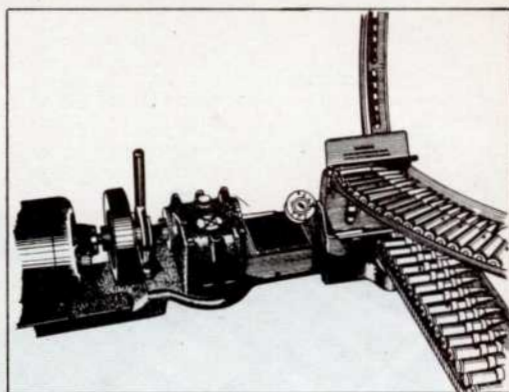
tion of the ammunition belt. This machine, which belts 10 rounds of ammunition at a time, is furnished as a part of the Tool and Accessory set for the 20 mm AN-M2 gun.

DIMENSIONS: approx. 16.0 x 12.9 x 2.3 inches.

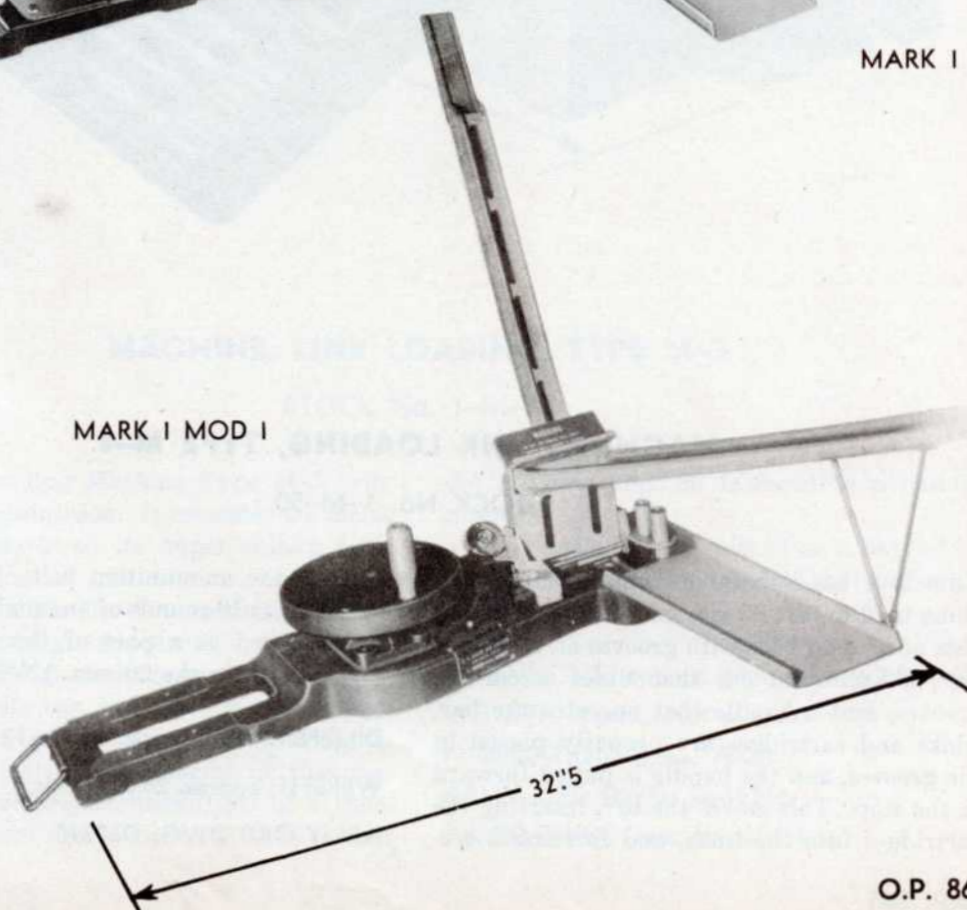
WEIGHT: approx. 24.0 pounds.

ARMY ORD DWG: D69370.

MACHINE, LINK LOADING, MARK 1 AND MOD.



MARK I MOD I



MACHINE, LINK LOADING, MARK 1 AND MOD.

MACHINE, LINK LOADING, MARK 1

STOCK Nos. LISTED BELOW

THE power-operated Link Loading Machine Mark 1 belts caliber .50 ammunition. The complete machine consists of a $\frac{1}{4}$ -horsepower electric motor, an ammunition belting mechanism, and a vertical chute for the links to enter the machine. A tray feeds the cartridges into the machine and a lower horizontal tray receives the belted ammunition. This machine has a capacity of 4000 to 5000 rounds per hour and is equipped with a dial counter to record the number of rounds belted. A friction clutch breaks the belt at any desired length.

An Auxiliary Hand Crank (Stock No. 1-C-7391) to be used in case of power failure, is supplied with each machine.

This machine is supplied under 4 stock numbers as follows:

With Auxiliary Hand Crank only (no

motor)—Stock No. 1-M-72-5.

With Auxiliary Hand Crank and 25-cycle, 110-volt AC Motor—Stock No. 1-M-72-6.

With Auxiliary Hand Crank and 60-cycle, 110-volt AC Motor—Stock No. 1-M-72-7.

With Auxiliary Hand Crank and 110-volt DC Motor—Stock No. 1-M-72-8.

The Mark 1 is being replaced by the Link Loading Machine with Flywheel Drive, Mark 1, Mod. 1.

DIMENSIONS: approx. 32.5 x 36.0 x 42.5 inches.

WEIGHT: approx. 125 pounds.

PUBLICATION: Maintenance Manual—NAS San Diego.

BuORD DWG: 309151.

MACHINE, LINK LOADING, FLY WHEEL DRIVE, MARK 1, MOD. 1

STOCK No. 1-M-70-200

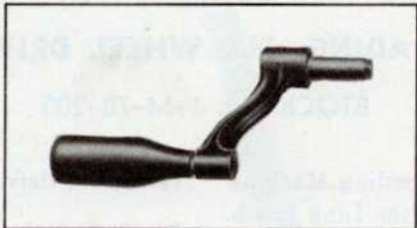
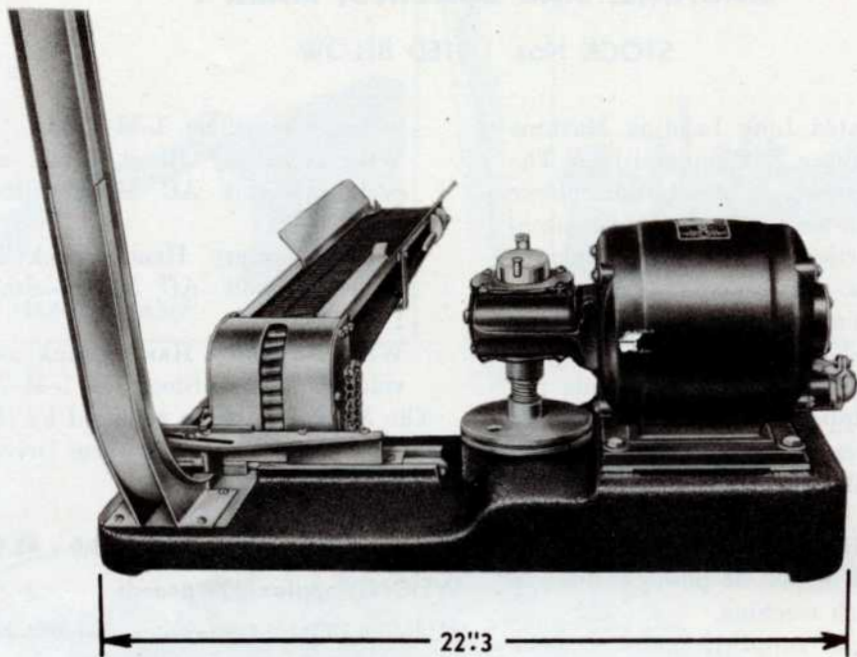
The Flywheel Drive Link Loading Machine Mark 1, Mod. 1 is the same as the Link Loading Machine Mark 1, except that a hand-operated inertia-type fly-wheel crank replaces

the power drive.

DIMENSIONS: approx. 32.5 x 36.0 x 42.5 inches.

WEIGHT: approx. 75 pounds.

MACHINE, LINK LOADING, MARK 3 AND MOD.



MACHINE, LINK LOADING, MARK 3 AND MOD.

MACHINE, LINK LOADING, MARK 3

STOCK Nos. LISTED BELOW

THE power-driven Link Loading Machine Mark 3, belts caliber .30 machine gun ammunition. The complete machine consists of a $\frac{1}{8}$ -horsepower electric motor, a mechanism that belts the ammunition, a vertical chute for loading the links into the machine, a continuous belt for loading the cartridges into the machine, and a horizontal tray on which the belted ammunition leaves the machine. The unit has a capacity of 4000 to 5000 rounds per hour and is equipped with a dial counter to record the number of rounds belted. A friction clutch is provided for breaking the belt at any desired length.

An Auxiliary Hand Crank (Stock No. 1-C-7389) has been developed to be used in case of power failure. One is supplied with each machine.

This machine is supplied under 4 stock numbers as follows:

With Hand Crank only (no motor)—
Stock No. 1-M-66.

With Hand Crank and 25-cycle, 110-volt AC Motor—Stock No. 1-M-66-10.

With Hand Crank and 60-cycle, 110-volt AC Motor—Stock No. 1-M-66-20.

With Hand Crank and 110-volt DC Motor—Stock No. 1-M-66-30.

DIMENSIONS (less link chute): approx. 34.0 x 22.3 x 9.0 inches.

WEIGHT: approx. 87.0 pounds.

PUBLICATION: Maintenance Manual—NAS San Diego.

BuORD DWG: Gen. Arr. 342350.

MACHINE, LINK LOADING, MARK 3, MOD. 1

STOCK No. 1-M-58

THE Link Loading Machine Mark 3, Mod. 1 is similar to the Mark 3, but is designed for operation by a hand crank only. No pro-

visions are made for installation of a power drive.

MACHINE, LINK LOADING, MARK 5



MACHINE, LINK LOADING, MARK 5

STOCK No. 1-M-55

THE hand-operated Link Loading Machine Mark 5 is used to belt 20 mm ammunition. A metal frame encloses an idler sprocket at one end, and a crank-operated drive sprocket and pusher wheel at the other end. A grooved flexible metal belt revolves around both sprockets. A vertical chute feeds links into the machine. The links are fed into the chute and the cartridges are placed by hand into the grooves of the belt. As the cartridges and links make $\frac{1}{2}$ -revolution on the drive

sprocket, the cartridges are forced into the links by action of the angular rotation of the pusher wheel, thus forming the ammunition belt which leaves the machine at the opposite end. The capacity of the machine is 75 to 100 rounds per minute.

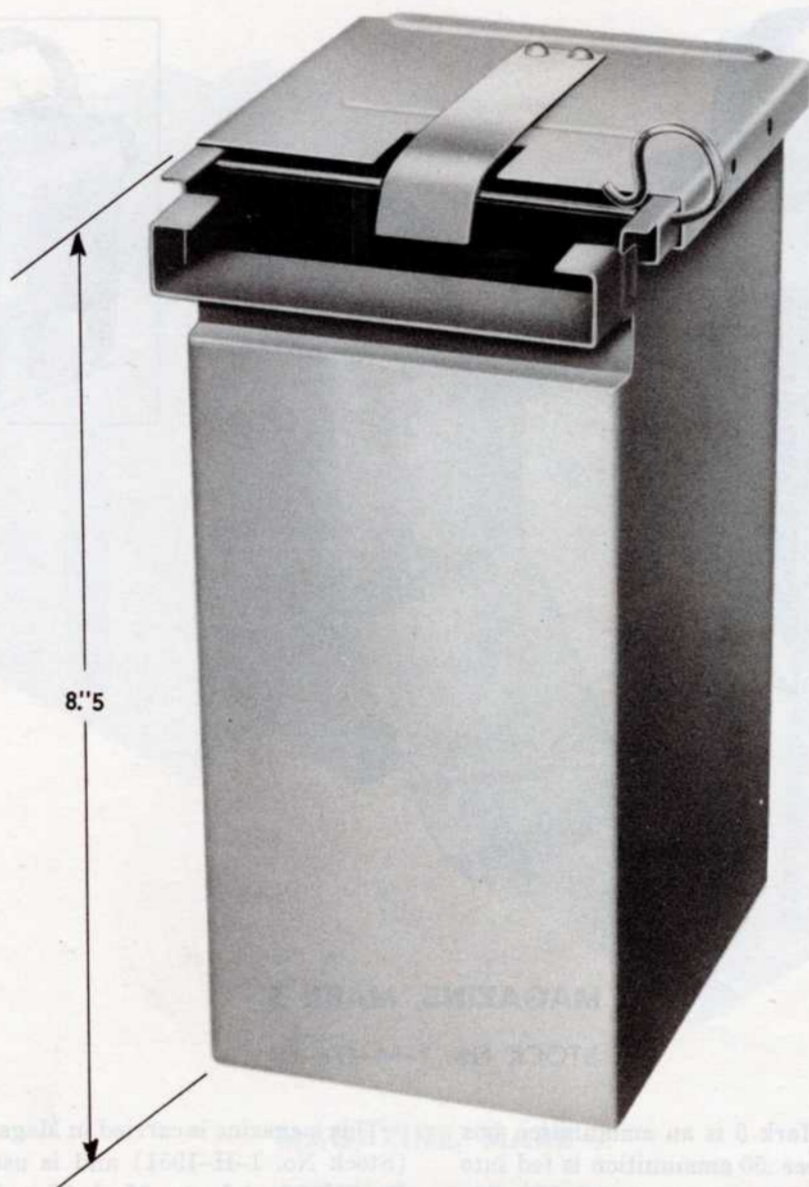
DIMENSIONS: approx. 31.5 x 14.0 x 17.0 inches.

WEIGHT: approx. 60.0 pounds.

PUBLICATION: O.P. 974.

BuORD DWG: Gen. Arr. 389020.

MAGAZINE, TYPE L-4



MAGAZINE, TYPE L-4

STOCK No. 1-M-176-30

THE Magazine Type L-4 is an ammunition box from which belted caliber .30 ammunition is fed into the machine gun. It consists of a rectangular sheet metal box with a sliding cover. A flat spring is provided on the cover to prevent the belt from slipping back into the magazine.

A Magazine Holder Type A-1 is required

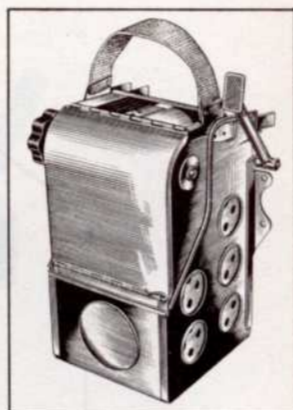
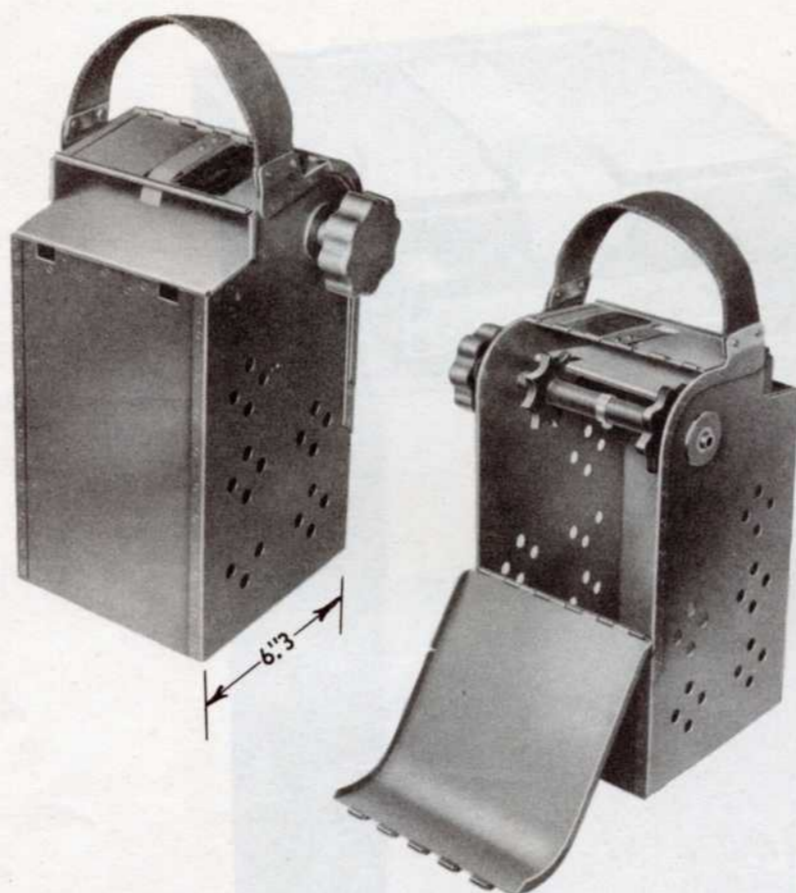
for mounting this magazine. It is interchangeable with the Magazines Type L-7, Mark 1, and Mark 7.

DIMENSIONS: approx. 8.5 x 4.5 x 5.0 inches.

WEIGHT: approx. 1.5 pounds.

ARMY ORD DWG: 30-616.

BuORD DWG: 155316.



MAGAZINE, MARK 5

STOCK No. 1-M-176-50

THE Magazine Mark 5 is an ammunition box from which caliber .50 ammunition is fed into the machine gun. It consists of a rectangular sheet metal box with a webbing handle, 2 sprockets mounted upon a shaft which extends across the inside top of the box and is turned by an external knob, and a hinged side door. A flat spring is provided at the top to prevent the belt from slipping back into the magazine when the cover of the gun is raised. The sprockets serve as a guide for the ammunition belt. In addition the shaft and sprockets provide a means for forcing the ammunition belt out of the magazine when initially loading the gun.

This magazine is carried in Magazine Holder (Stock No. 1-H-1951) and is used with the Gun Mount Adapter Mark 10 and Mods. and Mark 6 and Mods. It has a nominal capacity of 60 rounds.

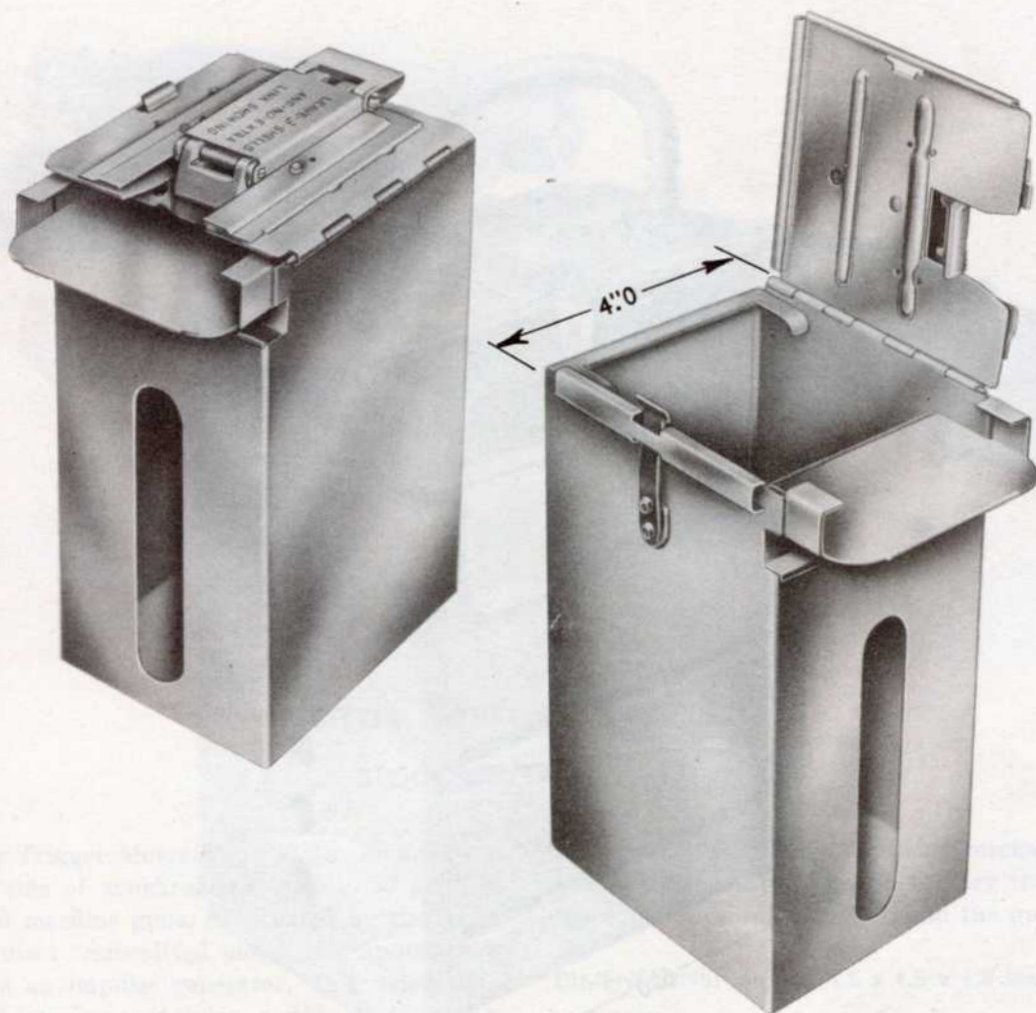
By reversing the sprocket shaft and knob, the magazine can be changed for use on either a right or left hand installation.

DIMENSIONS: approx. 13.5 x 6.3 x 6.4 inches.

WEIGHT: approx. 4.1 pounds.

BuORD DWGS: SK. 90713, Gen. Arr. 298638.

MAGAZINE, MARK 7



MAGAZINE, MARK 7

STOCK No. 1-M-176-20

THE Magazine Mark 7 is an ammunition box from which caliber .30 ammunition is fed into the machine gun. It consists of a rectangular sheet metal box with a hinged cover. A slide mechanism is provided in the cover to facilitate loading the end of the belt into the gun. A pawl on the slide prevents the end of the ammunition belt from dropping back into the magazine when the cover of the gun is raised. The magazine has a capacity of 100 rounds and is used on Gun Mount Adapters Mark 11

and Mods. and Mark 12.

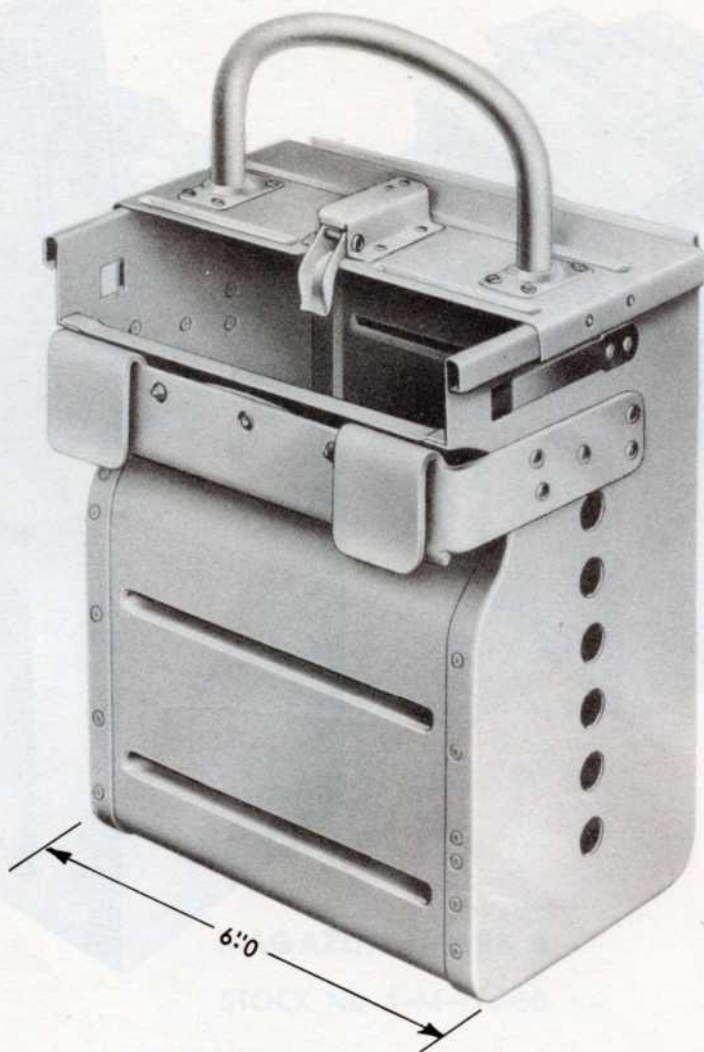
The Magazine Mark 7 replaces, and is an improvement on, the Mark 1. They are interchangeable, except in the tunnel gun installation of the TBF airplane where the Mark 7 cannot be used.

DIMENSIONS: approx. 8.1 x 5.7 x 4.0 inches.

WEIGHT: approx. 1.7 pounds.

BuORD DWG: Gen. Arr. 294272.

BOX ASSEMBLY, AMMUNITION, TYPE O-1



BOX ASSEMBLY, AMMUNITION, TYPE O-1

STOCK No. 1-B-5168

THE Ammunition Box Assembly Type O-1 is a rectangular metal container from which caliber .50 ammunition is belt-fed into the machine gun. The box has a removable sliding cover and a tubular handle. A flat spring on one side of the box assists the belt holding pawl in preventing the ammunition belt from slipping back into the box. It has a capacity of 30 rounds of caliber .50 ammunition. When

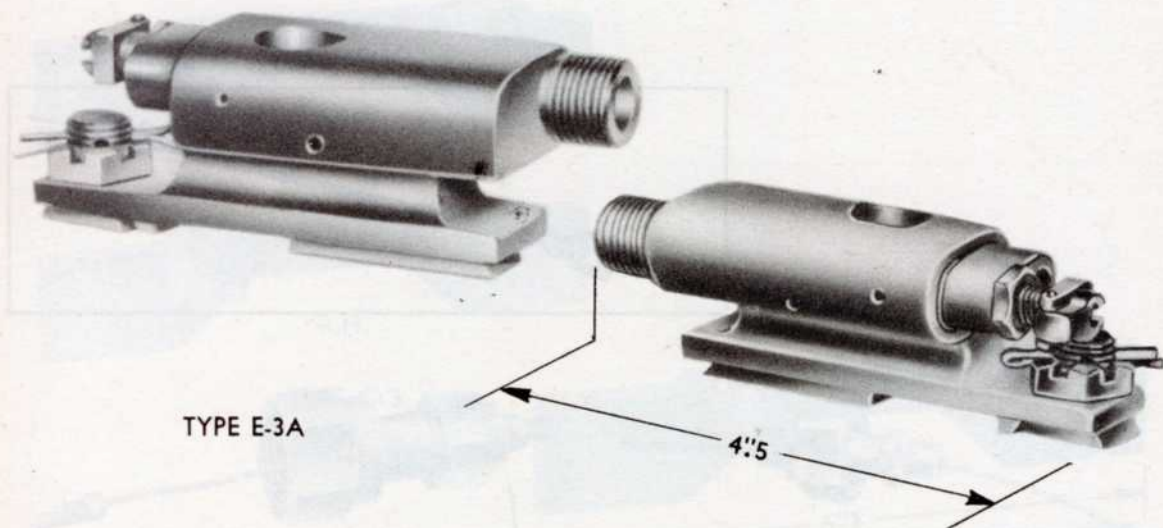
used on a Gun Mount Adapter Type E-8, it requires Ammunition Box Mount Type C-3; on Gun Mount Adapter Type E-11, it requires Ammunition Box Mount Type C-2.

DIMENSIONS: approx. 10.0 x 6.0 x 4.6 inches.

WEIGHT: approx. 2.5 pounds.

AAF DWG: 35D3891.

MOTOR, TRIGGER, TYPE E-3A AND MARK 1, MOD. 1



TYPE E-3A

MOTOR, TRIGGER, TYPE E-3A

STOCK No. 1-M-621-200

THE Trigger Motor Type E-3A, mounted on the side of synchronized caliber .30 and .50 fixed machine guns, is actuated by the timed impulses transmitted along an impulse wire from an impulse generator. It consists of a steel housing containing a slide, slide spring, plunger, plunger spring, and an adjusting screw. The slide is beveled, and rides on a cam in the plunger. As the plunger is pulled forward, the slide is forced outward and into

the gun, thus tripping the firing mechanism. The adjusting screw is used to vary the distance the slide may project into the gun.

DIMENSIONS: approx. 4.5 x 1.5 x 1.8 inches.

WEIGHT: approx. 0.9 pound.

PUBLICATIONS: AAF Tech. Order 11-20-11, 11-20-15.

AAF DWG: 42B3980.

MOTOR, TRIGGER, MARK 1, MOD. 1

STOCK No. 1-M-621

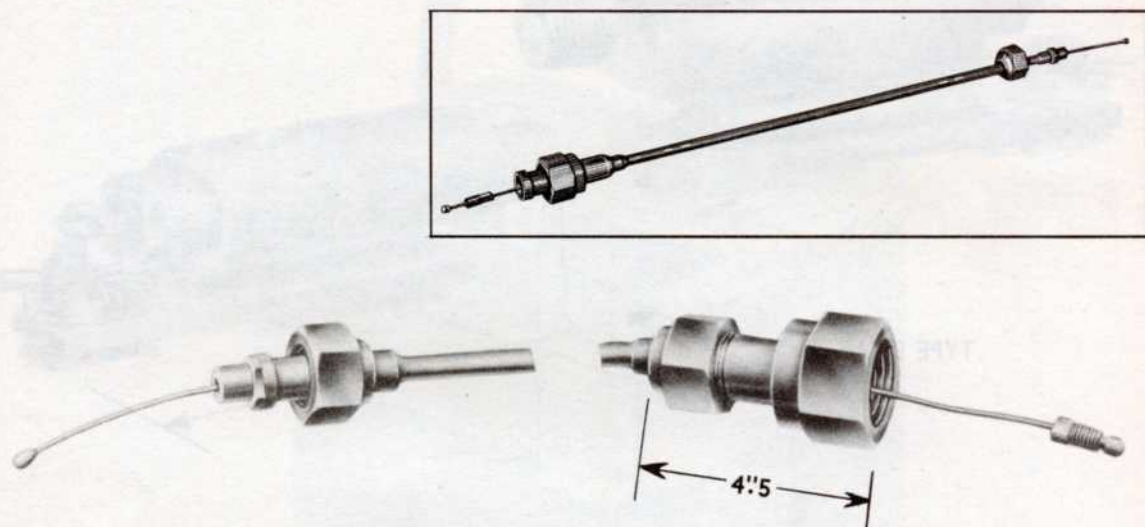
THE Trigger Motor Mark 1, Mod. 1 is similar to the Type E-3A, except that it uses a plain square tip on the slide in place of the beveled tip used in the E-3A. Although the same slide protrusion is obtainable in both units, some internal dimensions differ and the parts are not interchangeable. A new trigger motor,

very similar to the Mark 1, Mod. 1 and designated as the AN-E-3B, will shortly be used by both the Army and the Navy. This will also have the square-tipped slide.

PUBLICATIONS: O.P. 552, O.C.L. V-7-43.

BuORD DWG: Gen. Arr. 227622.

CABLE, IMPULSE, MARK 1



CABLE, IMPULSE, BAM-30 AND -50, M2, MARK 1

STOCK No. 1-C-60

THE Impulse Cable Mark 1 is used on all airplanes having synchronized gun installations to transmit the impulses from the impulse generator to the trigger motor unit. The cable consists of a 7-foot steel tube with a 0.3-inch outside diameter, 7 feet of a single strand fine steel wire 0.1 inch in diameter, and end couplings for both the tube and the wire. The parts are shipped unassembled because the length of the tubing and wire used will depend upon the distance between the impulse generator on the aircraft engine and the trigger motor on the gun. This distance will vary with different installations.

When installed, the wire is carried inside the tubing, has a metal bead silver-soldered to each end and has a small threaded sleeve on the generator end just behind the metal bead. This sleeve screws into the cam follower

in the impulse generator. The tubing has a threaded coupling for attachment to the impulse generator at one end, and a similar arrangement for the trigger motor at the other end.

This device was formerly procured from the Army as Impulse Unit Ends Assembly Type E-3. Its stock number as the Type E-3 is 1-E-545.

DIMENSIONS:

End for impulse generator, approx. 4.5 x 1.3 x 1.3 inches.

End for trigger motor, approx. 1.1 x 1.1 x 1.1 inches.

WEIGHT: approx. 1.1 pounds.

PUBLICATION: AAF Tech. Order 11-20-13.

BuORD DWG: Gen. Arr. 163658.

MOUNT ASSEMBLY, AMMUNITION BOX, TYPE C-2 AND C-3

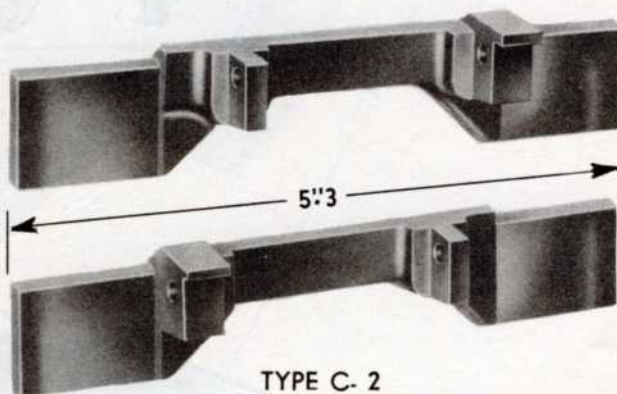


L.H.



R.H.

TYPE C-3



TYPE C-2

MOUNT ASSEMBLY, AMMUNITION BOX, TYPE C-2

STOCK Nos. 1-M-818-200 (L.H.), 1-M-818-210 (R.H.)

THE Ammunition Box Mount Assembly Type C-2 secures an Ammunition Box Type 0-1, or box of similar design, to either side of a caliber .50 machine gun. The mount is a machined metal plate with a pair of lugs, and is attached to the gun by the belt-holding pawl pin. Brackets on the ammunition box hook

over the plate, and spring-loaded plungers on the box prevent it from becoming dislodged by vibration.

DIMENSIONS: approx. 5.3 x 1.0 x 1.0 inches.

WEIGHT: approx. 0.4 pound.

AAF DWG: 37B2675.

MOUNT ASSEMBLY, AMMUNITION BOX, TYPE C-3

STOCK Nos. 1-M-818-230 (L.H.), 1-M-818-240 (R.H.)

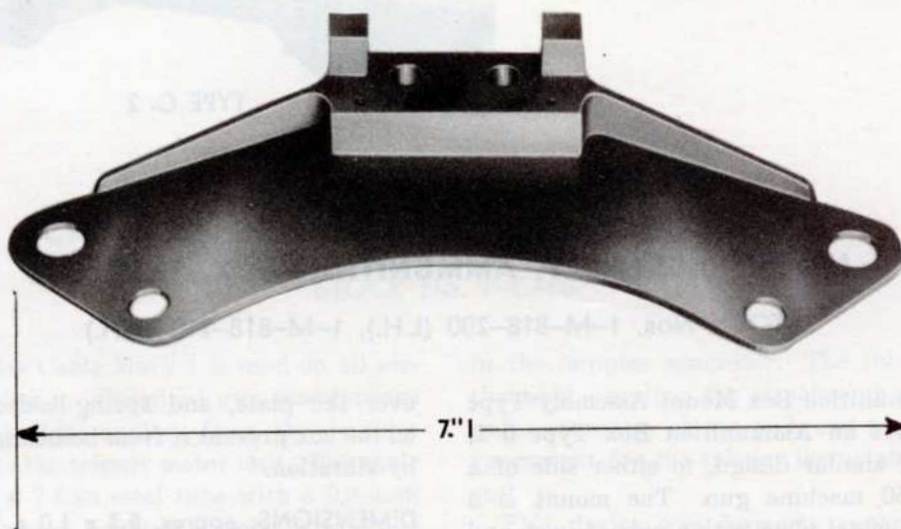
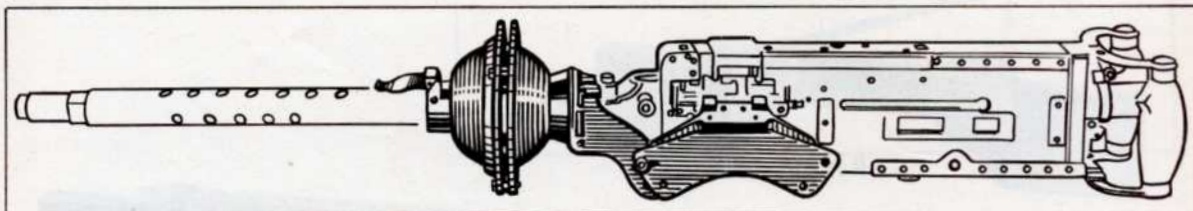
THE Ammunition Box Mount Assembly Type C-3, is identical to the Type C-2 except that the bracket projects $\frac{5}{16}$ -inch farther out from the side of the gun.

DIMENSIONS: approx. 5.3 x 1.4 x 1.0 inches.

WEIGHT: approx. 0.4 pound.

AAF DWG: 37B3905.

MOUNT, AMMUNITION BOX, TYPE A-3



MOUNT, AMMUNITION BOX, TYPE A-3

STOCK No. 1-M-818-150

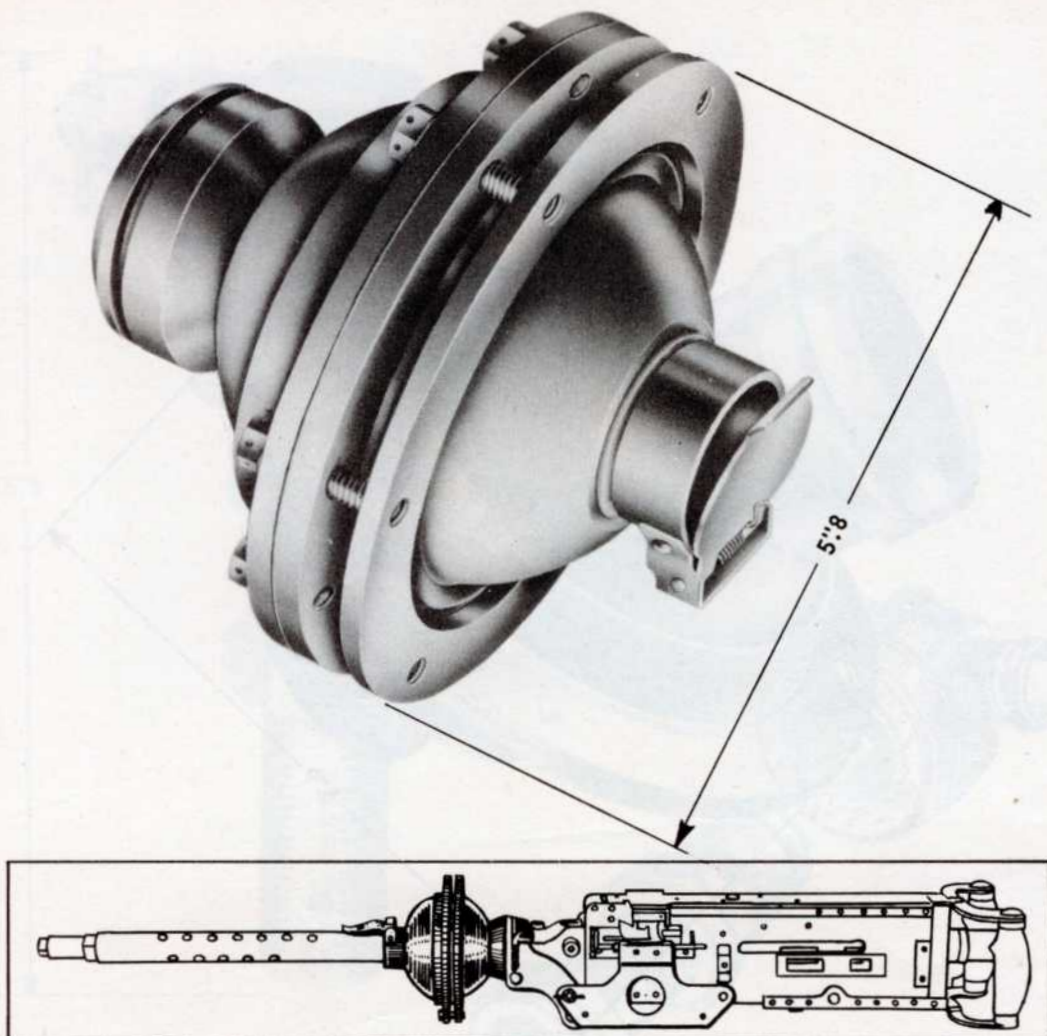
THE Ammunition Box Mount Type A-3, attaches a Magazine Holder Type A-1 to a caliber .30 machine gun. The mount is a welded metal bracket attached to the gun by the belt-holding pawl pin.

DIMENSIONS: approx. 7.1 x 3.0 x 0.8 inches.

WEIGHT: approx. 1.5 pounds.

AAF DWG: 40D5858.

MOUNT, GUN, BALL AND SOCKET, TYPE K-2A



MOUNT, GUN, BALL AND SOCKET, TYPE K-2A

STOCK No. 1-M-818-260

THE Ball and Socket Gun Mount Type K-2A is used with a single caliber .30 machine gun. The mount consists of a ball and a socket. The ball is cast in one hollow piece and has an integral sleeve that carries the gun barrel jacket. There is a spring cap over the end of the ball normally exposed to the slipstream. Thus, when the mount is not carrying a gun, the interior of the airplane is not subjected to drafts.

The socket consists of 2 rings, a spacer, and 9 bolts. One ring has its bolt holes threaded,

thereby acting as its own nut. The rings are placed on either side of the skin of the airplane, where the mount is located.

The Gun Mount Adapter Type C-18 is used with this mount.

DIMENSIONS:

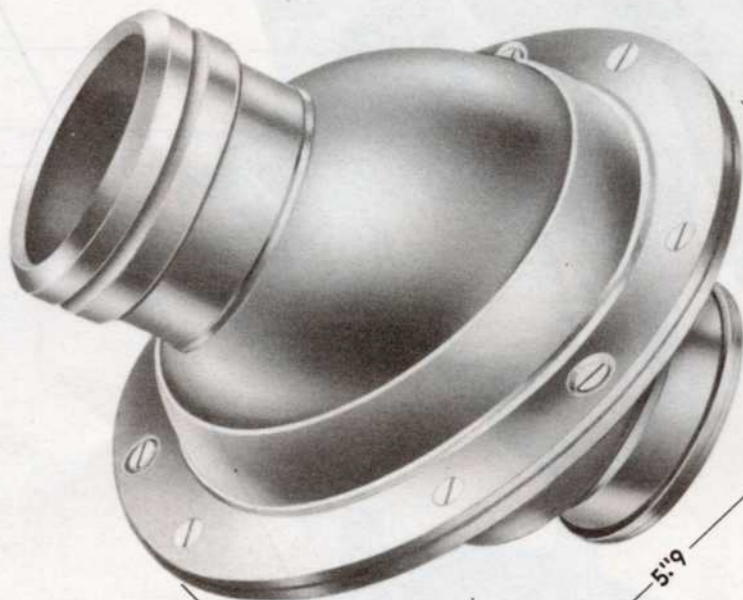
Socket diameter, approx. 5.8 inches.

Ball, approx. 4.0 x 5.0 inches.

WEIGHT: approx. 4.5 pounds.

AAF DWG: 41B10360.

MOUNT, GUN, BALL AND SOCKET, TYPE K-4



MOUNT, GUN, BALL AND SOCKET, TYPE K-4

STOCK No. 1-M-818-550

THE Ball and Socket Gun Mount Type K-4 is used with Gun Mount Adapters Type C-19 and E11 for caliber .50 machine guns.

Unlike the Type K-2A, the ball on this mount is stamped in halves and tightly butt-jointed. A non-removable sleeve to carry the gun barrel jacket extends the entire length of the ball. Six bolts mount the unit to a

support through the skin of the airplane.

DIMENSIONS:

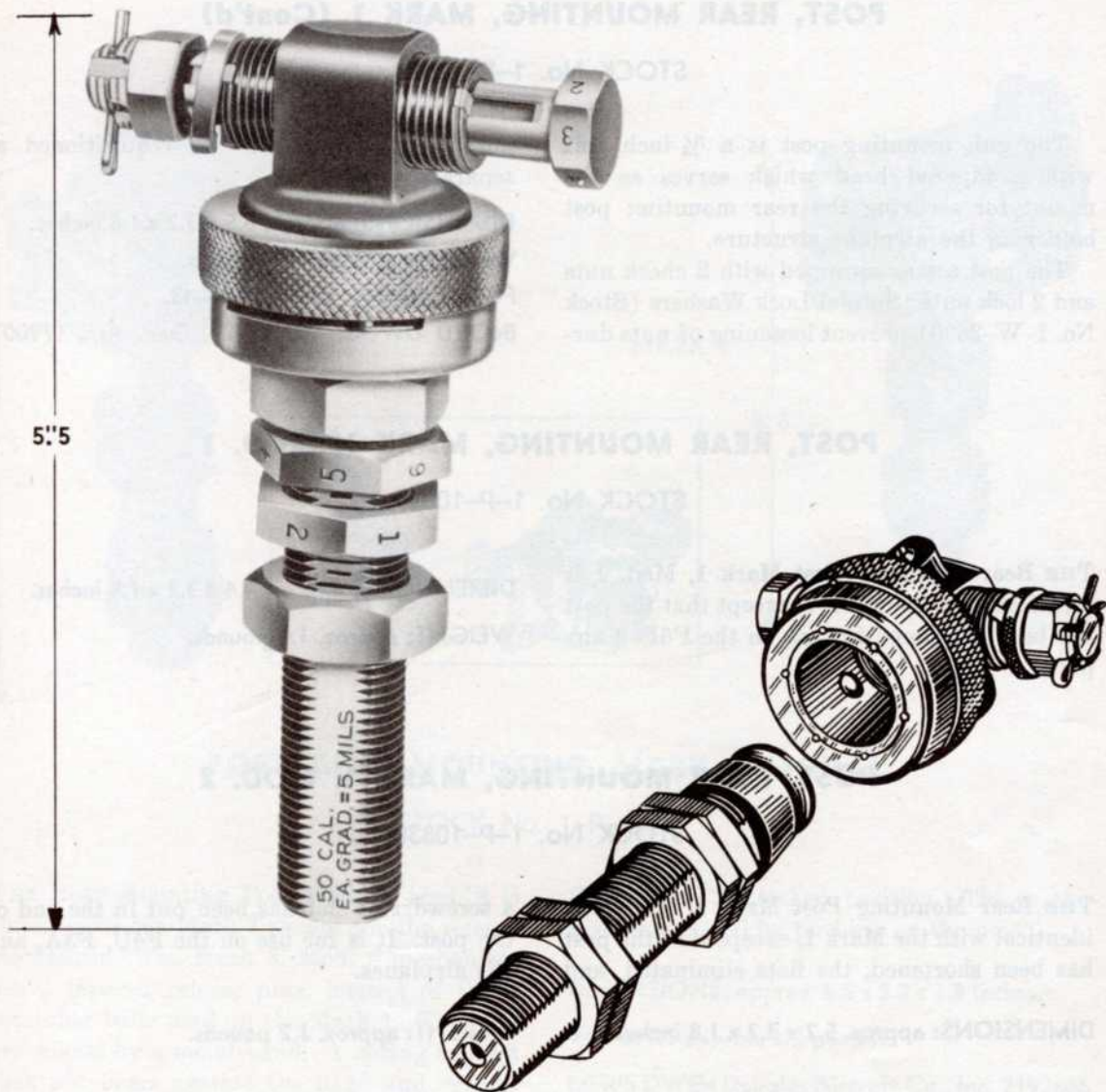
Socket diameter, approx. 5.9 inches.

Ball, approx. 4.1 x 4.1 x 5.4 inches.

WEIGHT: approx. 3.5 pounds.

AAF DWG: 42B19084.

POST, REAR MOUNTING, MARK 1 AND MODS., AND TYPE A-4



POST, REAR MOUNTING, MARK 1

STOCK No. 1-P-10828

THE Rear Mounting Post Mark 1 provides for the rapid mounting and dismounting of the aft end of a fixed caliber .30 or caliber .50 machine gun, and permits horizontal and vertical adjustments for boresighting. The unit is made up of a rear mounting post holder and a gun mounting post.

The post holder consists of the horizontal bolt and mounting sleeve, by which the gun is

secured to the post holder, and the release mechanism. This mechanism has 3 retaining balls in the post holder sleeve which fits over the gun mounting post. When in the locked position, the balls project into a groove around the gun mounting post. To release the post holder, a knurled collar outside the sleeve is rotated 45 degrees, permitting the balls to recede from the groove of the mounting post.

POST, REAR MOUNTING, MARK 1 AND MODS., AND TYPE A-4

POST, REAR MOUNTING, MARK 1 (Cont'd)

STOCK No. 1-P-10828

The gun mounting post is a $\frac{3}{4}$ -inch bolt with a tapered head which serves as the mount for securing the rear mounting post holder to the airplane structure.

The post comes equipped with 2 check nuts and 2 lock nuts. Special Lock Washers (Stock No. 1-W-2690) prevent loosening of nuts dur-

ing firing. These must be requisitioned as separate items.

DIMENSIONS: approx. 5.5 x 3.2 x 1.8 inches.

WEIGHT: approx. 1.5 pounds.

PUBLICATION: O.T.I. V-24-43.

BuORD DWGS: SK. 57929, Gen. Arr. 179007.

POST, REAR MOUNTING, MARK 1, MOD. 1

STOCK No. 1-P-10829

THE Rear Mounting Post Mark 1, Mod. 1 is identical with the Mark 1, except that the post has been shortened for use on the F6F-3 airplane.

DIMENSIONS: approx. 4.4 x 3.2 x 1.8 inches.

WEIGHT: approx. 1.4 pounds.

POST, REAR MOUNTING, MARK 1, MOD. 2

STOCK No. 1-P-10830

THE Rear Mounting Post Mark 1, Mod. 2 is identical with the Mark 1, except that the post has been shortened, the flats eliminated, and

a screwdriver slot has been put in the end of the post. It is for use on the F4U, F3A, and FG airplanes.

DIMENSIONS: approx. 5.2 x 3.2 x 1.8 inches.

WEIGHT: approx. 1.2 pounds.

POST, REAR MOUNTING, TYPE A-4

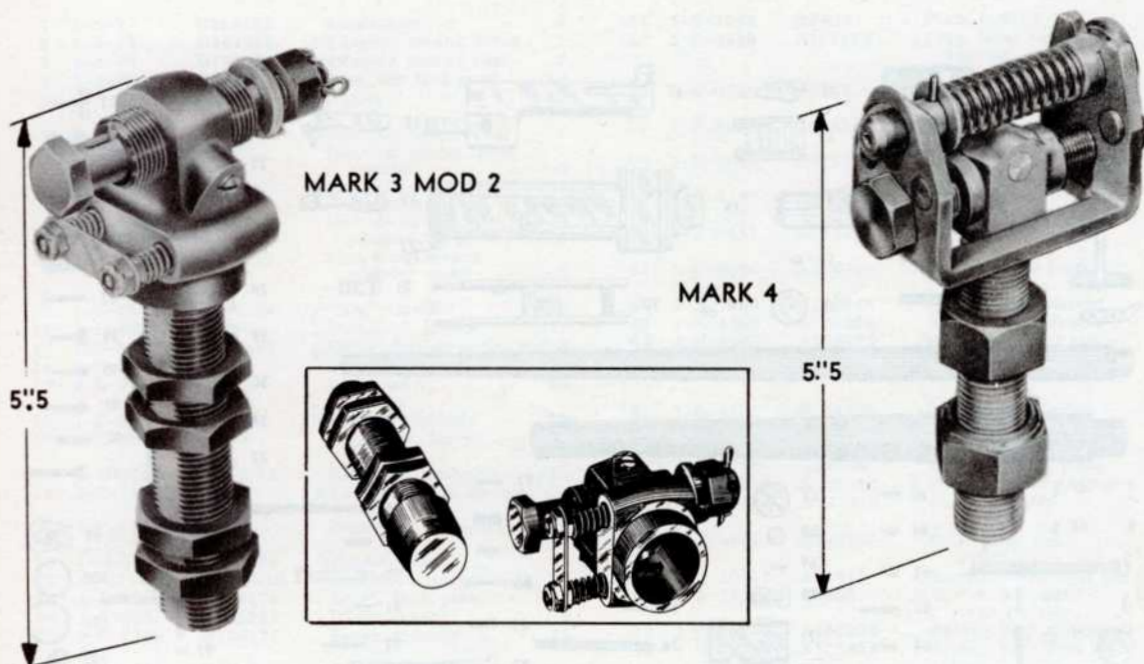
STOCK No. 1-P-10840

THE Rear Mounting Post Type A-4 is identical with the Mark 1 except that the Type A-4 does

not have height graduation.

AAF DWG: 38B1942.

POST, REAR MOUNTING, MARK 3, MOD. 2 AND MARK 4



POST, REAR MOUNTING, MARK 3, MOD. 2

STOCK No. 1-P-10837

THE Rear Mounting Post Mark 3, Mod. 2 is the same as the Mark 1 except for the release mechanism. The Mark 3, Mod. 2 mechanism has 2 tapered release pins, instead of the 3 retaining balls used on the Mark 1. The pins are joined by a metal band. A spring around each pin bears against the band and retains

the pin in the locked position. The mechanism is released by pushing on the pins.

DIMENSIONS: approx. 5.5 x 3.2 x 1.8 inches..

WEIGHT: approx. 1.5 pounds.

MFR'S DWG: Douglas Aircraft Co., Inc. 2192665.

POST, REAR MOUNTING, MARK 4

STOCK No. 1-P-10838

THE Rear Mounting Post Mark 4 provides for rapid mounting and dismounting of the aft end of a fixed caliber .30 or caliber .50 machine gun, and permits horizontal and vertical adjustments for boresighting.

A yoke, with a spring-loaded plunger at the top, is attached to a vertical threaded post by a transverse bolt. This bolt permits horizontal adjustment. Two self-locking nuts on

the post provide for vertical adjustment.

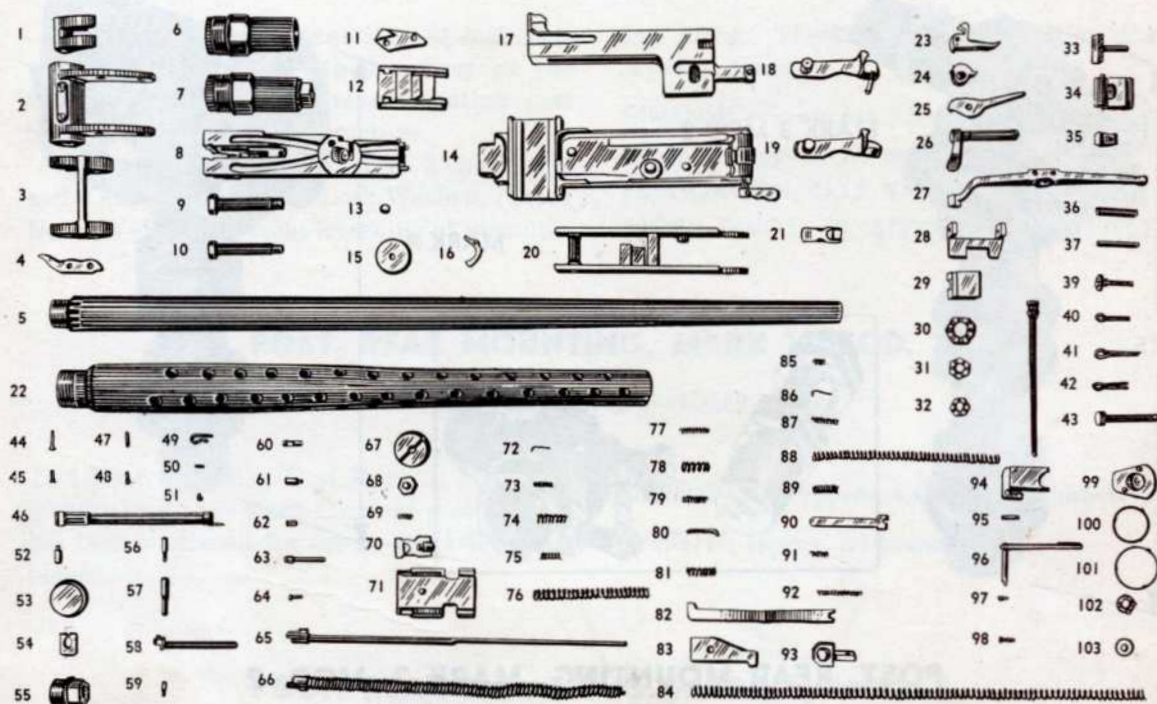
The rear trunnion of the gun fits down into the yoke and is secured by the plunger. The gun is dismounted by pulling on the knurled knob of the plunger and lifting the gun.

DIMENSIONS: approx. 5.5 x 3.8 x 1.5 inches.

WEIGHT: approx. 1.7 pounds.

BuORD DWG: Gen. Arr. 422076.

SET, SPARE PARTS, BAM-30, M2, BASE, BASIC GUN



SET, SPARE PARTS, BAM-30, M2, BASE, BASIC GUN

STOCK No. 1-S-9685

THE Base Spare Parts Set for BAM-30 Basic Guns is normally furnished on the basis of one set for 200 guns. These sets are allowed to certain ships and advanced bases as an increased allowance of parts in excess of those supplied in squadron spare parts sets.

Base spare parts sets in supply in excess of needs may be broken down and transferred to stock as individual items to augment the supply of bulk parts.

The basic set contains parts common to all caliber .30, M2, machine guns. In addition to

the basic set, one or more of the supplementary sets will be supplied depending upon whether the guns maintained are used as fixed guns, flexible guns, or flexible guns with fixed type back plates.

Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

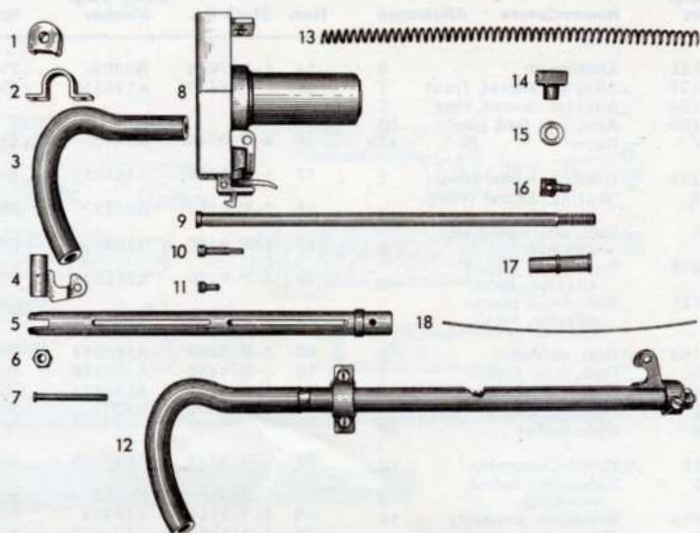
This set is made up of the items included on Ordnance Allowance List No. 18006 Rev. A, Section A and listed on the following page.

SET, SPARE PARTS, BAM-30, M2, BASE, BASIC GUN (CONT'D)

Item	Stock No.	Army Dwg. Number	Nomenclature	Allowance	Item	Stock No.	Army Dwg. Number	Nomenclature	Allowance
1	1-A-7	B134151	Accelerator	8	54	1-P-7246	B8808	Plate, locking	20
2	1-A-35	B147476	X Adapter, mount, front	7	55	1-P-8410	A135256	X Plug, front barrel bearing	10
3	1-A-36	B134154	X Adapter, mount, rear	7					
4	1-A-320	B134155	Arm, belt feed pawl	10	56	1-P-9040	A9278	X Plunger, adjusting screw	12
5	1-B-665	C9837	Barrel	40	57	1-P-9075	A135257	Plunger, back plate latch spring	4
6	1-B-1099	B134156	X Bearing, barrel front	7	58	1-P-9110	B8777	Plunger, barrel, assembly	12
7	1-B-1746	B8768	Bearing, barrel front, assembly	4	59	1-P-9160	A135259	Plunger, belt feed lever spring	12
8	1-B-2797	C3961	Bolt, alternate feed, assembly	3	60	1-P-9470	A135262	X Plunger, extractor	7
9	1-B-3312	A152872	Bolt, front mount adapter, large	3	61	1-P-9974	A196206	X Plunger, sear holder spring	12
10	1-B-3315	A135212	Bolt, front mount adapter, small	3	62	1-P-9980	A135264	Plunger, sear spring	4
11	1-C-233	B134164	X Cam, extractor	5	63	1-R-1400	A135266	Retainer, lock frame	8
12	1-C-400	C9840	Cam, lock, breech	7	64	1-R-3665	A135274	X Rivet, extractor cam	9
13	1-C-4680	A135216	X Collar, driving spring rod	6	65	1-R-4990	B8772	X Rod, driving spring, assembly	5
14	1-C-5876	C3962	Cover, assembly	5					
15	1-D-1260	A9374	Disk, buffer	50	66	1-R-4992	B134206	Rod, driving spring w/spring, assembly	12
16	1-E-435	A13444	X Ejector, assembly	12	67	1-S-300	B9833	X Screw, adjusting	7
17	1-E-650	C3963	Extension, barrel assembly	7	68	1-S-1717	A13624	Screw, locking plate	18
18	1-E-1245	B134204	Extractor, assembly	12	69	1-S-1741	A135288	X Screw, mount adapter	4
19	1-E-1247	C3964	X Extractor, w/o ejector, assembly	2	70	1-S-4630	B147586	X Sear, assembly	18
20	1-F-1110	C3965	Frame, lock, assembly	4	71	1-S-9419	B147759	Slide, feed, belt assembly	7
21	1-H-1972	B147584	X Holder, sear	11	72	1-S-10103	A20615	X Spring, accelerator pin	10
22	1-J-117-5	C4024-10	Jacket, barrel, assembly	2	73	1-S-10209	A9300	X Spring, adjusting screw plunger	12
23	1-L-175	B134174	Latch, back plate	7	74	1-S-10330	A135294	Spring, back plate latch	6
24	1-L-280	A135223	Latch, cover	5	75	1-S-10336	A152832	Spring, back plate latch lock	6
25	1-L-2375	B134177	Lever, cocking	11					
26	1-L-3275	B8770	Lever, cover latch, assembly	5	76	1-S-10430	A135295	Spring, barrel plunger	10
27	1-L-3280	B134176	Lever, feed belt	25	77	1-S-10481	A135296	Spring, belt feed lever plunger	25
28	1-L-3659	B147404	Lock, back plate latch	7	78	1-S-10488	A135297	Spring, belt feed pawl	25
29	1-L-3691	B134178	Lock, breech	6	79	1-S-10508	A135298	X Spring, belt holding pawl	24
30	1-N-351	A13008	Nut, breech lock cam	7	80	1-S-10513	A13497	X Spring, belt holding pawl pin	8
31	1-N-581	A152873	Nut, front mount adapter bolt, large	13	81	1-S-11570	A135300	Spring, cover detent pawl	8
32	1-N-582	A135226	Nut, front mount adapter bolt, small	13	82	1-S-11583	B134191	Spring, cover extractor	24
33	1-P-1266	B134181	Pawl, cover detent assembly	6	83	1-S-11590	A135301	Spring, cover latch	12
34	1-P-1430	B8771	Pawl, feed, belt, assembly	6	84	1-S-11811	A135302	X Spring, driving	20
35	1-P-1434	B134180	Pawl, holding, belt	12	85	1-S-11855	A135303	X Spring, ejector	20
36	1-P-1772	A13440	Pin, accelerator, assembly	6	86	1-S-11880	A135304	X Spring, ejector pin	10
37	1-P-1982	A13441	Pin, belt, feed pawl, assembly	7	87	1-S-12123	A135305	X Spring, extractor plunger	12
38	1-P-2004	A13442	Pin, belt, holding pawl, assembly	12	88	1-S-12545	A135306	X Spring, firing pin	20
39	1-P-2313	A135240	Pin, cocking lever	7	89	1-S-13785	A134307	Spring, lock frame retainer	12
40	42-P-5500	BFAXI-CO	Pin, cotter, belt feed lever pivot stud	50	90	1-S-14070	B134190	Spring, locking barrel	10
41	42-P-5660	BFAXI-DH	Pin, cotter, breech lock cam	50	91	1-S-17606	A152947	Spring, sear	20
42	42-P-5440	BFAXI-BE	Pin, cotter, mount adapter bolt nut	80	92	1-S-17781	A196205	Spring, sear holder	20
43	1-P-2517	A135241	X Pin, cover	8	93	1-S-21000	B134192	Stop, cartridge, front	4
44	1-P-2632	A135245	Pin, ejector	24	94	1-S-21003	B134193	Stop, cartridge, rear	4
45	1-P-2745	A135246	X Pin, extractor, plunger	6	95	1-S-21120	A135247	X Stop, extractor	4
46	1-P-2880-50	B7821	Pin, firing, assembly	20	96	1-S-21570	B8775	Stop, sear, assembly	10
47	1-P-3193	A20498	X Pin, firing pin spring	20	97	1-S-22185	A135315	X Stud, barrel plunger	5
48	1-P-3266	A135235	X Pin, guide, barrel plunger	6	98	1-S-22305	A135317	X Stud, cover extractor spring	5
49	1-P-4517	A152840	X Pin, retainer, belt holding pawl pin	40	99	1-S-23260	B134198	Switch, bolt	6
50	1-P-4635	A135249	X Pin, sear spring plunger	20	100	1-W-2679	A152716	Washer, lock, front barrel bearing plug	20
51	1-P-4753	A135250	X Pin, stop, driving spring rod collar	12	101	1-W-2675	A152717	Washer, lock, front barrel bearing	20
52	1-P-4820-15	A152952	Pin, switch	8	102	1-W-2683	A13625	Washer, lock, locking plate screw	18
53	1-P-6896	A135253	X Plate, buffer	8	103	1-W-3002	BERXID	Washer, steel, No. 8 (.164)	12

WEIGHT: approx. 125.0 pounds.

SET, SPARE PARTS, BAM-30, M2, BASE, SUPPLEMENTARY SET FOR FIXED GUNS ONLY



SET, SPARE PARTS, BAM-30, M2, BASE, SUPPLEMENTARY SET FOR FIXED GUNS ONLY

STOCK No. 1-S-9687

THE Supplementary Base Spare Parts Set for BAM-30 Fixed Guns in addition to the Base Set for the Basic Gun (Stock No. 1-S-9685) is supplied to certain vessels and shore facilities for maintenance and overhaul of BAM-30 fixed guns. The normal allowance is one set for every 200 guns maintained.

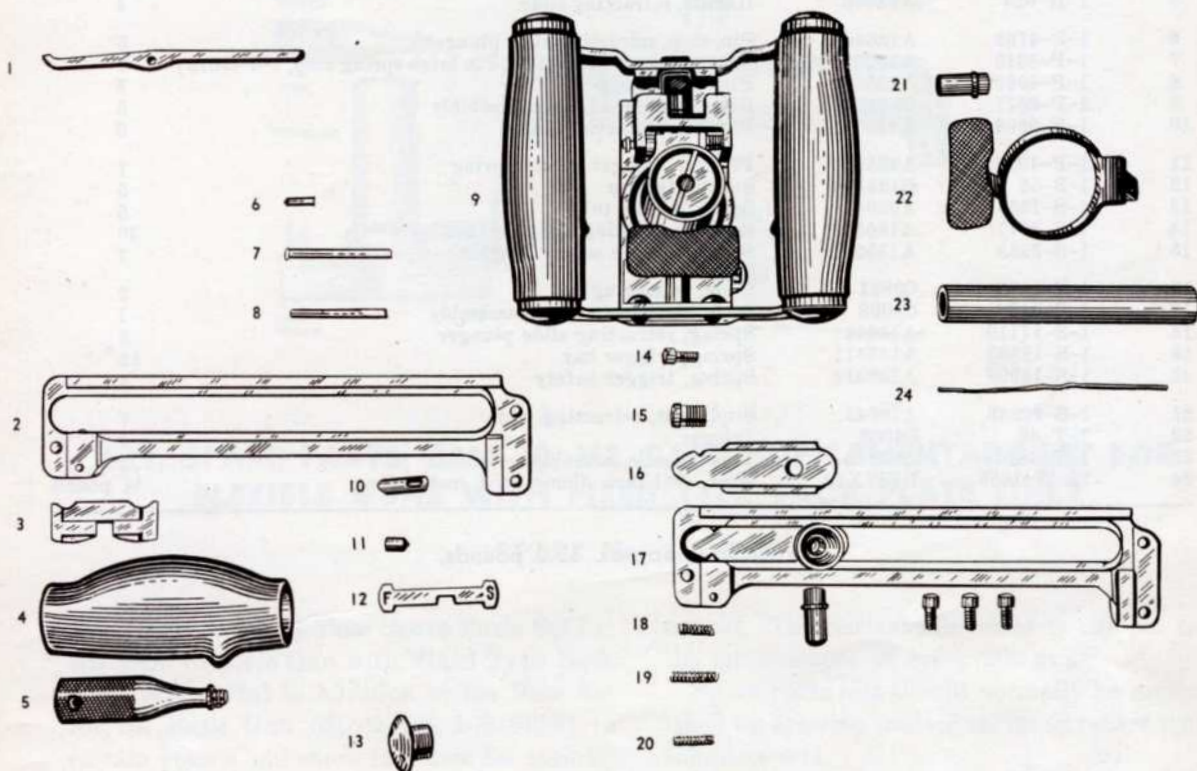
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 18006 Rev. A, Section B and listed below:

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-5580	A135213	Bracket, operating slide, front	5
2	1-B-5585	A135214	Bracket, operating slide, rear	5
3	1-H-881-300	B147700	Handle, operating slide	7
4	1-H-2135	B8751	Hook, operating slide	4
5	1-H-2311	B8754	Housing, operating slide assembly	5
6	1-N-1115	A152625	Nut, operating slide hook stop	5
7	1-P-3613	A152877	Pin, latch spring stop	4
8	1-P-6675	C64294	Plate, back, with horizontal buffer assembly	5
9	1-R-5000	B8755	Rod, operating slide assembly	9
10	1-S-1787	A135290	Screw, operating slide bracket, front	12
11	1-S-1788	A135289	Screw, operating slide bracket, rear	20
12	1-S-9420	C3949	Slide operating group assembly	2
13	1-S-14985	B8753	Spring, operating slide	2
14	1-S-21160	A152833	Stop, latch spring	5
15	1-S-21250	A13427	Stop, operating slide handle	4
16	1-S-21260	A135314	Stop, operating slide hook	5
17	1-S-22235	A135316	Stud, bolt	12
18	22-W-1055	BFWX1A	Wire, locking, operating slide, .041-inch diameter x 6 inches long	1/4 pound

WEIGHT: approx. 4.0 pounds.

SET, SPARE PARTS, BAM-30, M2, BASE, SUPPLEMENTARY SET FOR FLEXIBLE GUNS ONLY



SET, SPARE PARTS, BAM-30, M2, BASE, SUPPLEMENTARY SET FOR FLEXIBLE GUNS ONLY

STOCK No. 1-S-9689

THE Supplementary Base Spare Parts Set for BAM-30 Flexible Guns is supplied in addition to the Base Set for the Basic Gun (Stock No. 1-S-9685) to certain vessels and shore facilities for maintenance and overhaul purposes and will be so listed on the aviation ordnance allowance list applicable to the vessels and bases concerned. The normal allowance is one

set for every 200 flexible guns maintained.

Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

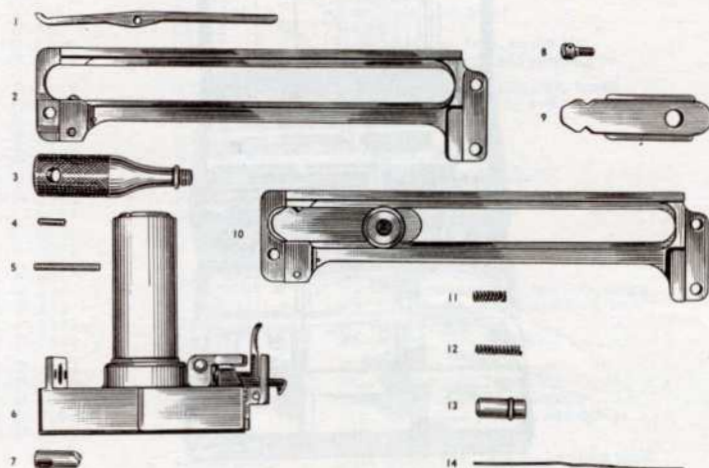
This set is made up of the items included on Ordnance Allowance List No. 18006, Rev. A, Section C and listed on the following page.

SET, SPARE PARTS, BAM-30, M2, BASE, SUPPLEMENTARY SET FOR FLEXIBLE GUNS ONLY (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-625	B134157	Bar, trigger	6
2	1-B-5746	C4099	Bracket, retracting slide	2
3	1-B-5980	B134163	Bracket, trigger safety	2
4	1-G-5090	B147470	Grip, handle	7
5	1-H-924	A13636	Handle, retracting slide	4
6	1-P-4789	A13640	Pin, stop, retracting slide plunger	5
7	1-P-3613	A152877	Pin, trigger (Identical to Pin latch spring stop, 1-P-3613)	7
8	1-P-4960	A135252	Pin, trigger bar	7
9	1-P-6671	C64293	Plate, back, spade grip, assembly	5
10	1-P-9908	A13637	Plunger, retracting slide	5
11	1-P-10160	A135265	Plunger, trigger safety spring	7
12	1-S-55	B134186	Safety, trigger	5
13	1-S-1355	A9394	Screw, handle tube	5
14	1-S-3377	A13638	Screw, retracting slide bracket	30
15	1-S-3988	A135291	Screw, trigger safety bracket	7
16	1-S-9425	C3821	Slide, retracting	2
17	1-S-9426	C4098	Slide, retracting group assembly	1
18	1-S-17110	A13644	Spring, retracting slide plunger	5
19	1-S-18865	A135311	Spring, trigger bar	12
20	1-S-18995	A135312	Spring, trigger safety	4
21	1-S-22248	A13643	Stud, bolt, retracting slide	7
22	1-T-30	C4008	Trigger	4
23	1-T-3820	A13446	Tube, handle assembly	2
24	22-W-1055	BFWXIA	Wire, .041-inch diameter, 4 inches long	1/4 pound

WEIGHT: approx. 13.0 pounds.

SET, SPARE PARTS, BAM-30, M2, BASE, SUPPLEMENTARY SET FOR FLEXIBLE GUNS WITH FIXED TYPE BACK PLATE ONLY



SET, SPARE PARTS, BAM-30, M2, BASE, SUPPLEMENTARY SET FOR FLEXIBLE GUNS WITH FIXED TYPE BACK PLATE ONLY

STOCK No. 1-S-9691

THE Supplementary Base Spare Parts Set for BAM-30 Flexible Gun with Fixed Type Back Plate is supplied in addition to the Base Set for the Basic Gun (Stock No. 1-S-9685) to certain vessels and shore facilities for maintenance and overhaul purposes, and will be so listed in the Aviation Ordnance Allowance List applicable to the vessels and bases con-

cerned. The normal allowance is one set for the maintenance of every 200 guns.

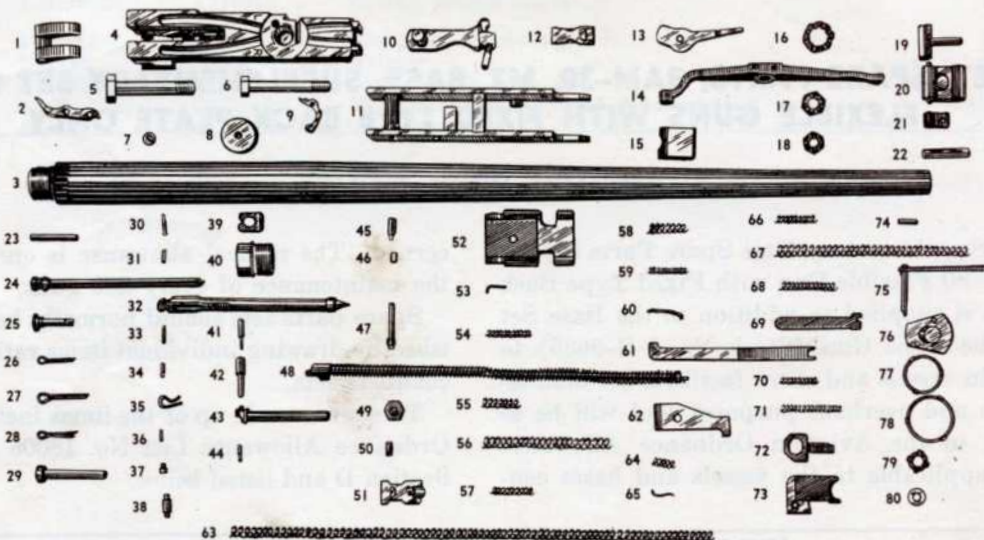
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 18006 Rev. A, Section D and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-625	B134157	Bar, trigger	6
2	1-B-5746	C4099	Bracket, retracting slide	2
3	1-H-924	A13636	Handle, retracting slide	4
4	1-P-4789	A13640	Pin, stop, retracting slide plunger	5
5	1-P-4960	A135252	Pin, trigger bar	7
6	1-P-6675	C64294	Plate, back, with horizontal buffer assembly	5
7	1-P-9908	A13637	Plunger, retracting slide	5
8	1-S-3377	A13638	Screw, retracting slide bracket	30
9	1-S-9425	C3821	Slide, retracting	2
10	1-S-9426	C4098	Slide, retracting group, assembly	2
11	1-S-17110	A13644	Spring, retracting slide plunger	5
12	1-S-18865	A135311	Spring trigger bar	12
13	1-S-22248	A13643	Stud, bolt	7
14	22-W-1055	BFWXI	Wire, .041-inch diameter x 4 inches long	¼ pound

WEIGHT: approx. 20.0 pounds.

SET, SPARE PARTS, BAM-30, M2, SQUADRON, BASIC GUN



SET, SPARE PARTS, BAM-30, M2, SQUADRON, BASIC GUN

STOCK No. 1-S-9695

THE Squadron Basic Spare Parts Set for BAM-30 guns is normally issued on the basis of one set for every 40 guns maintained.

The basic set is made up of parts common to all BAM-30 guns. One or more supplementary sets for guns maintained as fixed guns, flexible guns, or flexible guns with fixed type back plates, will be issued to each squad-

ron, in addition to the basic set.

Spare parts should normally be replenished by drawing individual items rather than complete sets.

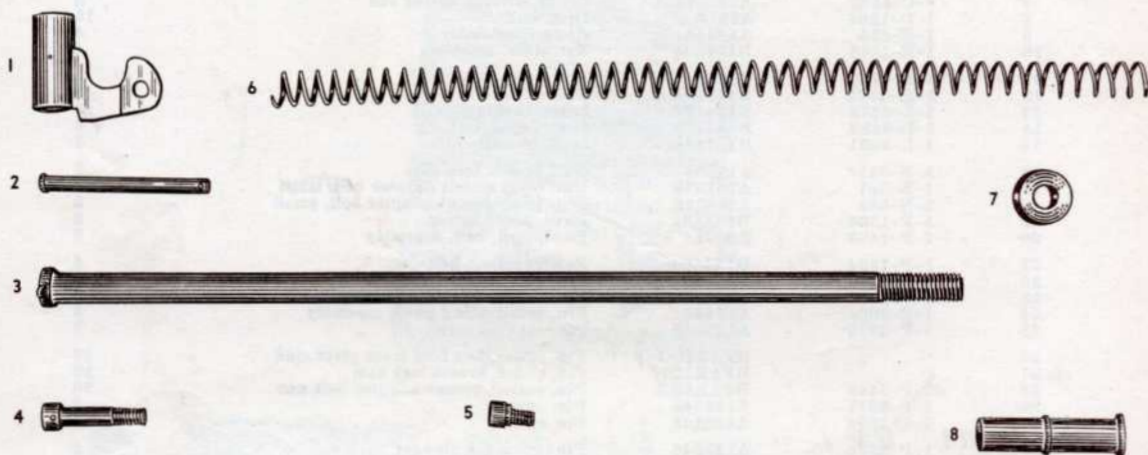
This set is made up of the items included on Ordnance Allowance List No. 18005 Rev. A, Section A and listed on the following page.

SET, SPARE PARTS, BAM-30, M2, SQUADRON, BASIC GUN (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-A-7	B134151	Accelerator	2
2	1-A-320	B134155	Arm, belt feed pawl	3
3	1-B-665	C9837	Barrel	13
4	1-B-2797	C3961	Bolt, alternate feed, assembly	1
5	1-B-3312	A152872	Bolt, front mount adapter, large	1
6	1-B-3315	A135212	Bolt, front mount adapter, small	1
7	1-C-4680	A135216	Collar, driving spring rod	3
8	1-D-1260	A9374	Disk, buffer	15
9	1-E-435	A13444	Ejector, assembly	4
10	1-E-1245	B134204	Extractor, assembly	4
11	1-F-1110	C3965	Frame, lock, assembly	1
12	1-H-1972	B147584	Holder, sear	3
13	1-L-2375	B134177	Lever, cocking	3
14	1-L-3280	B134176	Lever, feed, belt	6
15	1-L-3691	B134178	Lock, breech	1
16	1-N-351	A13008	Nut, breech lock cam	2
17	1-N-581	A152873	Nut, front mount adapter bolt, large	2
18	1-N-582	A135226	Nut, front mount adapter bolt, small	2
19	1-P-1266	B134181	Pawl, cover detent	2
20	1-P-1430	B8771	Pawl, feed, belt, assembly	3
21	1-P-1434	B134180	Pawl, holding, belt	4
22	1-P-1772	B13440	Pin, accelerator, assembly	3
23	1-P-1982	A13441	Pin, belt feed pawl, assembly	2
24	1-P-2004	A13442	Pin, belt holding pawl, assembly	4
25	1-P-2313	A135240	Pin, cocking lever	2
26		BFAX100	Pin, cotter, belt feed lever pivot stud	12
27		BFAX10H	Pin, cotter, breech lock cam	12
28	42-P-5440	BFAX1BE	Pin, cotter, mount adapter bolt nut	20
29	1-P-2517	A135241	Pin, cover	1
30	1-P-2632	A135245	Pin, ejector	6
31	1-P-2745	A135246	Pin, extractor plunger	1
32	1-P-2880-50	B8721	Pin, firing, assembly	5
33	1-P-3193	A20498	Pin, firing pin spring	5
34	1-P-3266	A135235	Pin, guide, barrel plunger	1
35	1-P-4517	A152840	Pin, retainer, belt holding pawl	13
36	1-P-4635	A135249	Pin, sear spring plunger	5
37	1-P-4753	A135250	Pin, stop, driving spring rod collar	2
38	1-P-4820-15	A152952	Pin, switch	2
39	1-P-7246	B8808	Plate, locking	5
40	1-P-8410	A135256	Plug, front barrel bearing	3
41	1-P-9040	A9278	Plunger, adjusting screw	2
42	1-P-9075	A135257	Plunger, back plate latch spring	1
43	1-P-9110	B8777	Plunger, barrel, assembly	2
44	1-P-9160	A135259	Plunger, belt feed lever spring	4
45	1-P-9974	A196206	Plunger, sear holder spring	2
46	1-P-9980	A135264	Plunger, sear spring	1
47	1-R-1400	A135266	Retainer, lock frame	1
48	1-R-4992	B135206	Rod, driving spring, with spring assembly	6
49	1-S-1717	A13624	Screw, locking plate	4
50	1-S-1741	A135288	Screw, mount adapter	1
51	1-S-4630	B147586	Sear, assembly	6
52	1-S-9419	B147759	Slide, feed, belt, assembly	2
53	1-S-10103	A20615	Spring, accelerator pin	3
54	1-S-10209	A9300	Spring, adjusting screw plunger	4
55	1-S-10330	A135294	Spring, back plate latch	1
56	1-S-10430	A135295	Spring, barrel plunger	3
57	1-S-10481	A135296	Spring, belt feed lever plunger	6
58	1-S-10488	A135297	Spring, belt feed pawl	6
59	1-S-10508	A135298	Spring, belt holding pawl	8
60	1-S-10513	A13497	Spring, belt holding pawl pin	2
61	1-S-11583	B134191	Spring, cover extractor	8
62	1-S-11590	A135301	Spring, cover latch	2
63	1-S-11811	A135302	Spring, driving	5
64	1-S-11855	A135303	Spring, ejector	5
65	1-S-11880	A135304	Spring, ejector pin	3
66	1-S-12123	A135305	Spring, extractor plunger	2
67	1-S-12545	A135306	Spring, firing pin	5
68	1-S-13785	A135307	Spring, lock frame retainer	2
69	1-S-14070	B134190	Spring, locking, barrel	3
70	1-S-17606	A152947	Spring, sear	7
71	1-S-17781	A196205	Spring, sear holder	7
72	1-S-21000	B134192	Stop, cartridge, front	1
73	1-S-21003	B134193	Stop, cartridge, rear	1
74	1-S-21120	A135247	Stop, extractor	1
75	1-S-21570	B8775	Stop, sear, assembly	3
76	1-S-23260	B134198	Switch, bolt	1
77	1-W-2679	A152716	Washer, lock, front, barrel bearing plug	5
78	1-W-2675	A152717	Washer, lock, front barrel bearing	5
79	1-W-2683	A13625	Washer, lock, locking plate screw	6
80	1-W-3002	BEBX1D	Washer, steel, SAE Std. No. 8 (.164)	

WEIGHT: approx. 60.0 pounds.

SET, SPARE PARTS, BAM-30, M2, SQUADRON, SUPPLEMENTARY SET FOR FIXED GUNS ONLY



SET, SPARE PARTS, BAM-30, M2, SQUADRON, SUPPLEMENTARY SET FOR FIXED GUNS ONLY

STOCK No. 1-S-9697

THE Supplementary Squadron Spare Parts Set for BAM-30 Fixed Guns is supplied to operating activities in addition to the Squadron Set for the Basic Gun (Stock No. 1-S-9695) for the maintenance of fixed guns. The normal allowance is one set for every 40 fixed guns maintained.

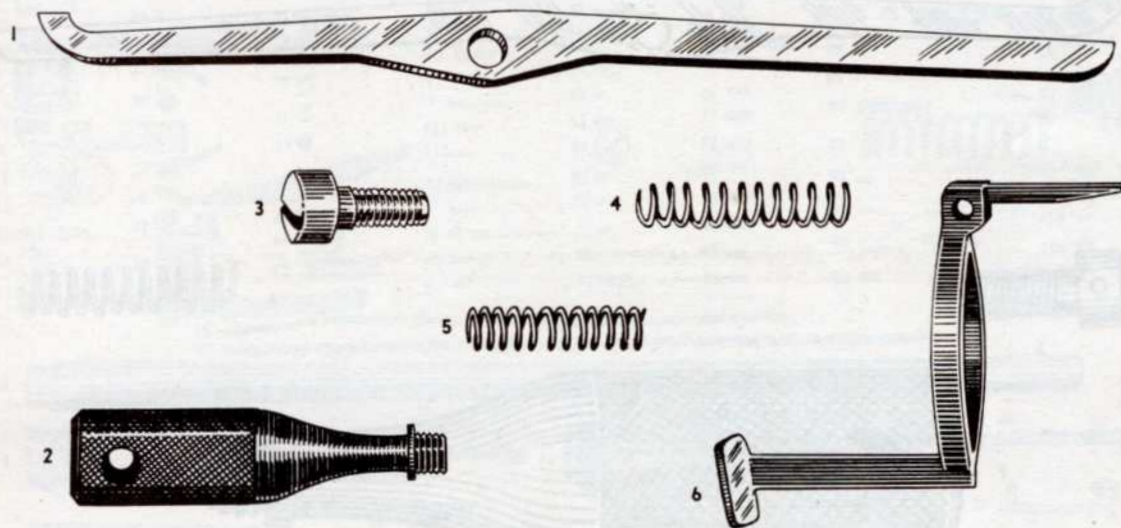
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 18005 Rev. A, Section B, and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-H-2135	B8751	Hook, operating slide	1
2	1-P-3613	A152877	Pin, latch spring stop	1
3	1-R-5000	B8755	Rod, operating slide assembly	1
4	1-S-1787	A135290	Screw, operating slide bracket, front	4
5	1-S-1788	A135289	Screw, operating slide bracket, rear	5
6	1-S-14985	B8753	Spring, operating slide	2
7	1-S-21250	A13427	Stop, operating slide handle	1
8	1-S-22235	A135316	Stud, bolt	2

WEIGHT: approx. 4.0 pounds.

SET, SPARE PARTS, BAM-30, M2, SQUADRON, SUPPLEMENTARY SET FOR FLEXIBLE GUNS ONLY



SET, SPARE PARTS, BAM-30, M2, SQUADRON, SUPPLEMENTARY SET FOR FLEXIBLE GUNS ONLY

STOCK No. 1-S-9699

THE Supplementary Squadron Spare Parts Set for BAM-30 Flexible Guns is supplied to a squadron in addition to the basic set, for the maintenance of flexible guns. The normal allowance is one set for every 40 flexible guns maintained.

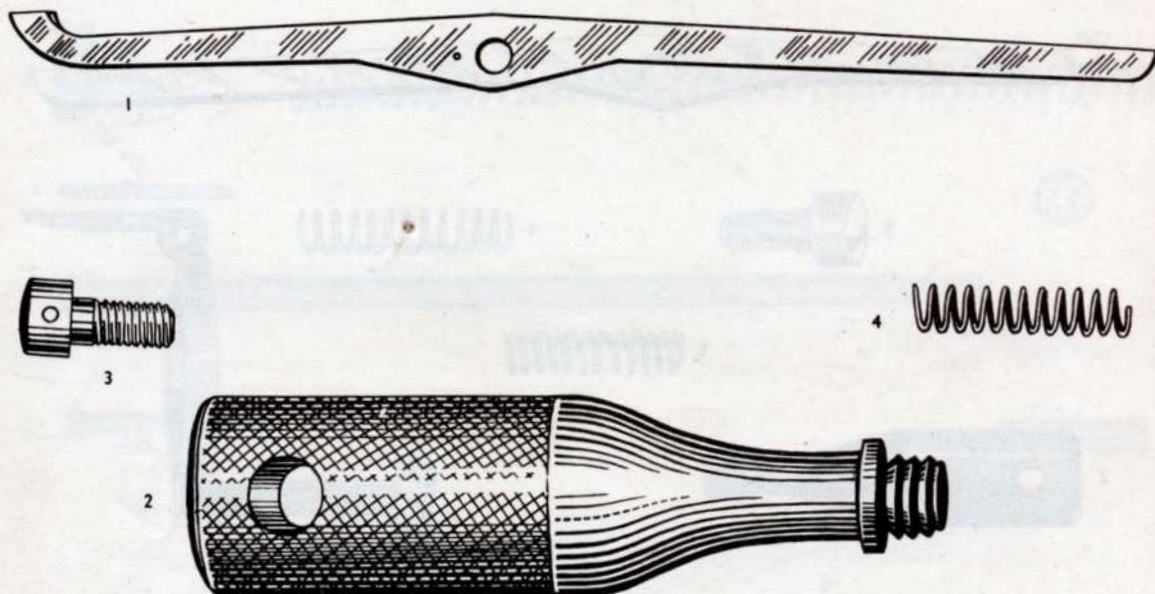
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 18005 Rev. A, Section C and listed below :

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-625	B134157	Bar, trigger	1
2	1-H-924	A13636	Handle, retracting slide	1
3	1-S-3377	A13638	Screw, retracting slide bracket	7
4	1-S-18865	A135311	Spring, trigger bar	4
5	1-S-18995	A135312	Spring, trigger safety	1
6	1-T-30	C4008	Trigger	1

WEIGHT: approx. 1.0 pound.

SET, SPARE PARTS, BAM-30, M2, SQUADRON, SUPPLEMENTARY SET FOR FLEXIBLE GUNS WITH FIXED TYPE BACK PLATES ONLY



SET, SPARE PARTS, BAM-30, M2, SQUADRON, SUPPLEMENTARY SET FOR FLEXIBLE GUNS WITH FIXED TYPE BACK PLATES ONLY

STOCK No. 1-S-9701

THIS Supplementary Squadron Spare Parts Set for BAM-30 Flexible Guns with Fixed Type Back Plate is supplied to operating activities in addition to the Base Set for the Basic Gun (Stock No. 1-S-9685), for maintenance purposes. The normal allowance is one set for every 20 guns.

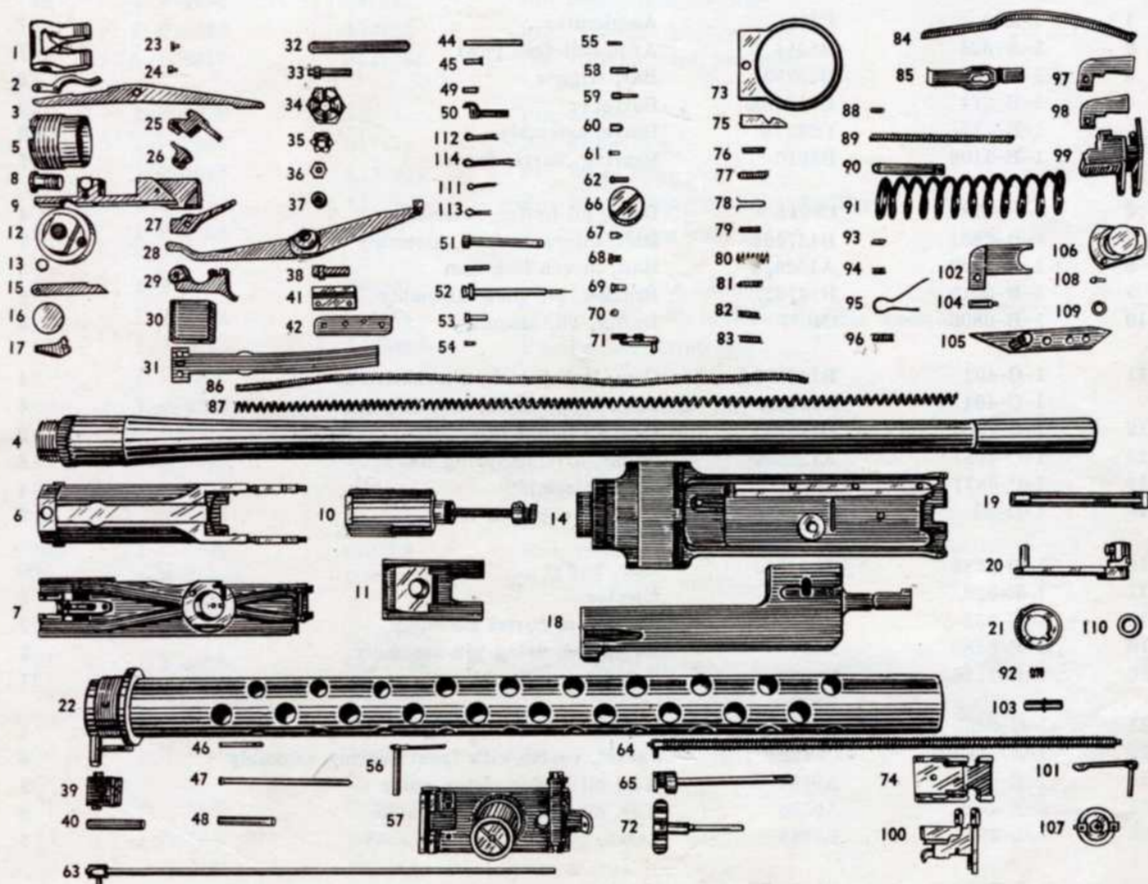
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 18005, Section D and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-625	B134157	Bar, trigger	3
2	1-H-924	A13636	Handle, retracting slide	1
3	1-S-3377	A13638	Screw, retracting slide bracket	7
4	1-S-18865	A135311	Spring, trigger bar	3

WEIGHT: approx. 1.0 pound.

SET, SPARE PARTS, BAM-50, M2, BASE, BASIC GUN



SET, SPARE PARTS, BAM-50, M2, BASE, BASIC GUN

STOCK No. 1-S-9720

THE Base Spare Parts Set for BAM-50 Basic Guns is normally furnished on the basis of one set for each 200 guns. These sets are allowed to certain ships and advanced bases as an increased allowance of parts in excess of those supplied in squadron spare parts sets.

Base spare parts sets in supply in excess of

needs may be broken down and transferred to stock as individual items to augment the supply of bulk parts.

Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

SET, SPARE PARTS, BAM-50, M2, BASE, BASIC GUN

This set is made up of the items included on Ordnance Allowance
List No. 15400, Rev. B and listed on pages 92, 93 and 94.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-A-9	C8141	Accelerator	7
2	1-A-323	B8914	Arm, belt feed pawl	7
3	1-B-629-50	B257592	Bar, trigger	6
4	1-B-674	D35348A	Barrel or	60
	1-B-710	D28272	Barrel assembly	60
5	1-B-1100	B8910	Bearing, barrel front	7
6	1-B-2780	C3941	Body, oil buffer, assembly	4
7	1-B-2801	B147463	Bolt, alternate feed, assembly	7
8	1-B-2828	A152938	Bolt, breech lock cam	6
9	1-B-5910	B147817	Bracket, top plate assembly	2
10	1-B-6802	C4077	Buffer, oil, assembly	4
11	1-C-402	B147583A	Cam, lock breech, alternative or	4
	1-C-404	B147583	Cam, lock, breech, assembly	4
12	1-C-1065	B147845	Cap, oil buffer tube	2
13	1-C-4687	A152900	Collar, driving spring rod	6
14	1-C-5877	C4081	Cover assembly	4
15	1-D-85	B9712	Depressor, breech lock	7
16	1-D-1288	A152835	Disc, buffer	60
17	1-E-326	B9732	Ejector	6
18	1-E-653	C4082	Extension, barrel assembly	7
19	1-E-658	B8976	Extension, firing pin assembly	6
20	1-E-1246	B8959	Extractor, assembly	11
21	1-G-5460	B8782	Guide, oil buffer spring assembly	4
22	1-J-118-15	C64290	Jacket, barrel with front bearing assembly	6
23	1-K-575	A9784	Key, oil buffer piston valve	2
24	1-K-580	A9520	Key, oil buffer spring guide	2
25	1-L-193	B8949	Latch, back plate	4
26	1-L-288	B8928	Latch, cover	4
27	1-L-2386	B9718A	Lever, cocking	6
28	1-L-3281	C64278	Lever, feed belt	16
29	1-L-3662	B147464	Lock, back plate latch	4
30	1-L-3695	B8925	Lock, breech	4
31	1-L-3854	C145325	Lock, oil buffer tube assembly	4
32	1-L-3989	A9266	Lock, spring, oil buffer body	6
33	1-L-4015	A13565	Lock, trunnion block	4
34	1-N-351-50	A152939	Nut, breech lock cam bolt	6
35	1-N-1112	A9267	Nut, oil buffer piston head	4
36	1-N-1661	A13556	Nut, switch pivot	6
37	1-P-507	A153162	Packing, oil buffer gland	12
38	1-P-1263	B8975	Pawl, cartridge aligning	3
39	1-P-1267-50	B8515	Pawl, cover detent, assembly	4
40	1-P-1427	B8961	Pawl, feed belt, assembly	7
41	1-P-1434-50	B261098	Pawl, holding belt	6
42	1-P-1708	A152750	Piece, filler, lower	4
43	1-P-1778	B8790	Pin, accelerator, assembly	10
44	1-P-1889	A9275	Pin, back plate latch	8
45	1-P-1891	A13581	Pin, back plate latch lock	4

SET, SPARE PARTS, BAM-50, M2, BASE, BASIC GUN (CONT'D)

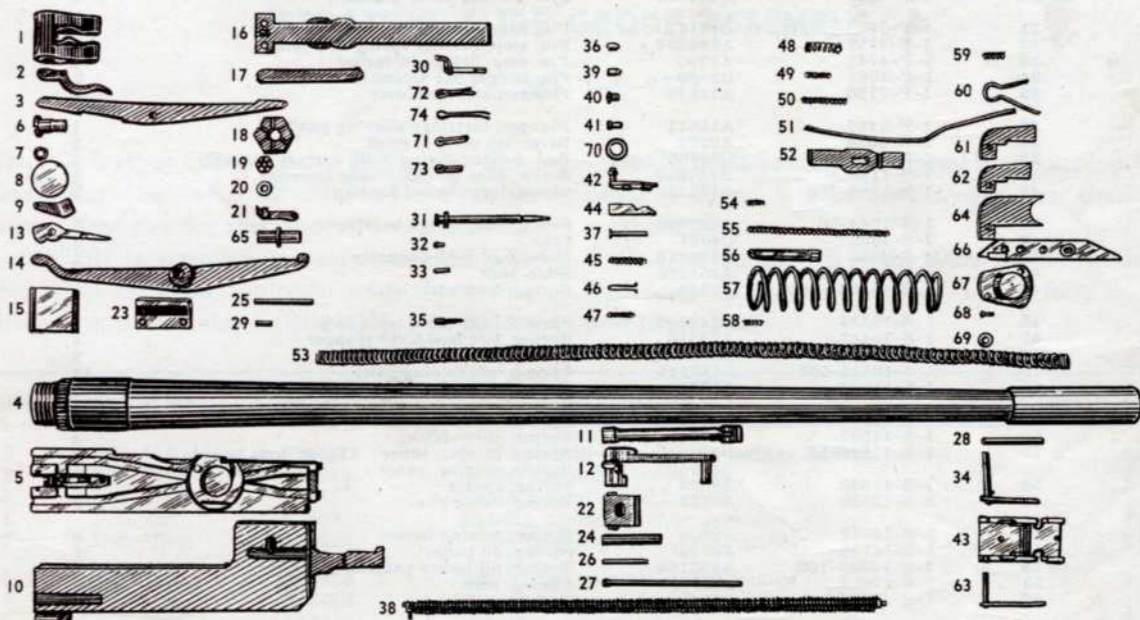
ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
46	1-P-1987	B8962	Pin, belt feed pawl, assembly	12
47	1-P-2008-50	B7160030	Pin, belt holding pawl, assembly	10
48	1-P-2050	B8784	Pin, breech lock assembly	12
49	1-P-2232	A13612	Pin, cartridge aligning pawl	6
50	1-P-2317	B147762	Pin, cocking lever, assembly	9
51	1-P-2522	A9271	Pin, cover	4
52	1-P-2885	B17171	Pin, firing 1/2	12
53	1-P-4095	A152854	Pin, lower filler piece	6
54	1-P-4759	A152898	X Pin, stop, driving spring rod collar	6
55	1-P-4781	A9382	X Pin, stop, firing pin spring	6
56	1-P-4967	B8683	Pin, trigger bar, assembly	6
57	1-P-6684	C64311	Plate, back, with horizontal buffer assembly	4
58	1-P-9045	A152839	Plunger, adjusting screw	7
59	1-P-9156	A13515	Plunger, belt feed lever	12
60	1-P-9266	A13611	X Plunger, cartridge aligning pawl	6
61	1-R-3560	A9283	X Rivet, breech lock depressor	7
62	1-R-4054	A9292	X Rivet, top plate bracket	11
63	1-R-4991	C64304	Rod, driving, spring assembly	7
64	1-R-4993	C64305	Rod, driving spring, with springs, assembly	25
65	1-R-4998	B8763	X Rod, oil buffer piston, assembly	7
66	1-S-303	A152834	Screw, adjusting	6
67	1-S-1125	B147888	Screw, filler oil buffer tube, assembly	12
68	1-S-1186-100	A153192	Screw, front barrel bearing	9
69	1-S-1544-10	A152829	Screw, lock, breech bearing	10
70	1-S-1760	A9360	X Screw, oil buffer relief valve	7
71	1-S-4380	C4067	Sear	9
72	1-S-7236-20	B8964	Shaft, cover latch assembly	4
73	1-S-7277	B8951A-M	X Shim, trunnion block	2
74	1-S-8958	B261110	Slide, feed, belt, assembly	6
75	1-S-9047-100	A351220	Slide, sear	9
76	1-S-10209	A9300	Spring, adjusting screw plunger	7
77	1-S-10334	A9356	Spring, back plate latch	3
78	1-S-10339	B243607	Spring, back plate latch lock	6
79	1-S-10482	A13516	Spring, belt feed lever plunger	12
80	1-S-10491	A9351	Spring, belt feed pawl	25
81	1-S-10511-100	A153146	Spring, belt holding pawl	30
82	1-S-11002	A13613	X Spring, cartridge aligning pawl	6
83	1-S-11575	A13520	Spring, cover detent pawl	4
84	1-S-11586	B9741	Spring, cover extractor	15
85	1-S-11597	B8931	Spring, cover latch	8
86	1-S-11818	B147510	X Spring, driving, inner	10
87	1-S-11819	B147509	X Spring, driving, outer	10
88	1-S-11860	A9523	Spring, ejector	16
89	1-S-12550	A9353	X Spring, firing pin	30
90	1-S-14072	A8908	Spring, locking barrel	9

SET, SPARE PARTS, BAM-50, M2, BASE, BASIC GUN (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
91	1-S-14785	B9832	Spring, oil buffer	10
92	1-S-14800-100	A153163	Spring, oil buffer packing gland	12
93	1-S-14805	A9393	Spring, oil buffer relief valve	7
94	1-S-17610	A9524	Spring, sear	20
95	1-S-18296	B8943	Spring, switch	9
96	1-S-19105	A13566	Spring, trunnion block lock	4
97	1-S-21037	A13539	Stop, cartridge, front	7
98	1-S-21039	A13540	Stop, cartridge, rear	3
99	1-S-21039-50	C77408	X Stop, cartridge, rear, right hand	4
100	1-S-21039	C77409	X Stop, cartridge, rear, left hand assembly	4
101	1-S-21573	B8788	Stop, sear, assembly	12
102	1-S-22000	A13541	Stripper, link	3
103	1-S-22240	A13424	Stud, bolt	7
104	1-S-22253	A13529	Stud, bolt, switch	2
105	1-S-23261	B147461	Switch	7
106	1-S-23250	C4062	Switch, bolt	7
107	1-V-460	B8969A	X Valve, oil buffer piston or	4
	1-V-461	B8969	X Valve, oil buffer piston assembly	4
108	1-V-470	A9528	X Valve, relief, oil buffer	3
109	1-W-825	A13545	Washer, cover latch shaft	3
110	1-W-2850	A153161	X Washer, oil buffer packing gland	12
111	42-P-5440	BFASI-BE	Pin, cotter, cover detent pawl	40
112	42-P-5520	BFAXI-CE	Pin, cotter, belt feed lever pivot stud	35
113	42-P-5630	BFAXI-DD	Pin, cotter, cover pin	35
114	42-P-5670	BFAXI-DK	Pin, cotter, breech lock cam bolt	18

WEIGHT: approx. 70.0 pounds.

SET, SPARE PARTS, BAM-50, M2, SQUADRON, BASIC GUN



SET, SPARE PARTS, BAM-50, M2, SQUADRON, BASIC GUN

STOCK No. 1-S-9726

THE Squadron Spare Parts Set for BAM-50 Basic Guns is normally issued to squadrons on the basis of one set for every 40 guns maintained.

Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

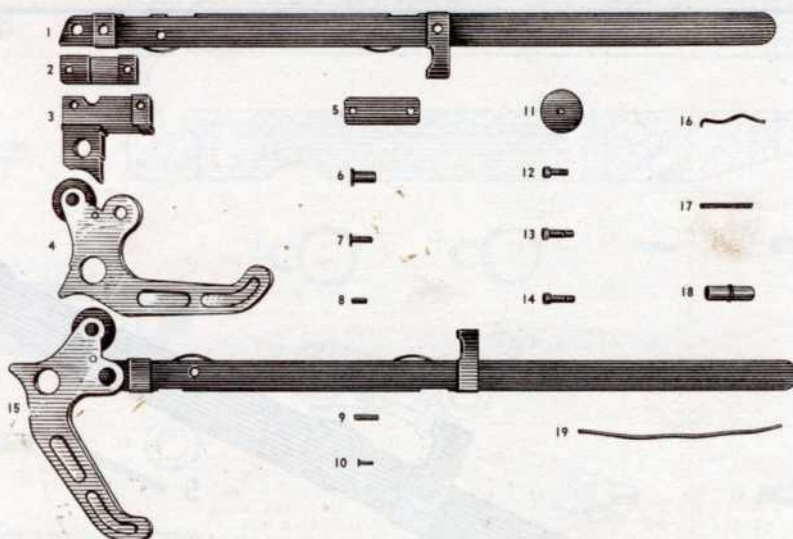
This set is made up of the items included on Ordnance Allowance List No. 15274 Rev. B and listed on the following page.

SET, SPARE PARTS, BAM-50, M2, SQUADRON, BASIC GUN (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-A-9	C8141	Accelerator	1
2	1-A-323	B8914	Arm, belt feed pawl	1
3	1-B-629-50	D257592	Bar, trigger	1
4	1-B-674	D35348A	Barrel or	10
	1-B-710	D28272	Barrel assembly	10
5	1-B-2801	B147463	Bolt, alternate feed, assembly	2
6	1-B-2828	A152938	Bolt, breech lock cam	1
7	1-C-4687	A152900	Collar, driving spring rod	1
8	1-D-1288	A152835	Disc, buffer	20
9	1-E-326	B9732	Ejector	1
10	1-E-653	C4082	Extension, barrel assembly	1
11	1-E-658	B8976	Extension, firing pin assembly	4
12	1-E-1246	B8959	Extractor, assembly	4
13	1-L-2386	B9718A	Lever, cocking	3
14	1-L-3281	C64278	Lever, feed, belt	5
15	1-L-3695	B8925	Lock, breech	2
16	1-L-3854	C145325	Lock, oil buffer tube assembly	2
17	1-L-3989	A9266	Lock, spring, oil buffer body	1
18	1-N-351-50	A152939	Nut, breech lock cam bolt	1
19	1-N-1661	A13556	Nut, switch pivot	1
20	1-P-507	A153162	Packing, oil buffer gland	2
21	1-P-1263	B8975	Pawl, cartridge aligning	1
22	1-P-1427	B8961	Pawl, feed, belt, assembly	3
23	1-P-1434-50	B261098	Pawl, holding belt	2
24	1-P-1778	B8790	Pin, accelerator assembly	2
25	1-P-1889	A9275	Pin, back plate latch	2
26	1-P-1987	B8962	Pin, belt feed pawl assembly	2
27	1-P-2008-50	B7160030	Pin, belt holding pawl assembly	3
28	1-P-2050	B8784	Pin, breech lock assembly	2
29	1-P-2232	A13612	Pin, cartridge aligning pawl	1
30	1-P-2317	B147762	Pin, cocking lever assembly	3
31	1-P-2885	B17171	Pin, firing	6
32	1-P-4759	A152898	Pin, stop, driving spring rod collar	2
33	1-P-4781	A9382	Pin, stop, firing pin spring	2
34	1-P-4967	B8683	Pin, trigger bar assembly	2
35	1-P-9156	A13515	Plunger, belt feed lever	4
36	1-P-9266	A13611	Plunger, cartridge aligning pawl	1
37	1-R-4054	A9292	Rivet, top plate bracket	2
38	1-R-4993	C64305	Rod, driving spring, with springs assembly	6
39	1-S-1125	B147888	Screw, filler oil buffer tube assembly	3
40	1-S-1186-100	A153192	Screw, front barrel bearing	2
41	1-S-1544-10	A152829	Screw, lock, breech bearing	1
42	1-S-4380	C4067	Sear	3
43	1-S-8958	B261110	Slide, feed belt, assembly	1
44	1-S-9047-100	A351220	Slide, sear	4
45	1-S-10334	A9356	Spring, back plate latch	1
46	1-S-10339	B243607	Spring, back plate latch lock	2
47	1-S-10482	A13516	Spring, belt feed lever plunger	4
48	1-S-10491	A9351	Spring, belt feed pawl	8
49	1-S-10511-100	A153146	Spring, belt holding pawl	11
50	1-S-11002	A13613	Spring, cartridge aligning pawl	2
51	1-S-11586	B9741	Spring, cover extractor	5
52	1-S-11597	B8931	Spring, cover latch	4
53	1-S-11818-10	B147510	Spring, driving, inner (These items issued in pairs)	4
		B147509	Spring, driving, outer	4
54	1-S-11860	A9523	Spring, ejector	4
55	1-S-12550	A9353	Spring, firing pin	10
56	1-S-14072	A8908	Spring, locking barrel	4
57	1-S-14785	A9832	Spring, oil buffer	2
58	1-S-14800-100	A153163	Spring, oil buffer packing gland	2
59	1-S-17610	A9524	Spring, sear	6
60	1-S-18296	B8943	Spring, switch	3
61	1-S-21037	A13539	Stop, cartridge front	2
62	1-S-21039	A13540	Stop, cartridge rear	2
63	1-S-21573	B8789	Stop, sear, assembly	2
64	1-S-22000	A13541	Stripper, link	2
65	1-S-22240	A13424	Stud, bolt	1
66	1-S-23261	B147461	Switch	1
67	1-S-23250	C4062	Switch, bolt	1
68	1-V-470	A9528	Valve, relief oil buffer	1
69	1-W-825	A13545	Washer, cover latch shaft	1
70	1-W-2850	A153161	Washer, oil buffer packing gland	2
71	42-P-5440	BFA1-1-BE	Pin, cotter, cover	15
72	42-P-5520	BFA1-1-CE	Pin, cotter, belt feed lever pivot stud	14
73	42-P-5630	BFA1-1-DD	Pin, cotter, cover pin	14
74	42-P-5670	BFA1-1-DK	Pin, cotter, breech lock cam bolt	4

WEIGHT: approx. 153.0 pounds.

SET, SPARE PARTS, BAM-50, M2, BASE, OPERATING SLIDE GROUP ASSEMBLY



SET, SPARE PARTS, BAM-50, M2, BASE, OPERATING SLIDE GROUP ASSEMBLY

STOCK No. 1-S-9722

THE Operating Slide Group Assembly Base Spare Parts Set for BAM-50 Guns in addition to the Base Set for the Basic Gun (Stock No. 1-S-9720) is supplied to activities maintaining BAM-50 guns equipped with Operating Slide Group Assemblies (Stock No. 1-S-9423).

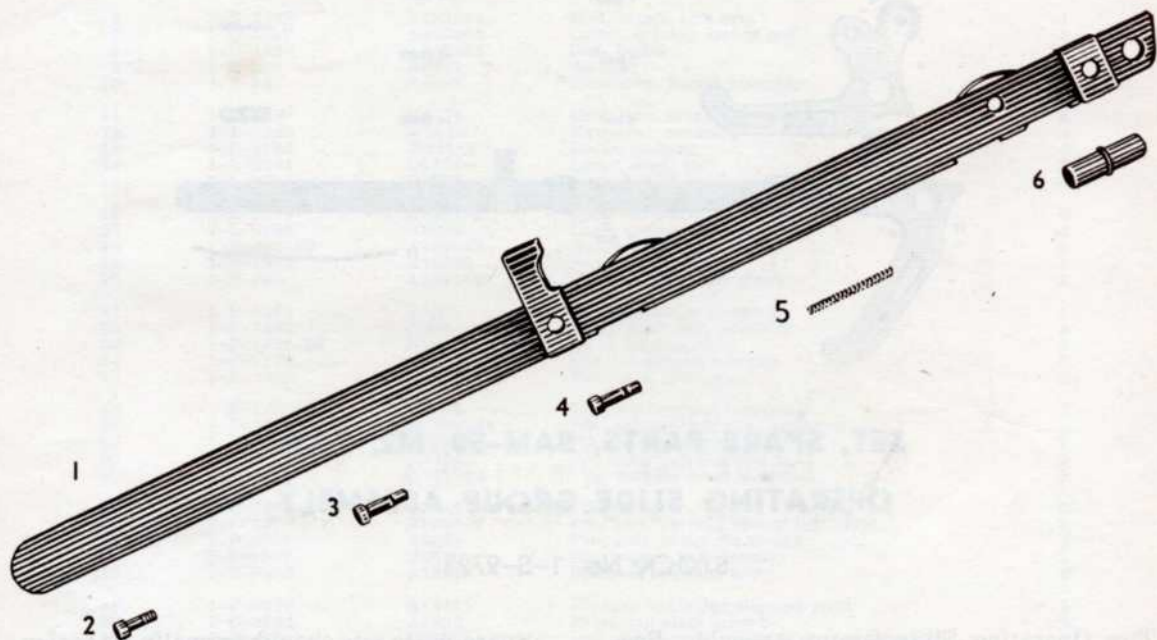
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 18084 Rev. A, and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-654	C3948	Bar, operating slide, with springs assembly	5
2	1-G-5465	A13421	Guide, operating slide, front	2
3	1-G-5480	B8745	Guide, operating slide, rear	2
4	1-H-882	B8805	Handle, operating slide assembly	2
5	1-P-1590	A13609	Piece, back, operating slide guide	2
6	1-P-3477	A13416	Pin, hinge, operating slide handle	2
7	1-P-4224	A13415	Pin, operating slide roller	2
8	1-P-4787	A13418	Pin, stop, operating slide handle	2
9	1-P-9820	A13417	Plunger, operating slide handle	2
10	1-R-3963	A152981	Rivet, bar, operating slide	8
11	1-R-5393	A13425	Roller, operating slide	2
12	1-S-1798	A13419	Screw, operating slide guide, front	36
13	1-S-1799	A13419	Screw, operating slide guide, rear, lower	20
14	1-S-1800	A13419	Screw, operating slide guide, rear, upper	20
15	1-S-9420	D28279	Slide, operating assembly	2
16	1-S-14990	A9804	Spring, operating slide	10
17	1-S-15010	A13423	Spring, operating slide plunger	4
18	1-S-22240	A13424	Stud, bolt	8
19	22-W-1055	BFWXIA	Wire, locking, .041-inch diameter x 5 3/4 inches long	1/2

WEIGHT: approx. 15.0 pounds.

SET, SPARE PARTS, BAM-50, M2, SQUADRON, OPERATING SLIDE GROUP ASSEMBLY



SET, SPARE PARTS, BAM-50, M2, SQUADRON, OPERATING SLIDE GROUP ASSEMBLY

STOCK No. 1-S-9727

THE Operating Slide Group Assembly Squadron Spare Parts Set for BAM-50 Guns, in addition to the Squadron Set for the Basic Gun (Stock No. 1-S-9726), is supplied to activities maintaining BAM-50 guns equipped with Operating Slide Group Assemblies (Stock No. 1-S-9423). The normal allowance is one

set for each 20 operating slide assemblies.

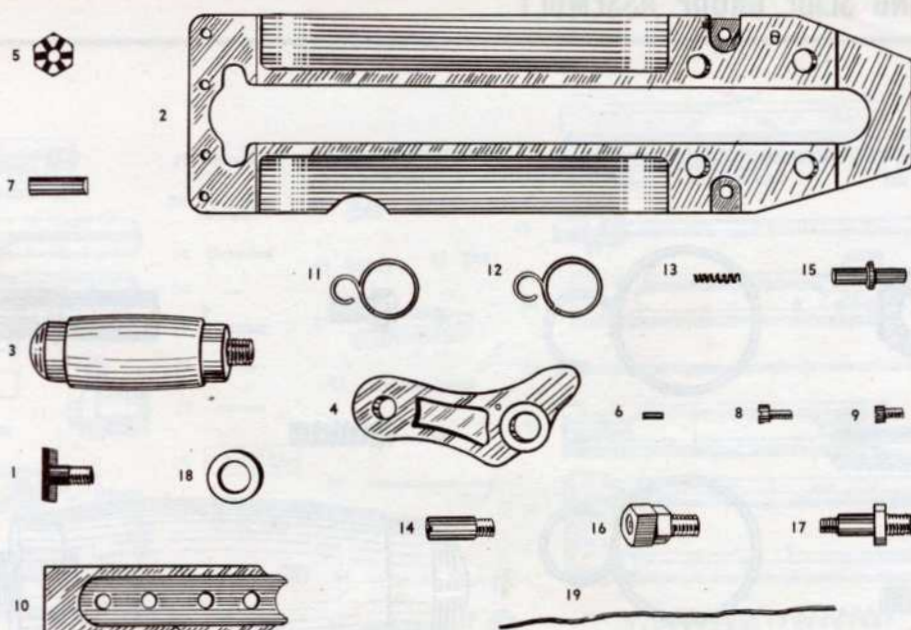
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 15237, Rev. C and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-654	C3948	Bar, operating slide, with springs assembly	1
2	1-S-1798	A13419A	Screw, operating slide guide, front	12
3	1-S-1799	A13419B	Screw, operating slide guide, rear lower	6
4	1-S-1800	A13419C	Screw, operating slide guide, rear upper	6
5	1-S-14990	A9804	Spring, operating slide	2
6	1-S-22240	A13424	Stud, bolt	2

WEIGHT: approx. 2.0 pounds.

SET, SPARE PARTS, BAM-50, M2, BASE, RETRACTING SLIDE GROUP ASSEMBLY



SET, SPARE PARTS, BAM-50, M2, BASE, RETRACTING SLIDE GROUP ASSEMBLY

STOCK No. 1-S-9724

THE Base Retracting Slide Group Assembly Spare Parts Set for BAM-50 Guns in addition to the Base Set for the Basic Gun (Stock No. 1-S-9720) is supplied to activities maintaining BAM-50 guns using the Retracting Slide Group Assembly (Stock No. 1-S-9428).

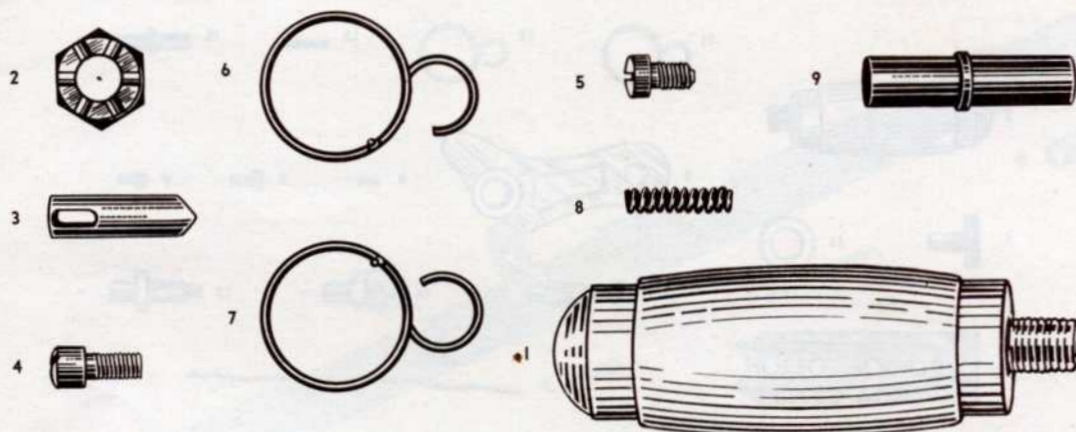
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 18079 Rev. A and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-3838	A13681	Bolt, retracting slide bracket	4
2	1-B-5747	C46029	Bracket, retracting slide	2
3	1-H-924-50	B313800	Handle, retracting slide assembly	3
4	1-L-2994	B147085	Lever, retracting slide	2
5	1-N-1488	A13686	Nut, retracting slide	6
6	1-P-4527	A13687	Pin, retracting slide plunger	6
7	1-P-9911	B8990	Plunger, retracting slide	6
8	1-S-3378	A13419D	Screw, retracting slide bracket, front	20
9	1-S-3379	A13419E	Screw, retracting slide bracket, rear	15
10	1-S-9029	B147893	Slide, retracting	2
11	1-S-17104	A13691	Spring, retracting slide lever, left hand	5
12	1-S-17105	A13692	Spring, retracting slide lever, right hand	9
13	1-S-17114	A13693	Spring, retracting slide plunger	8
14	1-S-21370	A13694	Stop, retracting slide lever	6
15	1-S-22240	A13424	Stud, bolt	8
16	1-S-22488	B8993	Stud, retracting slide	4
17	1-S-22491	B313822	Stud, retracting slide lever	4
18	1-W-3150	A13697	Washer, retracting slide lever stud	4
19	22-W-1055	BFWXIA	Wire, locking .041-inch diameter by 5¾ inches long	½ pound

WEIGHT: approx. 10.0 pounds.

SET, SPARE PARTS, BAM-50, M2, SQUADRON, RETRACTING SLIDE GROUP ASSEMBLY



SET, SPARE PARTS, BAM-50, M2, SQUADRON, RETRACTING SLIDE GROUP ASSEMBLY

STOCK No. 1-S-9728

THE Squadron Retracting Slide Group Assembly Spare Parts Set for BAM-50 guns in addition to the Squadron Set for the Basic Gun (Stock No. 1-S-9726) is supplied to squadrons maintaining BAM-50 guns using the Retractable Slide Group Assembly (Stock No. 1-S-9428). The normal allowance is one

set for each 40 retractable slide assemblies maintained.

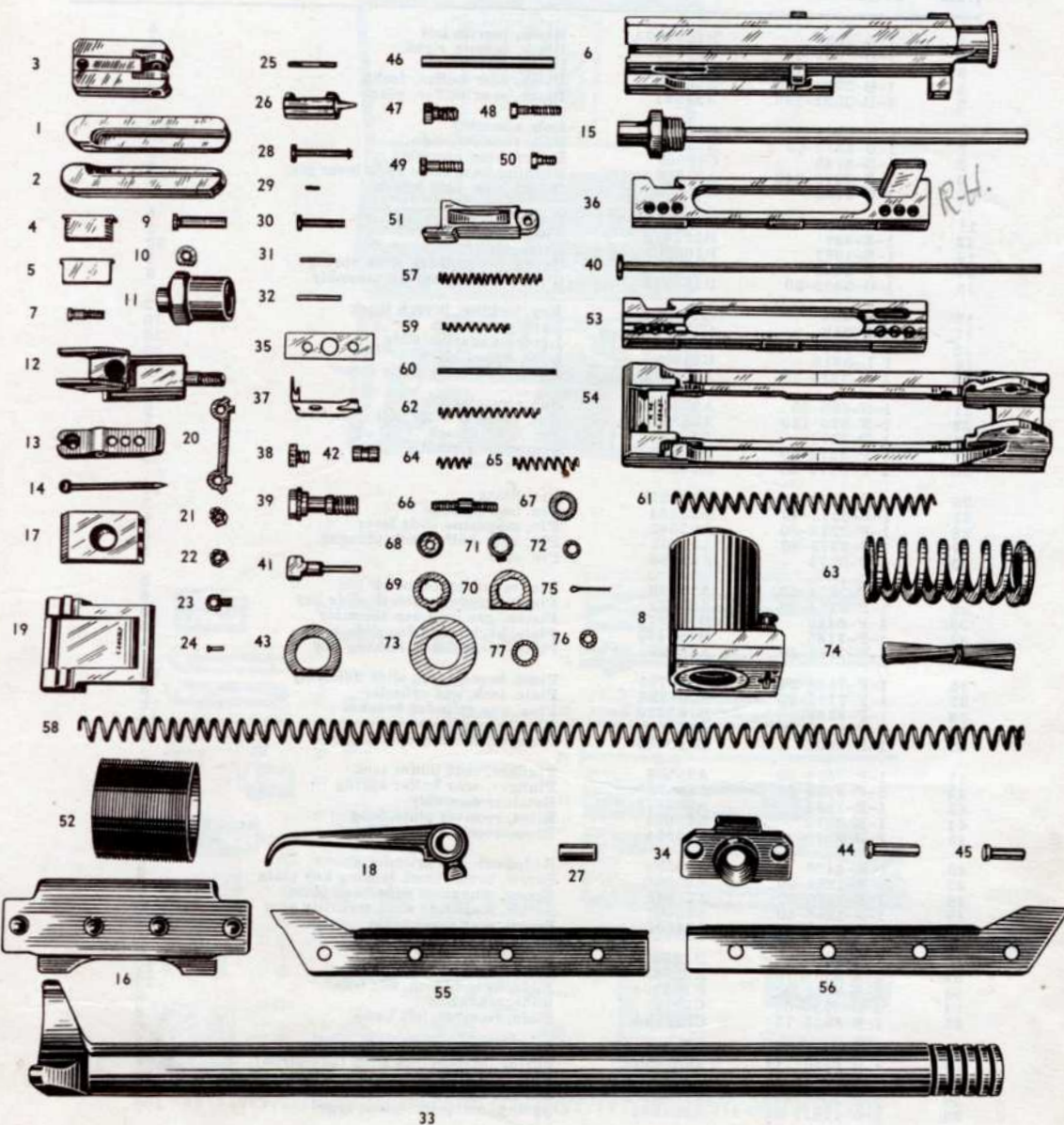
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 15276 Rev. B and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-H-924-50	B313800	Handle, retracting slide assembly	1
2	1-N-1488	A13686	Nut, retracting slide	2
3	1-P-9911	B8990	Plunger, retracting slide	1
4	1-S-3378	A13419D	Screw, retracting slide bracket, front	5
5	1-S-3379	A13419E	Screw, retracting slide bracket, rear	13
6	1-S-17104	A13691	Spring, retracting slide lever, left hand	3
7	1-S-17105	A13692	Spring, retracting slide lever, right hand	3
8	1-S-17114	A13693	Spring, retracting slide plunger	1
9	1-S-22240	A13424	Stud, bolt	1

WEIGHT: approx. 1.0 pound.

SET, SPARE PARTS, BASE, 20 MM



SET, SPARE PARTS, BASE, 20 MM

STOCK No. 1-S-9682

THE Base Spare Parts Set for 20 MM Aircraft Guns, AN-M2, Type E, is allowed certain shore activities for an operating stock of parts for machine overhaul shops.

Spare parts sets should normally be replen-

ished by drawing individual items rather than complete sets.

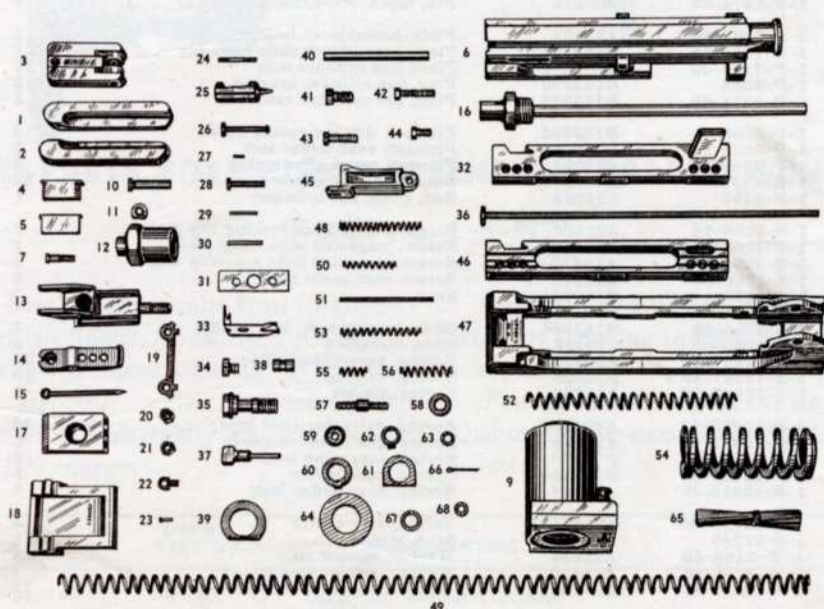
This set is made up of the items included on Ordnance Allowance List No. 20222 and listed on the following page.

SET, SPARE PARTS, BASE, 20 MM (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-2032	B163459A	Block, inertia left	5
2	1-B-2032-40	B163459B	Block, inertia right	5
3	1-B-2032-140	B163297	Block, sear	5
4	1-B-2032-180	A25550	Block, sear buffer, front	11
5	1-B-2032-190	A25551	Block, sear buffer, rear	4
6	1-B-3264	C70493	Bolt, assembly	18
7	1-B-3370-60	A25853	Bolt, receiver slide	13
8	1-B-6745	C70589	Buffer, rear assembly	5
9	1-B-7073-240	A25569	Bushing, magazine slide lever pin	6
10	1-C-4735	A25563	Collar, lock, rear buffer	9
11	1-C-7642	B163311	Cylinder, gas	5
12	1-E-427	B163475	Ejector assembly	5
13	1-E-1037	B163302	Extractor	30
14	1-G-5435	A25847	Guide, breechblock slide spring	5
15	1-G-5435-20	B163332	Guide, driving spring assembly	9
16	1-K-450	B163313	Key, locking, breech block	2
17	1-L-348	C70501	Latch, magazine	10
18	1-L-2655	B163314	Lever, magazine slide	10
19	1-L-3815	C70502	Lock, breechblock	20
20	1-L-3815-70	A207413	Lock, sear cover plate screw	20
21	1-N-620-60	A25843	Nut, ejector stud	10
22	1-N-620-120	A25854	Nut, receiver slide bolt	9
23	1-P-3273	A25552	Pin, breechblock	4
24	1-P-3273-10	A25848	Pin, ejector stud	10
25	1-P-3273-20	A25557	Pin, extractor	20
26	1-P-3273-35	B164210	Pin, firing	90
27	1-P-3273-40	A25584	Pin, locking tube	5
28	1-P-3273-50	A25585	Pin, magazine slide lever	9
29	1-P-3273-60	A25605	Pin, rear buffer lock plunger	6
30	1-P-3274	A25583	Pin, sear	8
31	1-P-3274-10	A25872	Pin, taper, breechblock pin	9
32	1-P-3274-20	A25873	Pin, taper, breechblock slide key	6
33	1-P-6440	B163818	Piston, gas cylinder assembly	10
34	1-P-7185	B163460	Plate, back magazine slide	10
35	1-P-7185-20	A25590	Plate, breechblock locking key	4
36	1-P-7185-25	B163791	Plate, breechblock slide assembly	20
37	1-P-7185-30	A207290	Plate, lock, gas cylinder	8
38	1-P-8388	B163320	Plug, gas cylinder bracket	6
39	1-P-8388-40	B163322	Plug, gas cylinder vent	10
40	1-P-9590	B163335	Plunger, driving spring guide	6
41	1-P-9590-50	A25564	Plunger, rear buffer lock	5
42	1-P-9590-60	A25591	Plunger, sear buffer spring	5
43	1-R-1391	A206772	Retainer assembly	60
44	1-R-3510	A25614	Rivet, receiver plate, long	20
45	1-R-3510-40	A25594	Rivet, receiver plate, short	4
46	1-R-4430	A25598	Rod, push, gas cylinder sleeve	6
47	1-S-1266-20	A25606	Screw, breechblock locking key plate	6
48	1-S-1266-30	A25845	Screw, magazine slide back plate	6
49	1-S-1266-40	A25607	Screw, magazine slide securing arm	9
50	1-S-1266-50	A25608	Screw, sear cover plate	24
51	1-S-4515	B163301	Sear	6
52	1-S-8688-70	A25565	Sleeve, threaded rear buffer	10
53	1-S-8955-20	B163304	Slide, breechblock, left hand	20
54	1-S-8955-60	C70497	Slide, magazine	5
55	1-S-8955-75	C70579A	Slide, receiver, left hand	8
56	1-S-8955-90	C70579B	Slide, receiver, right hand	8
57	1-S-12837-35	A207523	Spring, breechblock slide (preferred)	60
58	1-S-12837-40	A25596	Spring, driving	60
59	1-S-12837-50	A25846	Spring, ejector	7
60	1-S-12837-62	A207524	Spring, extractor (strut type)	100
61	1-S-12837-70	A25599	Spring, gas cylinder sleeve	12
62	1-S-12837-90	A25600	Spring, magazine latch	8
63	1-S-12838-20	B163306	Spring, rear buffer	9
64	1-S-12838-30	A25566	Spring, rear buffer lock	4
65	1-S-12838-60	A25601	Spring, sear buffer	6
66	1-S-22280	A25849	Stud, ejector	5
67	1-W-2155-30	A25844	Washer, ejector stud	40
68	1-W-2155-40	A25870	Washer, ejector stud nut	20
69	1-W-2155-47	A207291	Washer, gas cylinder lock	6
70	1-W-2155-50	A25611	Washer, lock, gas cylinder guide	90
71	1-W-2155-60	A25613	Washer, lock, magazine slide arm screw	20
72	1-W-2155-65	A206912	Washer, lock, sear cover plate screw	20
73	1-W-2155-80	A25567	Washer, rear buffer	5
74	22-W-1055	BFAX1A	Wire, locking, .041-inch diameter	1 1/4 pounds
75	42-P-5450	BFAX1BQ	Pin, cotter, split S, 1/16 x 1 inch	70
76	43-W-5182	BEEX1G	Washer, lock 1/4 x 3/32 x 1/16 inch regular	30
77	43-W-5836	BEEX2K	Washer, lock 3/8 x 1/8 x 1/16 inch light	12

WEIGHT (boxed): approx. 312.0 pounds.

SET, SPARE PARTS, 20 MM, SQUADRON



SET, SPARE PARTS, 20 MM, SQUADRON

STOCK No. 1-S-9683

THE Squadron Spare Parts Set for 20 MM Aircraft Gun AN-M2, Type E is supplied to operating activities for maintenance purposes. The normal allowance is one set for 40 guns.

Spare parts sets should normally be replen-

ished by drawing individual items rather than complete sets.

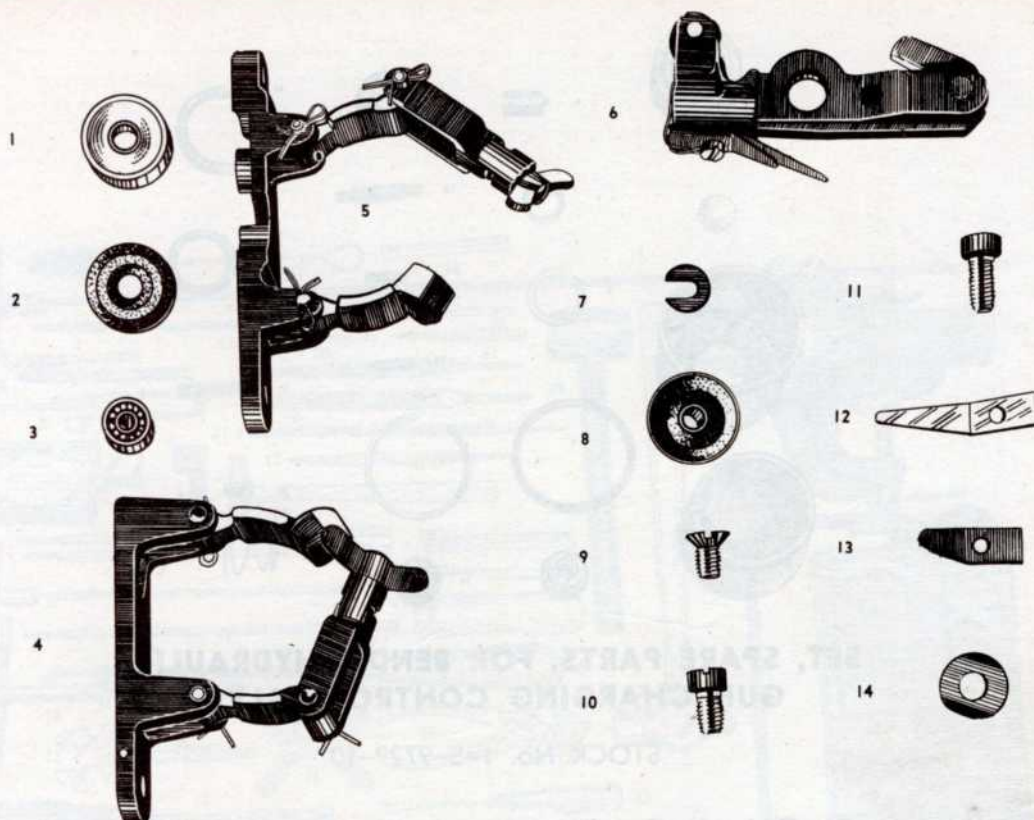
This set is made up of the items included on Ordnance Allowance List No. 20213 and listed on the following page.

SET, SPARE PARTS, 20 MM, SQUADRON (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-2032	B163459A	Block, inertia, left	1
2	1-B-2032-40	B163459B	Block, inertia, right	1
3	1-B-2032-140	B163297	Block, sear	1
4	1-B-2032-180	A25550	Block, sear buffer, front	4
5	1-B-2032-190	A25551	Block, sear buffer, rear	2
6	1-B-3364	C70493	Bolt, assembly	3
7	1-B-3370-60	A25853	Bolt, receiver slide	6
8	1-B-5054-35		Box, squadron spare parts, empty 20mm	1
9	1-B-6745	C70589	Buffer, rear assembly	1
10	1-B-7703-240	A25569	Bushing, magazine slide lever pin	1
11	1-C-4735	A25563	Collar, lock, rear buffer	1
12	1-C-7642	B16331	Cylinder, gas	1
13	1-E-427	B163473	Ejector assembly	2
14	1-E-1037	B163302	Extractor	8
15	1-G-5435	A25847	Guide, breechblock slide spring	1
16	1-G-5435-20	B163332	Guide, driving spring assembly	1
17	1-L-348	C70501	Latch, magazine	1
18	1-L-348-15	C70502	Lock, breechblock	7
19	1-L-3815-70	A207413	Lock, sear cover plate screw	7
20	1-N-620-60	A25843	Nut, ejector stud	1
21	1-N-620-120	A25854	Nut, receiver slide bolt	6
22	1-P-3273	A25552	Pin, breechblock	1
23	1-P-3273-10	A25848	Pin, ejector stud	1
24	1-P-3273-20	A25557	Pin, extractor	7
25	1-P-3273-30	B164210	Pin, firing	26
26	1-P-3273-50	A25585	Pin, magazine slide lever	1
27	1-P-3273-60	A25605	Pin, rear buffer lock plunger	1
28	1-P-3274	A25583	Pin, sear	2
29	1-P-3274-10	A25872	Pin, taper, breechblock pin	1
30	1-P-3274-20	A25873	Pin, taper, breechblock slide key	1
31	1-P-7185-20	A25590	Plate, breechblock locking key	1
32	1-P-7185-25	B163791	Plate, breechblock slide assembly	7
33	1-P-7185-30	A207290	Plate, gas cylinder lock	10
34	1-P-8388	B163320	Plug, gas cylinder bracket	2
35	1-P-8388-40	B163322	Plug, gas cylinder vent	2
36	1-P-9590	B163335	Plunger, driving spring guide	3
37	1-P-9590-50	A25564	Plunger, rear buffer lock	1
38	1-P-9590-60	A25591	Plunger, sear buffer spring	1
39	1-R-1391	A206772	Retainer, assembly	20
40	1-R-4430	A25598	Rod, push, gas cylinder	1
41	1-S-1266-20	A25606	Screw, breechblock locking key plate	1
42	1-S-1266-30	A25845	Screw, magazine slide back plate	1
43	1-S-1266-40	A25607	Screw, magazine slide securing arm	4
44	1-S-1266-50	A25608	Screw, sear cover plate	8
45	1-S-4515	B163301	Sear	2
46	1-S-8955-20	B163304	Slide, breechblock, left hand	7
47	1-S-8955-60	C70497	Slide, magazine	1
48	1-S-12837-30	A207523	Spring, breechblock slide	20
49	1-S-12837-40	A25596	Spring, driving	20
50	1-S-12837-50	A25846	Spring, ejector	4
51	1-S-12837-60	A207524	Spring, extractor (coil type)	23
52	1-S-12837-70	A25599	Spring, gas cylinder sleeve	3
53	1-S-12837-90	A25600	Spring, magazine latch	4
54	1-S-12838-20	B163306	Spring, rear buffer	1
55	1-S-12838-30	A25566	Spring, rear buffer lock	1
56	1-S-12838-60	A25601	Spring, sear buffer	2
57	1-S-22280	A25849	Stud, ejector	1
58	1-W-2155-30	A25844	Washer, ejector stud	13
59	1-W-2155-40	A25870	Washer, ejector stud nut	7
60	1-W-2155-47	A207291	Washer, gas cylinder lock	12
61	1-W-2155-50	A25611	Washer, lock, gas cylinder guide	16
62	1-W-2155-60	A25613	Washer, lock, magazine slide arm screw	7
63	1-W-2155-65	A206912	Washer, lock, sear cover plate screw	7
64	1-W-2155-80	A25567	Washer, rear buffer	1
65	22-W-1055	BFWX1A	Wire, locking, 0.41-inch diameter	1/4 pound
66	42-P-5450	BFX1BQ	Pin, cotter, split 1/16 x 1	20
67	43-W-5836	BFCX2K	Washer, lock, 3/8 x 1/4 x 1/16, light	3
68	43-W-5812	BECX1G	Washer, lock, 1/4 x 3/32 x 1/16 regular	7

WEIGHT (boxed): approx. 90.0 pounds.

SET, SPARE PARTS, FOR CALIBER .50 BENDIX HYDRAULIC GUN CHARGER



SET, SPARE PARTS, FOR CALIBER .50 BENDIX HYDRAULIC GUN CHARGER

STOCK No. 1-S-9729

Spare Parts Sets for Hydraulic Gun Chargers (Bendix Part No. 76862, Stock No. 1-C-3412-95) will be allowed under Column (B) of the appropriate airplane model allowance list. This allowance will normally be established to maintain 100 chargers.

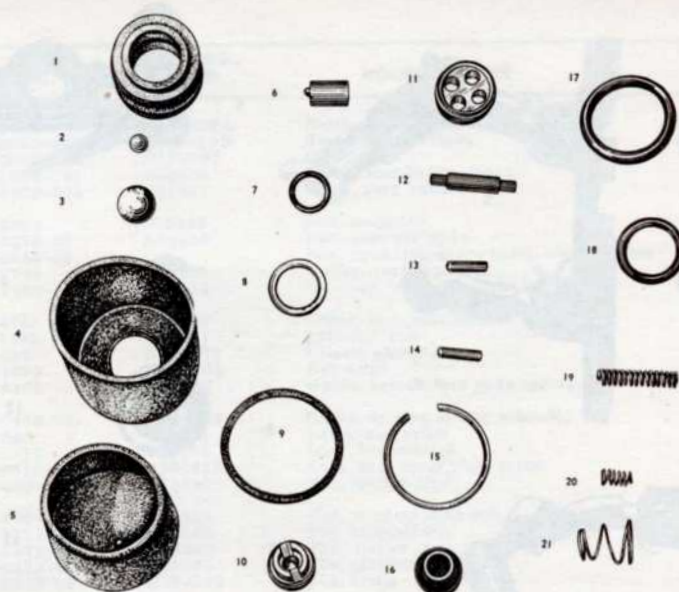
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 19564 and listed below.

ITEM	STOCK NO.	BENDIX PART NO.	NOMENCLATURE	ALLOWANCE
1	1-A-34-100	81593	Adapter, piston (female)	8
2	1-A-34-110	81594	Adapter, piston (male)	8
3	1-B-1125	78013	Bearing	16
4	1-B-5340	78031	Bracket assembly, front	6
5	1-B-5343	78004	Bracket assembly, rear	6
6	1-L-2300	78005	Lever assembly	8
7	1-L-3701	78058	Lock, retainer	12
8	1-P-92	81595	Packing "V" piston	80
9	1-S-770	78061	Screw, front bracket hold	12
10	1-S-773	78062	Screw, front and rear bracket hold	24
11	1-S-776	78063	Screw, rear bracket hold	12
12	1-S-10997	81597	Spring, primary	8
13	1-S-10999	79576	Spring, secondary	8
14	1-W-555	81596	Washer, spring	8

PUBLICATION: O.C.L. V-26-43.

SET, SPARE PARTS, FOR BENDIX HYDRAULIC GUN CHARGING CONTROL VALVE



SET, SPARE PARTS, FOR BENDIX HYDRAULIC GUN CHARGING CONTROL VALVE

STOCK No. 1-S-9729-10

SPARE Parts Sets for Hydraulic Gun Charging Valve (Bendix Part No. 76861, Stock No. 1-V-430) will be allowed under Column (B) of the appropriate airplane model allowance list. The allowance of spare parts sets will normally be established to maintain 50 valves.

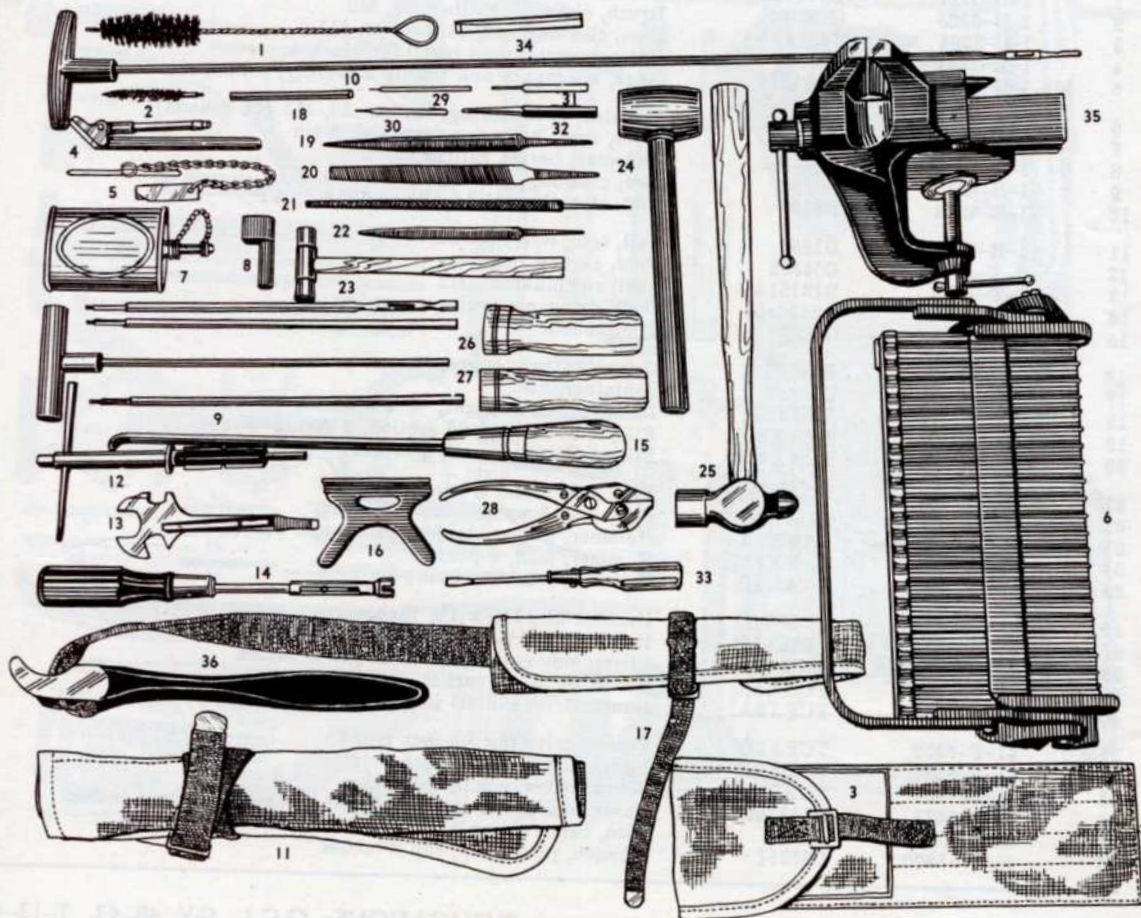
Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 19564 and listed below.

ITEM	STOCK NO.	BENDIX PART NO.	NOMENCLATURE	ALLOWANCE
1	1-A-104-200	81592	Adapter, seal	2
2	1-B-195	97-S-5	Ball, inlet $\frac{3}{8}$ diameter	2
3	1-B-200	97-S-11	Ball, outlet $\frac{1}{4}$ diameter	2
4	1-B-4677	81598	Boot, control valve	4
5	1-B-4678	81599	Boot, end cap	4
6	1-D-433	78129	Detent	2
7	1-Q-2035	78120	Gasket cap screw	10
8	1-G-2037	174-S-7	Gasket, detent cap screw	4
9	1-G-2040	78138	Gasket, end cap	10
10	1-P-1743	78601	Pilot, inlet check	2
11	1-P-1744	78153	Pilot, outlet check	2
12	1-P-4998	78117	Pin, handle	2
13	1-P-4998-100	78136	Pin, inlet check	2
14	1-P-4998-150	78128	Pin, outlet check	2
15	1-R-3440	78119	Ring, snap	4
16	1-S-4052	78110	Screw, cap plunger	4
17	1-S-4238	81590	Seal, "O" ring, large	20
18	1-S-4240	81589	Seal, "O" ring, small	40
19	1-S-19175	78145	Spring, detent	2
20	1-S-19176	79602	Spring, inlet check	2
21	1-S-19177	78152	Spring, outlet check	2

PUBLICATION: O.C.L. V-26-43.

TOOL AND ACCESSORY SET, BAM-30, M2



TOOL AND ACCESSORY SET, BAM-30, M2

STOCK No. 1-T-1792-200

THE Tool And Accessory Set for BAM-30 Guns will be issued to activities tending or supporting aircraft on the basis of one set for every 40 guns.

The set is made up of items formerly supplied, with the following sets, which have been cancelled :

Chest, Armorer's, Tool with Contents,

Stock No. 1-C-3494, Ordnance Allowance List 15676.

Accessory Set, Squadron, Caliber .30, Stock No. 1-A-13, Ordnance Allowance List 15286B.

Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

TOOL AND ACCESSORY SET, BAM-30, M2 (CONT'D)

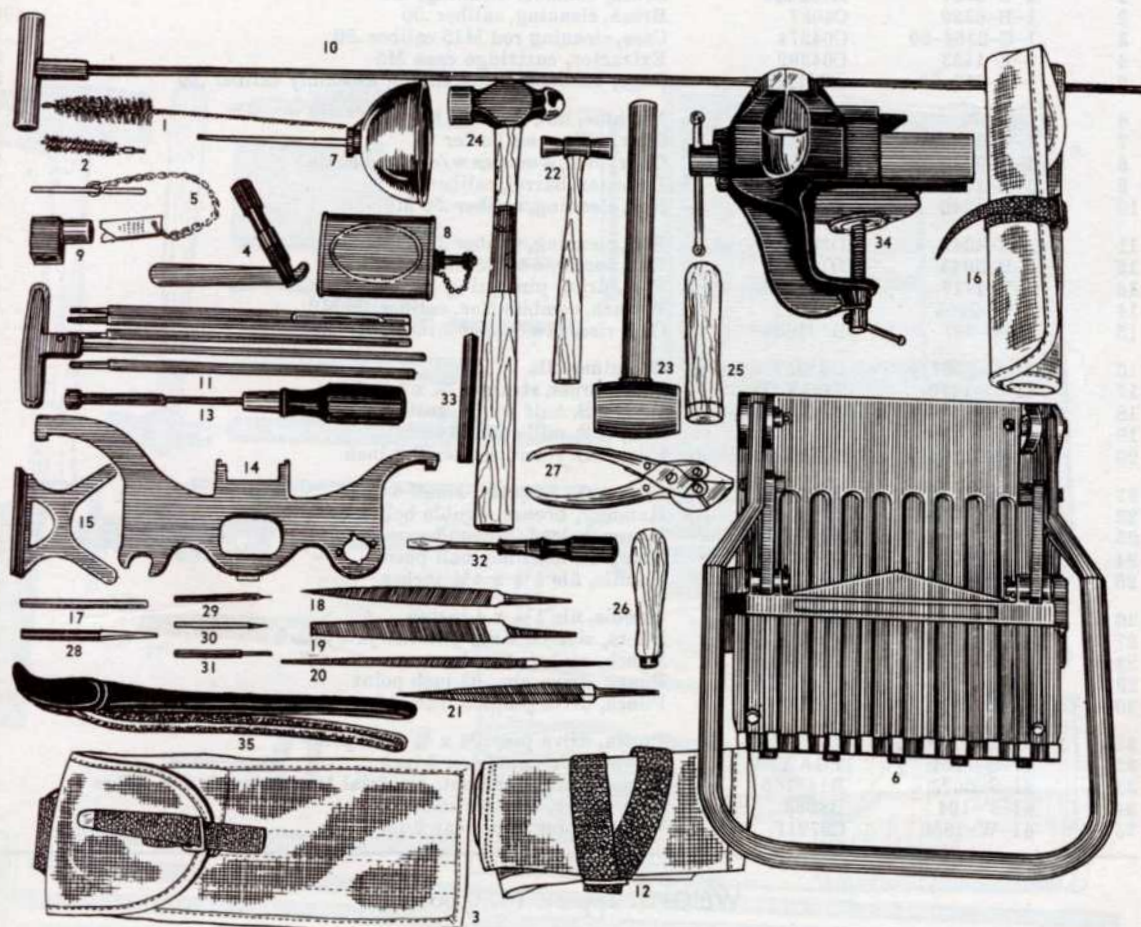
This set is made up of the items included on Ordnance Allowance List No. 20196 and listed below.

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-6327	B108828	Brush, chamber cleaning, M6	10
2	1-B-6328	C4035	Brush, cleaning, caliber .30, M2	400
3	1-C-2364	C6573	Case, cleaning rod, caliber .30, M1	7
4	1-E-1131	C3854	Extractor, ruptured cartridge Mark 4	5
5	1-G-117-25	A351216	Gage, headspace and timing assembly, caliber .30	5
6	1-M-62	D35341	Machine, link loading, caliber .30, M3 (20 rounds)	1
7	1-O-99	C59737	Oiler, oval, 3 ounce w/cap and chain	5
8	1-R-1095	B147001	Reflector, barrel, caliber .30	5
9	1-R-4232	D8237	Rod, cleaning, jointed, caliber .30, M1	7
10	1-R-4234	D8398	Rod, cleaning, solid, caliber .30, M2, A1	4
11	1-R-5043	D1888	Roll, tool, w/o contents	5
12	1-T-1643	C64302	Tool, carbon removing	5
13	1-T-1653	B131314	Tool, combination, M2	5
14	1-T-1717	B243646	Tool, firing pin spring removing	7
15	1-T-1718	C3856	Tool, release	5
16	41-C-397	B101630	Cap, vise, jaw, copper 3 inch pr.	1
17	41-C-2567	D35357	Container, file	1
18	41-D-1470	TCGX2D	Drift, brass, straight, $\frac{3}{8}$ x 4 inches	5
19	41-F-939	TEAX2CB	File, A.S. half round section, 6 inches	1
20	41-F-1179	TEAX1CK	File, A.S. mill, small, 6 inches	1
21	41-F-1181	TEAX2DK	File, A.S. round section 8 inches	1
22	41-F-1572	TEAX2CP	File, A.S. 3 square, small 6 inches	1
23	41-H-165	TAFX2A	Hammer, bronze, double bell face, 3 ounces	5
24	41-H-500	TAFX3A	Hammer, lead, 2 pounds	1
25	41-H-521	TAAX1B	Hammer, machine, ball peen	1
26	41-H-1116	TEHX1C	Handle, file, $1\frac{1}{4}$ x $4\frac{1}{4}$ inches	1
27	41-H-1117	TEHX1B	Handle, file $1\frac{1}{2}$ x 4 inches	2
28	41-P-1974	THBX1A	Pliers, side cutting, parallel jaw 6 inches	5
29	41-P-3184	TCDX1A	Punch, center, 4 inches	5
30	41-P-3350	TCFX2A	Punch, drive pin .03 inch point	6
31	41-P-3352	TCFX2C	Punch, drive pin .05 inch point	6
32	41-P-3359	TCFX2F	Punch, drive pin .08 inch point	6
33	41-S-1101	TGAX1A	Screw driver, common 3 inches	6
34	41-S-5673	B147160	Stone, sharp, unmount, artificial tri-angular $\frac{7}{16}$ x 4 inches	5
35	41-V-104	B8863	Vise, bench clamp 3 inches	1
36	41-W-1850	C67217	Wrench, pipe strap, cap 2 inches	1

WEIGHT: approx. 82.0 pounds.

PUBLICATIONS: O.C.L. GV 48-43, T-13-42, V-26-43.

TOOL AND ACCESSORY SET, BAM-50, M2



TOOL AND ACCESSORY SET, BAM-50, M2

STOCK No. 1-T-1792-250

THE Tool and Accessory Set for BAM-50 guns will be allowed to activities tending or supporting aircraft on the basis of one set for every 40 guns.

The set is made up of items formerly supplied with the following sets which have been cancelled:

Chest, Armorer's, Tool with Contents, Stock No. 1-C-3494 Ordnance Allowance List No. 15676.

Accessory Set, Squadron Caliber .50 Stock No. 1-A-14, Ordnance Allowance List No. 15285B (Reference NavOrd O.C.L. GV48-43).

Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

This set is made up of the items included on Ordnance Allowance List No. 20194, Rev. A and listed on the following page.

TOOL AND ACCESSORY SET, BAM-50, M2 (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-6327	B108828	Brush, chamber cleaning, M6	10
2	1-B-6329	C4037	Brush, cleaning, caliber .50	400
3	1-C-2364-20	C64274	Case, cleaning rod M15 caliber .50	7
4	1-E-1133	C64392	Extractor, cartridge case M5	5
5	1-G-117-50	A351217	Gage, headspace and timing assembly caliber .50	5
6	1-M-71	D8794	Machine, link loading, M2	1
7	1-O-97	B8514	Oiler, filling, oil buffer	5
8	1-O-99	C59737	Oiler, oval, 3 ounces w/cap and chain	5
9	1-R-1098	C64255	Reflector, barrel, caliber .50	5
10	1-R-4240	D35442	Rod, cleaning, caliber .50 M6	4
11	1-R-4241	D35441	Rod, cleaning, caliber .50 M7	7
12	1-R-5043	D1888	Roll, tool w/o contents	5
13	1-T-1717	B243646	Tool, firing pin spring removing	5
14	1-W-9955	D28242	Wrench, combination, caliber .50 M2	5
15	41-C-397	B101630	Cap, vise, jaw copper 3-inch pair	1
16	41-C-2567	D35357	Container, file	1
17	41-D-1470	TCGX2D	Drift, brass, straight $\frac{3}{8}$ x 4 inches	5
18	41-F-939	TEAX2CB	File, A.S. half round, sectional 6-inch	1
19	41-F-1179	TEAX1CK	File, A.S. mill small 6-inch	1
20	41-F-1181	TEAX2DK	File, A.S. round sectional 8-inch	1
21	41-F-1572	TEAX2CP	File, A.X. 3-square, small 6-inch	1
22	41-H-165	TAFX2A	Hammer, bronze, double bell face 3-ounce	5
23	41-H-500	TAFX3A	Hammer, lead, 2-pound	1
24	41-H-521	TAAX1B	Hammer, machine, ball peen	1
25	41-H-116	TEHX1C	Handle, file $1\frac{1}{4}$ x $4\frac{1}{4}$ inches	1
26	41-H-117	TEHX1B	Handle, file $1\frac{1}{8}$ x 4 inches	2
27	41-P-1974	THBX1A	Pliers, side cutting, parallel jaw 6-inch	5
28	41-P-3184	TODX1A	Punch, center, 4-inch	5
29	41-P-3350	TCFX2A	Punch, drive pin, .03-inch point	6
30	41-P-3352	TCFX2C	Punch, drive pin, .05-inch point	6
31	41-P-3359	TCFX2F	Punch, drive pin, .08 x $\frac{3}{4}$ inch point	6
32	41-S-1101	TGAX1A	Screw driver, common 3-inch	6
33	41-S-5673	B147160	Stone, sharp, unmount, artificial triangular $\frac{7}{8}$ x 4 inches	5
34	41-V-104	B8863	Vise, bench, clamp 3-inch	1
35	41-W-1850	C67217	Wrench, pipe strap, cap 2-inch	1

WEIGHT: approx. 102.0 pounds.

STOCK No. 1-T-1792

Spare parts sets should normally be replenished by drawing individual items rather than complete sets.

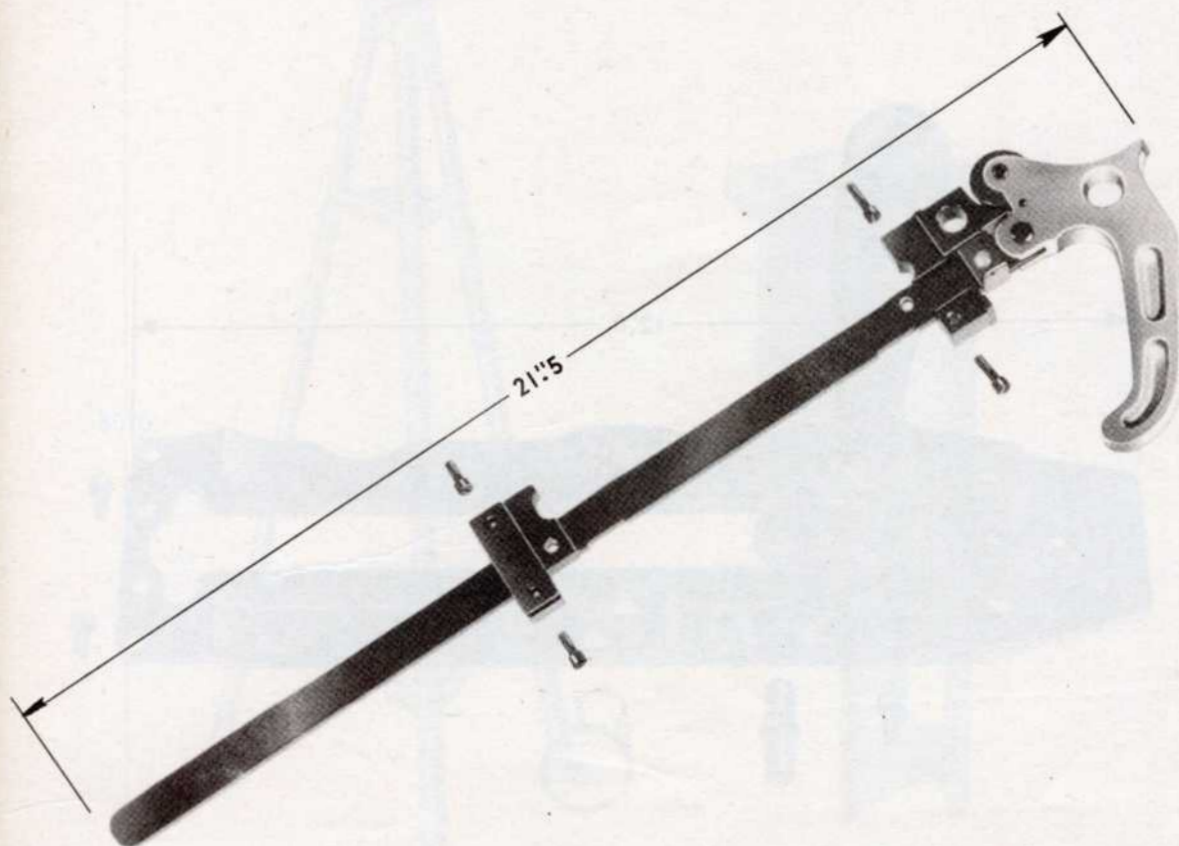
This set is made up of the items included on Ordnance Allowance List No. 20464 and listed on the following page.

TOOL AND ACCESSORY SET, FOR AG 20 MM, AN-M2 (CONT'D)

ITEM	STOCK NO.	ARMY DWG. NUMBER	NOMENCLATURE	ALLOWANCE
1	1-B-6292	B163592	Brush, bore, M25, 20 mm	30
2	1-C-5864-350	SK124147	Cover, muzzle, plastic	100
3	1-C-3412-35	B164003	Charger, hand assembly, M-1	2
4	41-H-473	TAGX2A	Hammer, hide face, 2 pounds	2
5	41-H-521	TAAAX1B	Hammer, machinist, ball peen	2
6	1-M-50	D69370	Machine, link loading, 20 mm	2
7	1-O-99-75	C59736	Oiler, rectangular, 12 ounce with cap and chain	2
8	41-P-1974	THBX1A	Plier, side-cut parallel jaw 6-inch	2
9	41-P-3350	TCFX2A	Punch, drive pin, .03-inch point	2
10	41-P-3359	TCFX2F7	Punch, drive pin, .08-inch point	4
11	41-P-3562	TCFX2H	Punch, drive pin, .12-inch point	4
12	41-P-3564	TCFX1E	Punch, drive pin, $\frac{3}{32}$ -inch point	4
13	1-R-5016	D5274	Roll, tool, M6 w/o contents	2
14	41-S-1101	TGAX1A	Screwdriver, common, 3-inch blade	2
15	1-R-4229	C70631	Rod, cleaning, M13, 20 mm	4
16	41-S-5673	B147460	Stone, sharpening, fine triangular 4 x $\frac{7}{16}$ inches	2
17	1-T-1627	SK124100	Tool, assembling, breechblock	3
18	1-T-1630-60	B163502	Tool, breechblock, unlocking	2
19	1-T-1630-20	B163497	Tool, driving spring assembling	2
20	1-T-1630-30	B163500	Tool, sear block assembling	2
21	1-T-1630-50	A25917	Tool, sear block spring retaining	2
22	41-W-1001-40	TKKX1H	Wrench, engineer's double head $\frac{7}{16}$ -inch and $\frac{9}{16}$ -inch opening	2
23	41-W-1010-40	TKKX2H	Wrench, engineer's double head $\frac{5}{8}$ -inch and $\frac{7}{8}$ -inch opening	2
24	41-W-1012	TKKX3C	Wrench, engineer's double head $\frac{3}{4}$ -inch and $1\frac{5}{16}$ -inch opening	2
25	1-W-9885-40	C70605	Wrench, rear buffer	2
26	1-W-9882	A206718	Wrench, single head .717-inch opening	2
27	41-W-2625	A206913	Wrench, socket head, $\frac{7}{8}$ -inch	2
28	1-W-9883	387537	Wrench, external driving spring guide	1
29	1-W-9884	388226-3	Wrench, gas cylinder guide	2
30	1-W-9885-20	BDX78566	Wrench, hydraulic charger	2
31	1-W-9881	388226-1	Wrench, combination AN-M1 for adapter	2

WEIGHT: approx. 102.0 pounds.

SLIDE, OPERATING, BAM-50, M2, GROUP ASSEMBLY



SLIDE, OPERATING, BAM-50, M2, GROUP ASSEMBLY

STOCK No. 1-S-9423 (Supersedes 1-S-8993)

THE Operating Slide Group Assembly is used for manually charging fixed guns by retracting the breech mechanism. It is also used to clear stoppages of firing due to a defective cartridge. If the gun is mounted in the wing, or fuselage, out of reach of the gunner, a remote control cable may be attached so that the slide can be operated from the cockpit.

The retracting slide is generally used in remote installations, because of the retracting slide lever's increased mechanical advantage.

The operating slide assembly is a lever and slide arrangement equipped with a metal han-

dle. It may be mounted on either side of the gun by 2 guide bearings screwed to the receiver side plate. To perform initial charging, the slide group assembly engages the bolt stud and retracts it to the rear. Upon firing, the bolt stud and breech mechanism operate independently of the slide group assembly.

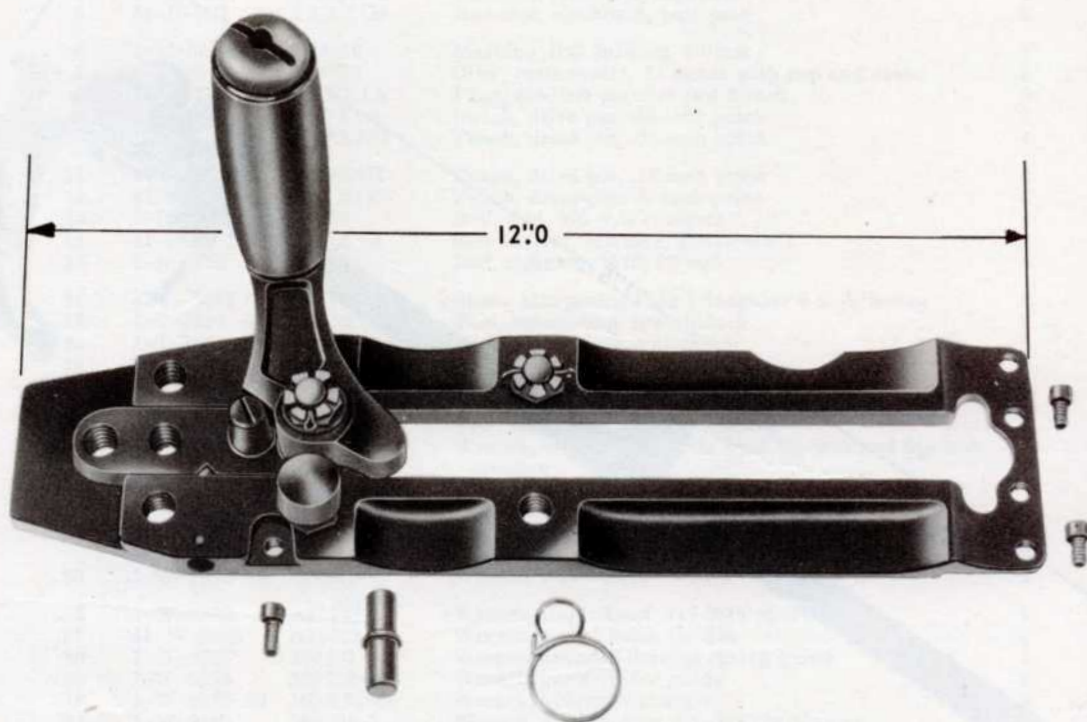
DIMENSIONS: approx. 21.5 x 6.0 x 1.8 inches.

WEIGHT: approx. 1.5 pounds.

PUBLICATIONS: O.P. 716, S.N.L. A-38, TM 9-225, and I-409.

BuORD DWG: Gen. Arr. 169790.

SLIDE, RETRACTING, BAM-50, M2, GROUP ASSEMBLY



SLIDE, RETRACTING, BAM-50, M2, GROUP ASSEMBLY

STOCK No. 1-S-9428 (Supersedes 1-S-9030)

THE Retracting Slide Group Assembly provides a means of charging flexible and fixed guns by hand retraction of the breech mechanism. It is also used to clear firing stoppages due to a defective cartridge.

It is a lever and slide arrangement which can be mounted on the left or right hand side of the gun. The force needed to start the charging cycle is furnished through the crank-like wooden hand grip, or, in the case of a remote fixed gun, by a cable. The retracting slide engages the bolt stud in such a way that

the bolt stud, and consequently the breech mechanism, operate independently of the slide upon firing.

DIMENSIONS: approx. 12.0 x 4.5 x 5.5 inches.

WEIGHT: approx. 2.1 pounds.

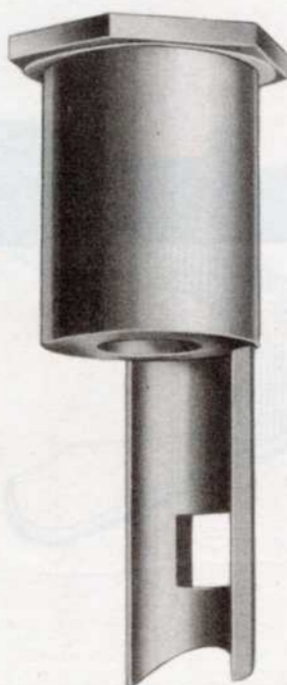
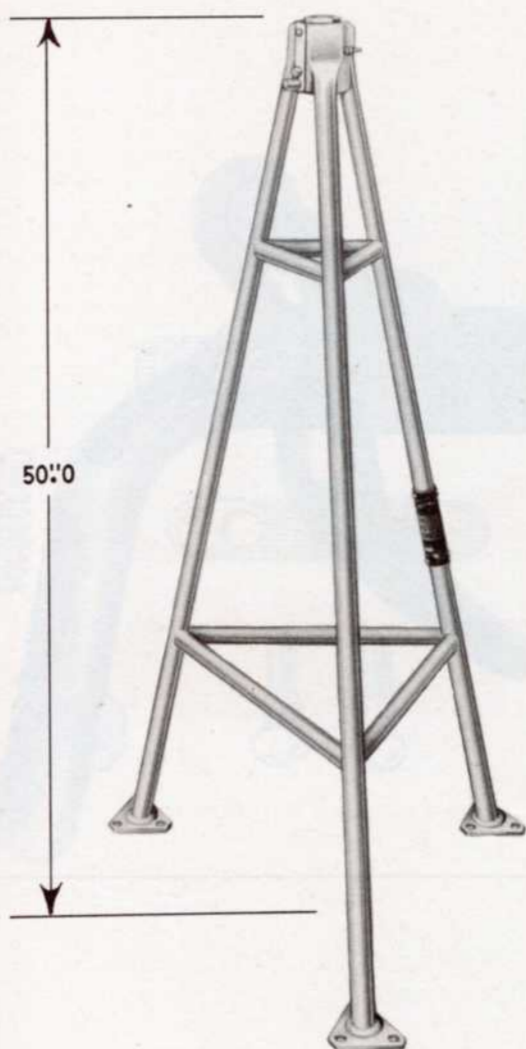
PUBLICATIONS: O.P. 716, O.C.L. 12-42, S.N.L. A-36, and T.M. 9-225, 1-409.

AAF DWG: H39B5344.

ARMY ORD DWG: D28300A.

BuORD DWG: Gen. Arr. 307245.

STAND, BAM-30 AND -50, MARK 22, MOD. 1



BUSHING

STAND, BAM-30 AND -50, MARK 22, MOD. 1

STOCK No. 1-S-19820

THE Stand Mark 22, Mod. 1 is used for the mounting of caliber .30 and caliber .50 machine guns when firing from the ground during training. It consists of a Gun Stand Mark 22 and a Gun Mount Bushing (Stock No. 1-B-7730).

Stand

DIMENSIONS: approx. 21.5 x 24.5 x 50.0 inches.

WEIGHT: approx. 34.0 pounds.

BuORD DWGS: Gen. Arr. 284382.

The bushing, located at the top of the stand, is used to reduce the diameter of the mounting socket to fit the standard yoke post of aircraft gun mount adapters. The Gun Mount Adapter Latch (Stock No. 1-L-150) secures the adapter to the stand.

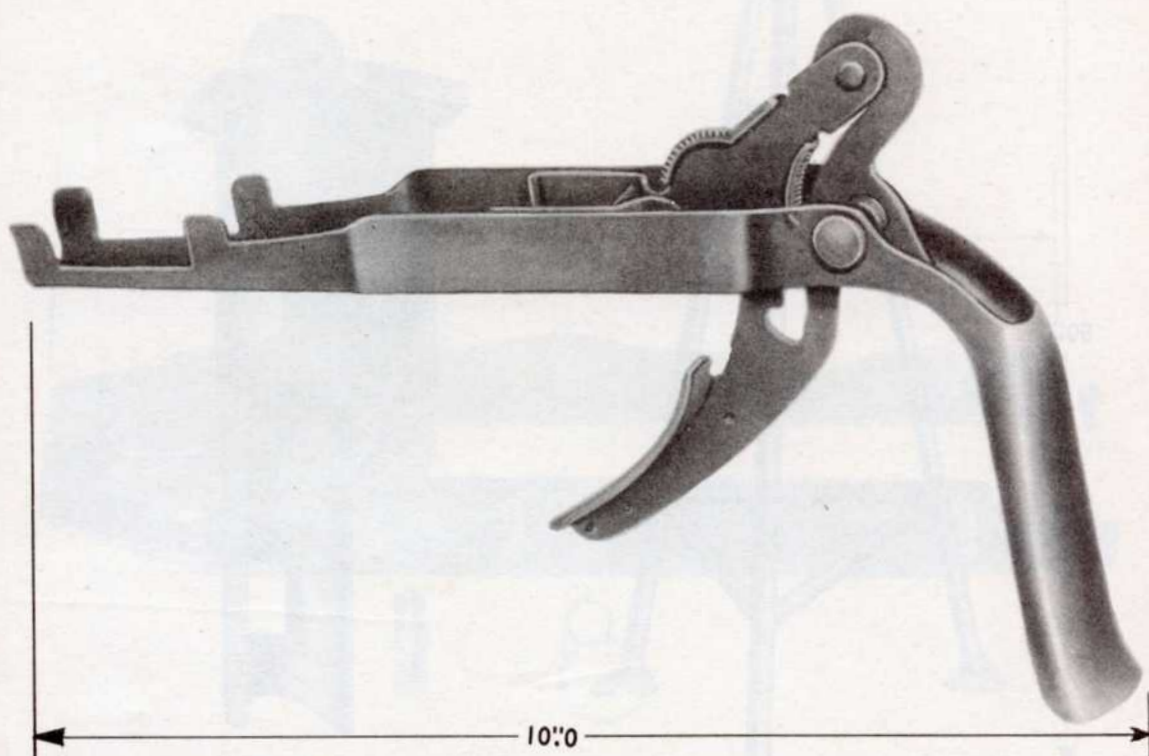
Bushing

1.8 x 2.0 x 4.6 inches.

0.7 pound.

Detail 284379.

TOOL, BELTING, CALIBER .50, MARK 2



TOOL, BELTING, CALIBER .50, MARK 2

STOCK No. 1-T-1719

THE hand-operated caliber .50 Belting Tool Mark 2 is used to break an ammunition belt by extracting a cartridge from the belt or to join 2 belts by inserting a cartridge in the end links. A metal channel, having a handle at one end and notches at the other to retain a link, contains a sliding extractor attached by a connecting arm to a hand-operated lever. The connecting arm may be secured at either end of a notch in the lever. If placed in the upper end of the notch, the extractor will be

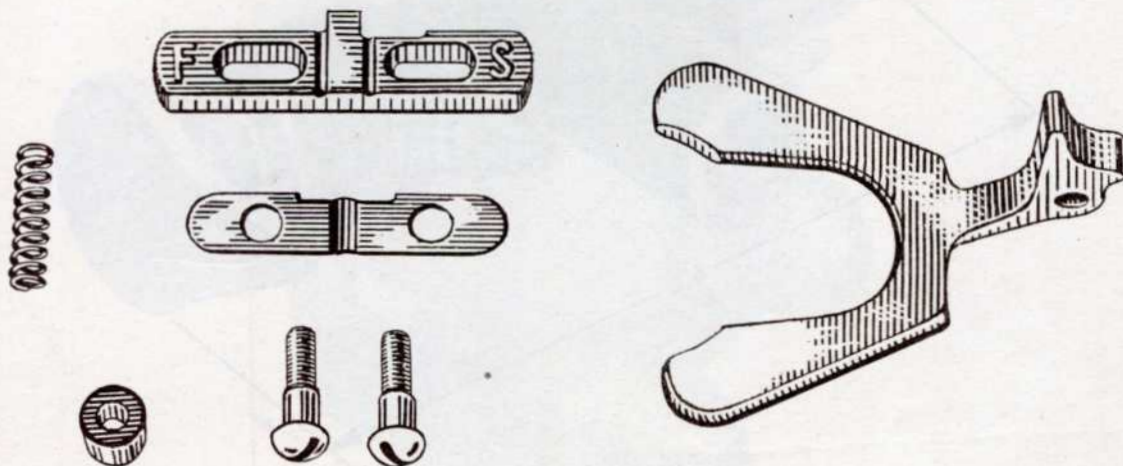
pushed away from the operator when the hand lever is depressed, thus inserting a cartridge into a link; if placed in the lower end of the notch near the hand grip, the extractor will be drawn towards the operator when the lever is depressed, thus removing a cartridge from the link.

DIMENSIONS: approx. 10.0 x 4.8 x 1.0 inches.

WEIGHT: approx. 0.9 pound.

BuORD DWG: Gen. Arr. 394250.

TRIGGER, BAM-50, M2, AND TRIGGER SAFETY GROUP



TRIGGER, BAM-50, M2, AND TRIGGER SAFETY GROUP

STOCK No. 1-T-3036

THE Trigger and Trigger Safety Group is a group of parts that can be assembled to the back plate of a caliber .50 basic gun to provide a manual means of firing the gun. It is

WEIGHT: approx. 0.2 pound.

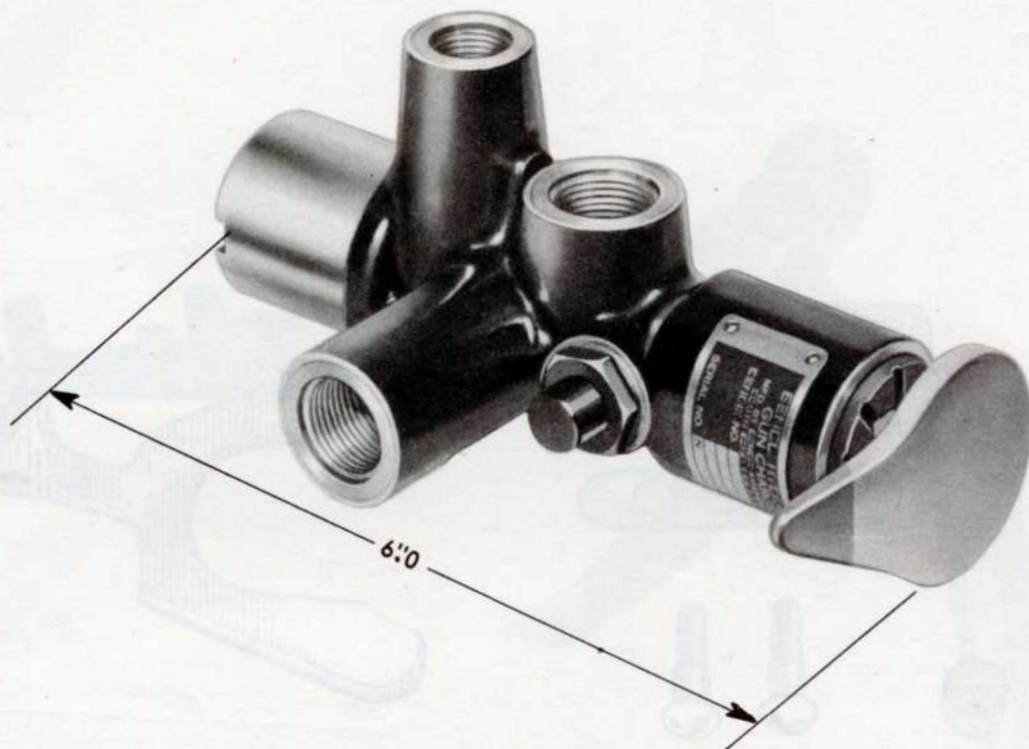
PUBLICATION: O.C.L. V-68.

also used as a standby firing mechanism for turret guns which are equipped with side-firing electrical trigger controls.

ARMY ORD DWGS: C64303, B8918.

BuORD DWG: SK. 99224.

VALVE, GUN CHARGING, HYDRAULIC, BAM-50, M2, AND AG 20 MM, AN-M2



VALVE, GUN CHARGING, HYDRAULIC, BAM-50, M2, AND AG 20 MM, AN-M2

STOCK No. 1-V-430

THE Hydraulic Gun Charging Valve Controls pressure from the airplane's hydraulic system to a Caliber .50 or 20 MM Hydraulic Gun Charger (Stock No. 1-C-3412-95 and Stock No. 1-C-3412-50 respectively).

The valve is operated by depressing the handle, and enables as many as 3 machine guns to be charged simultaneously. The handle of this valve has 2 positions; namely, the safe position and the fire position. In the safe position, the valve allows the gun bolt to be drawn back but keeps the hydraulic fluid trapped in the cylinder of the charger, preventing the bolt from moving forward to the firing position. In the fire position, the same sequence occurs, except that after the

bolt is drawn back, the fluid is released from the charging cylinder, allowing the bolt to move forward so the gun is ready to be fired.

This valve is exactly the same as the Hydraulic Gun Charging Valve Type A-1 (AAF DWG. H41B5344).

All hydraulic lines, fittings, etc., used in connection with these valves are under the cognizance of the Bureau of Aeronautics.

DIMENSIONS: approx. 6.0 x 2.3 x 3.6 inches.

WEIGHT: approx. 1.2 pounds.

PUBLICATIONS: O.P. 827, AAF Tech, Order 11-1-14.

BuORD DWGS: Gen. Arr. 332357, 300202.

VALVE, GUN CHARGING, ADEL MODEL D9552



VALVE, GUN CHARGING, ADEL MODEL D9552

STOCK No. 1-V-435

THE Gun Charging Valve Adel Model D9552 is a 3-way selector valve with an integral check valve on the pressure inlet port. This unit is used to control the Interstate hydraulic gun chargers used on PV-1 airplanes.

The valve consists of a housing, 3 ports, and a selector handle.

By moving the selector handle to the position marked 1, an upper valve in the housing is opened allowing fluid to flow to the gun charging cylinder. Moving the handle to the position marked 2 opens the lower valve in the housing, releasing the pressure in the

cylinder and enabling the returning fluid to flow back into the reservoir.

DIMENSIONS: approx. 3.6 x 3.4 x 2.9 inches.

WEIGHT: approx. 1.0 pound.

SELECTOR HANDLE ROTATION: 45 degrees either side of neutral.

PORT FITTING: $\frac{3}{4}$ -inch— 18 NS-3 threads.

PUBLICATION: Handbook of Instruction, Adel Precision Products Corporation, Burbank, Calif.

MFR'S DWG: Adel Precision Products Corporation D9552.

FIRE CONTROL EQUIPMENT

FIRE CONTROL EQUIPMENT

BLANKETS, BOMBSIGHT
BOMB-ATTACHMENT, GLIDE
BOMBSIGHTS
BORESIGHTS
BRACKETS, SIGHT
CALIBRATION OUTFITS, BOMBSIGHT
CAMERAS, GUN
CASE, BOMBSIGHT CARRYING
COMPUTER, TORPEDO SPEED
DIRECTORS, TORPEDO
FILM, GUN CAMERA
HEAD, BOMBSIGHT
INDICATOR, BOMBSIGHT PILOT DIRECTOR
KIT, BOMBSIGHT COLOR FILTER
LAMPS, ELECTRIC
MAGAZINE, GUN CAMERA FILM
MOTOR GENERATOR SETS
MOUNTS, BOMBSIGHT
MOUNTS, GUN CAMERA
PROJECTOR, GUN CAMERA FILM
REFLECTORS, ADJUSTABLE FOR ILLUMINATED SIGHTS
RETICLES, SIGHT
ROTOR BALANCING SET
SBAE
SETS, SPARE PARTS
SIGHTS, OPEN
SIGHTS, ILLUMINATED
STABILIZERS, BOMBSIGHT (See Bombsights)
TACHOMETERS, BOMBSIGHT

BLANKET, BOMBSIGHT, MARK 1 AND MOD.



MARK 1

BLANKET, BOMBSIGHT, MARK 1

STOCK No. 2-B-1900

THE Bombsight Blanket Mark 1 is used with the Bombsight and Stabilizer Mark 15, Mod. 5 and Mod. 7 as a protective cover to retain the heat produced by the bombsight and to act as a supply of heat to the bombsight in extremely low temperatures. The bombsight tachometer may be heated by placing it in a small pocket provided inside the blanket. The blanket consists of alternate layers of wool batting and cotton fabric with electrical heating wires sewn between the woolen material and the cotton lining. A drawstring and clamp at the base of the cover secure it tightly to the stabilizer. Power is supplied to the heating element through a 60-inch long cord with Type AN3106-16-11P connector. The other end of the cord is connected in a junction box mounted on the outside of the blanket.

An automatic thermostatic control in the

electrical circuit prevents overheating. The thermostat is in a metal tube attached to the inner lining of the blanket.

The Navy procures this cover from the Army Air Forces under AAF Drawing 42M16384. This is the same as the Electrically Heated Bombsight Blanket AAF Type A-1, except that the connector used by the Army is a Hubbel Twist Lock Plug No. 7542 or 7545.

DIMENSIONS (open): approx. 21.0 x 12.0 x 12.0 inches.

WEIGHT: approx. 5 pounds.

MINIMUM HEATING REQUIREMENT: Maintain plus 15° F. (minus 9.4° C.) at external temperature of minus 60° F. (minus 51° C.).

PUBLICATIONS: AAF Tech. Order 11-30-1, 11-30-9, O.T.I. V-4-43.

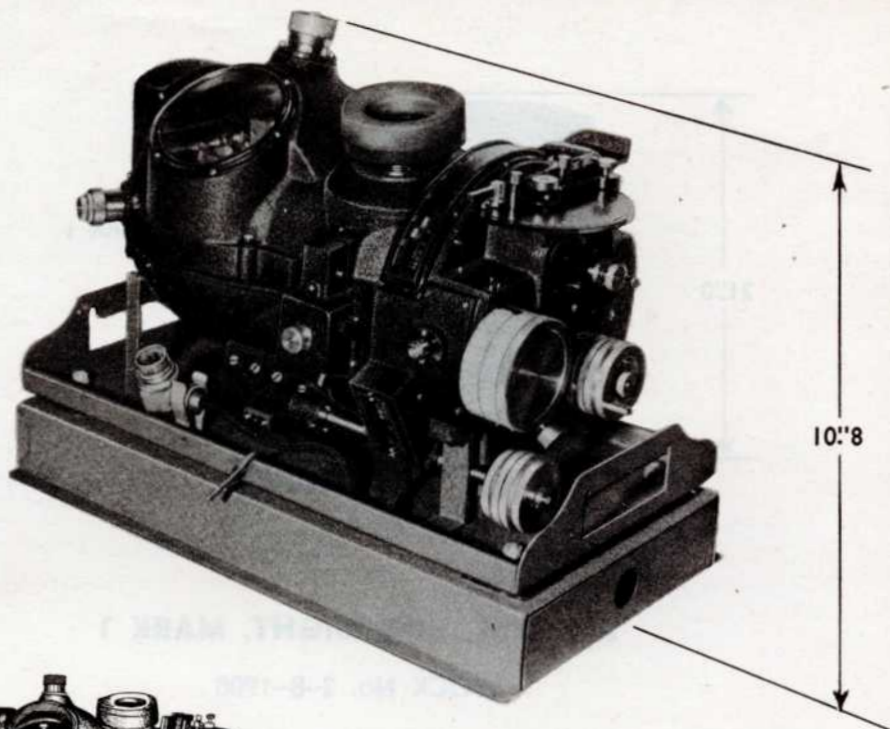
BLANKET, BOMBSIGHT, MARK 1, MOD. 1

STOCK No. 2-B-1905

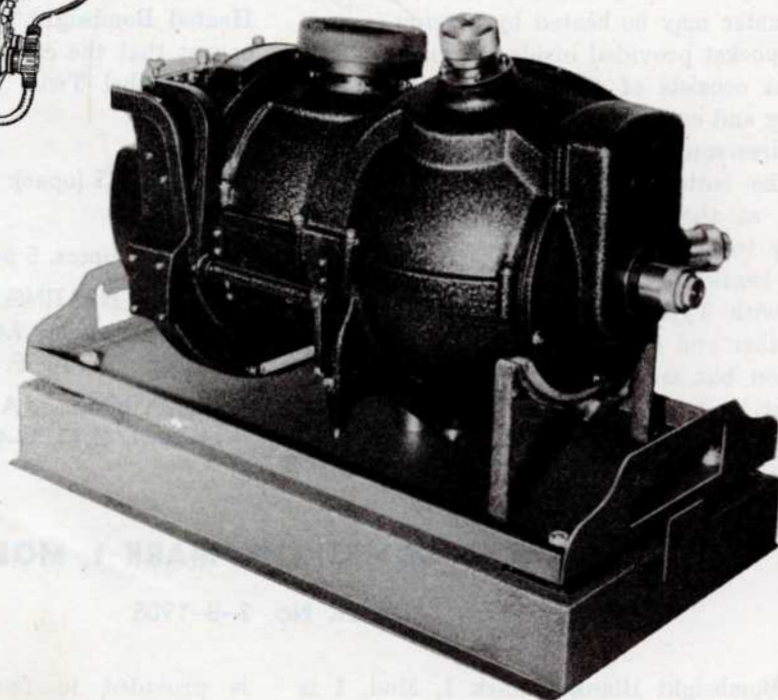
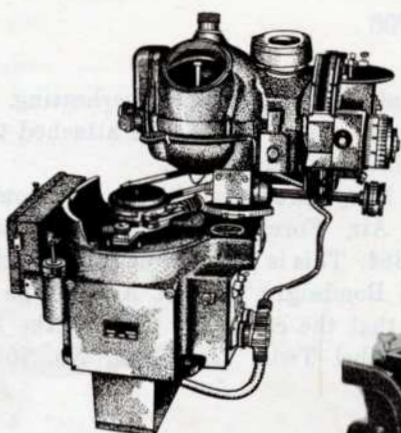
THE Bombsight Blanket Mark 1, Mod. 1 is the same as the Mark 1 except that a zipper

is provided to facilitate installation and removal.

BOMBSIGHT, MARK 15 MODS.



MARK 15 MOD 7



BOMBSIGHT, MARK 15 MODS.

BOMBSIGHT, MARK 15, MOD. 5

STOCK No. 2-B-2305

THE Bombsight Mark 15, Mod. 5 establishes the proper course for a bombing run (see Indicator, Pilot Director and SBAE) and computes the proper point of bomb release. It is a precision instrument consisting of a gyro-stabilized optical system and a rate end with variable adjustments through which the bombardier introduces the factors of air speed, altitude and ballistic characteristics of the bomb.

The bombsight is shipped mounted on a tray installed in a metal container. When placed in the airplane the bombsight is mounted on a stabilizer. The stabilizer (see Stabilizer, Bombsight) is linked to the bombsight to provide stability in azimuth during the bombing run. The bombsight, while particularly adapted for high altitude, horizontal bombing, may also be used at altitudes down to 1300 feet. A low altitude bombing attachment which was formerly included with the

bombsight for this purpose is no longer furnished as a part of it.

Stablized bombing approach equipment of both Norden and Minneapolis-Honeywell manufacture (see SBAE) may be used with the bombsight. The bombsight may also be used with Sperry Automatic Pilot Mark 3 provided suitable adapting equipment is used. (See Rudder Control Unit, Proportional Bank Adapter, Rudder Transfer Valve.)

DIMENSIONS: approx. 16.8 x 9.4 x 10.8 inches.

WEIGHT: approx. 42 pounds.

OPERATING VOLTAGE: 24 volts DC.

PUBLICATIONS: O.P. 640, 649, 650; O.C.L. V-62, V-9-42, V-27-42, V-29-42, V-32-42, V-37-42, V-44-42, V-46-42, V-1-43, V-9-43, V-19-43, V-21-43, V-22-43, X-440; and O.T.I. V-41-43.

BuORD DWGS: SK. 101212, Gen. Arr. 265654.

BOMBSIGHT MARK 15, MOD. 7

STOCK No. 2-B-2307

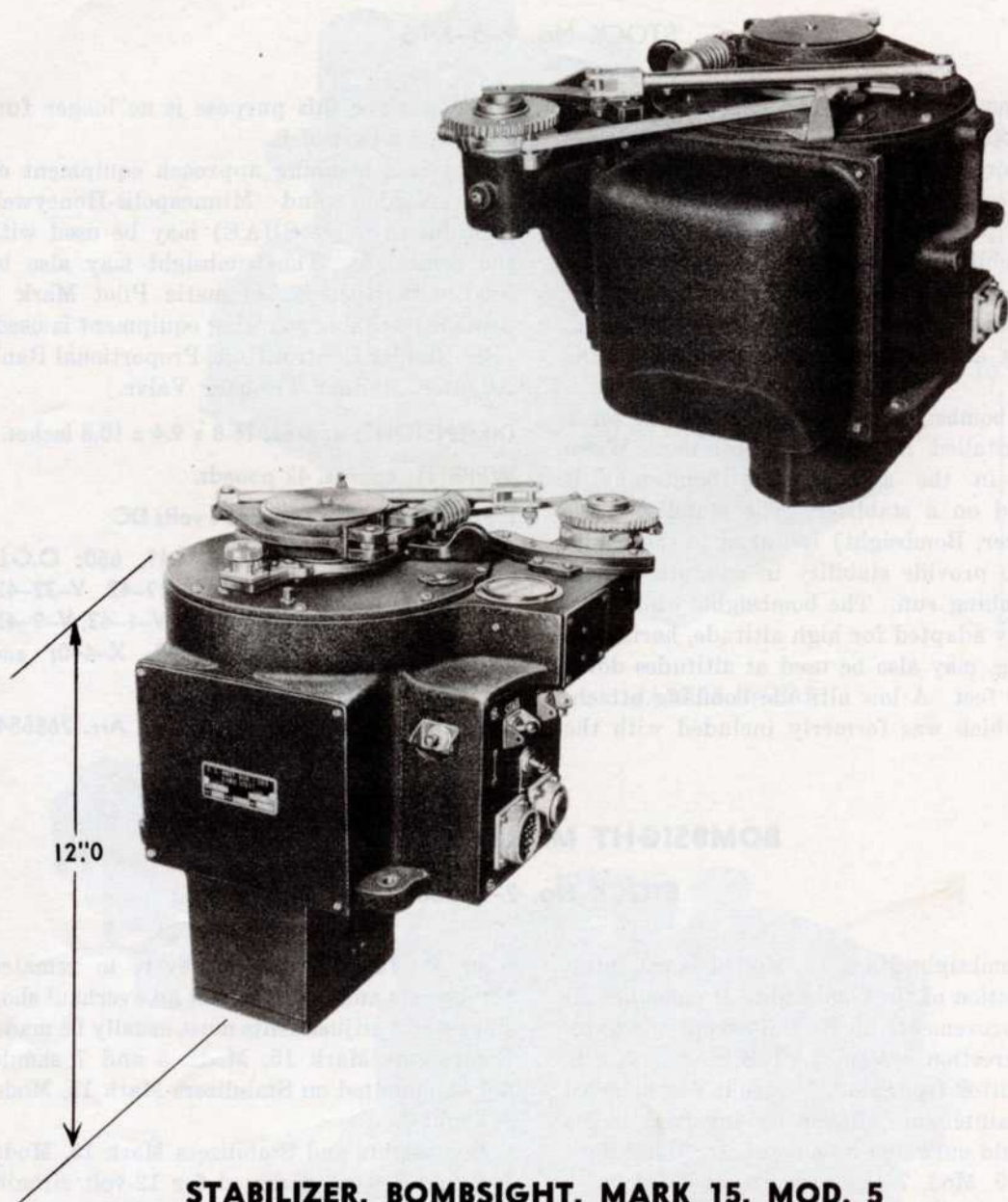
THE Bombsight Mark 15, Mod. 7 is the latest modification of the bombsight. It embodies all the improvements of Mod. 5 except the automatic erection system (A.E.S.). The A.E.S. was omitted from Mod. 7 since it was believed that maintenance difficulties involved in its use would outweigh its advantage. Bombsight Mark 15, Mod. 7 also operates on 24 volts.

Theoretically, Bombsights Mark 15, Mods. 5 and 7 may be used with any Stabilizer Mods.

5 or 7. It is better, however, to rematch bombsights and stabilizers at an overhaul shop since slight adjustments must usually be made. Bombsights Mark 15, Mods. 5 and 7 should not be mounted on Stabilizers Mark 15, Mods. 1, 2 and 3.

Bombsights and Stabilizers Mark 15, Mods. 1, 2 and 3 were designed for 12-volt circuits and are now used only for training purposes.

STABILIZER, BOMBSIGHT, MARK 15 MODS.



STABILIZER, BOMBSIGHT, MARK 15, MOD. 5

STOCK No. 2-S-5925

THE Bombsight Stabilizer Mark 15, Mod. 5 serves as a mount for the bombsight and is used for 2 purposes; to stabilize the bombsight in azimuth, and, when used with the SBAE system to provide a reference point for controlling the airplane in azimuth.

The instrument consists of a high speed gyro with its spin axis horizontal; a torque

motor to hold the gyro axis horizontal; a directional clutch for engaging the stabilizer to the bombsight; a secondary clutch for connecting the stabilizer to the SBAE and a stabilized brush assembly which operates the Pilot Director Indicator Mark 15, Mod. 5 through an electrical connection.

STABILIZER, BOMBSIGHT, MARK 15 MODS.

STABILIZER, BOMBSIGHT, MARK 15, MOD. 5 (Cont'd)

STOCK No. 2-S-5925

Minor electrical changes are required for converting the stabilizer from use with the Norden type to use with the Minneapolis-Honeywell type of SBAE. By use of a suitable adapter (see Rudder Control Unit) the stabilizer may be operatively connected to the Automatic Pilot Mark 3 to permit use of that system as SBAE during a bombing run.

DIMENSIONS: approx. 11.5 x 12.0 x 8.6 inches.

WEIGHT: approx. 39.1 pounds.

OPERATING VOLTAGE: 24-volt DC.

PUBLICATIONS: O.P. 649, O.P. 650, and O.T.I. V-19-43.

BuORD DWGS: SK. 101213, Assembly 205654, 205655.

STABILIZER, BOMBSIGHT, MARK 15, MOD. 7

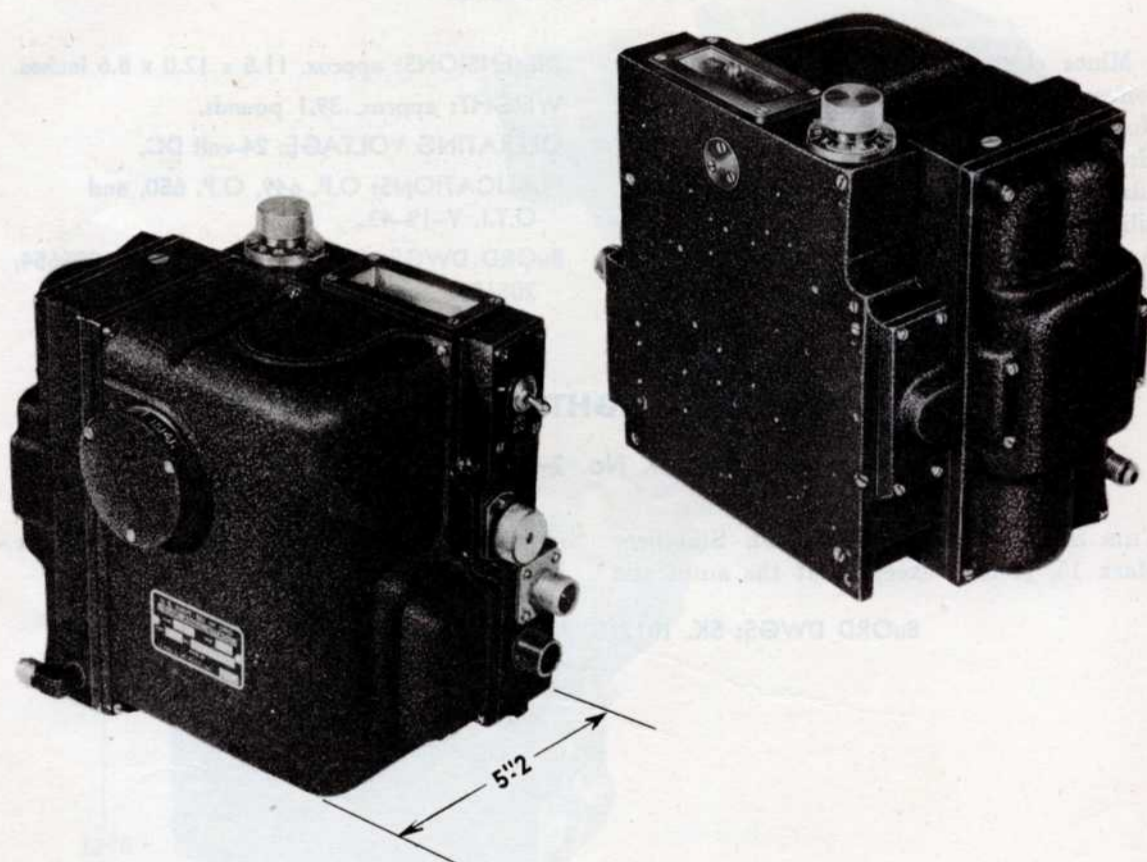
STOCK No. 2-S-5927

THIS Stabilizer is identical with Stabilizer Mark 15, Mod. 5 except that the automatic

erection system (AES) cut-out switch has been removed from the stabilized brush.

BuORD DWGS: SK. 101215, Assembly 205656, 205657.

BOMBING-ATTACHMENT, GLIDE, MARK 2



BOMBING-ATTACHMENT, GLIDE, MARK 2

STOCK No. 2-B-2300-50

THE Glide Bombing-Attachment Mark 2 is an auxiliary device that allows the Bombsight Mark 15, Mod. 5 or Mod. 7 to be used while the airplane is in a glide or a climb as well as in horizontal flight. The instrument is usually mounted in place of the inspection cover on the after side of the stabilizer housing. If this is not possible, an adapter may be used or the attachment may be placed away from the stabilizer in any location that is free from excessive vibration.

The attachment consists of a barometric pressure element, enclosed in an airtight portion of the housing, and a disc speed computer.

The barometric element measures altitude and vertical velocity. The computer takes these results, together with a ballistic correction put in by the operator, and computes the disc speed for the bombsight. The outer computer shaft of the attachment is coupled directly to the bombsight disc by a flexible drive shaft.

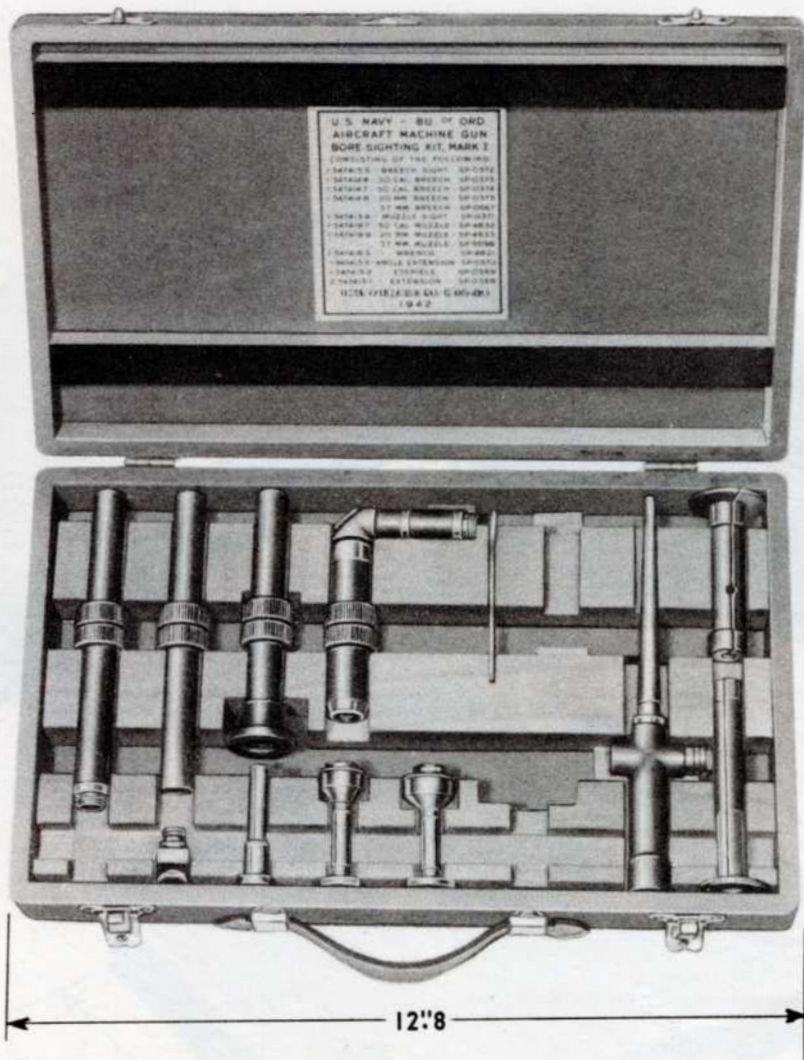
DIMENSIONS: approx. 8.3 x 7.6 x 5.2 inches.

WEIGHT: approx. 13.5 pounds.

OPERATING VOLTAGE: 24 volts DC.

PUBLICATION: O.P. 1116.

BORESIGHT KIT, FOR BAM-30 AND -50, AND AG 20 MM GUNS, MARK 1



BORESIGHT KIT, FOR BAM-30 AND -50, AND AG 20 MM GUNS, MARK 1

STOCK No. 2-B-2444

THE Boresight Kit Mark 1 is used to boresight free and fixed caliber .30 and .50, and 20 mm guns. The kit contains equipment for boresighting from the breech or muzzle.

The breech equipment consists of a breech sight, adapters for caliber .30 and .50 and 20 mm guns, and a small wrench. The muzzle equipment consists of a muzzle sight and adapters for caliber .50 and 20 mm guns. (The muzzle sight is not used with caliber .30 guns.)

Also included in the kit are an eyepiece

(used with both breech and muzzle sights), 2 straight extension tubes and one right angle tube. These are used when limited space or external equipment precludes sighting with the eyepiece alone.

Directions for the assembly of the bore-sight are given in Ordnance Pamphlet 985.

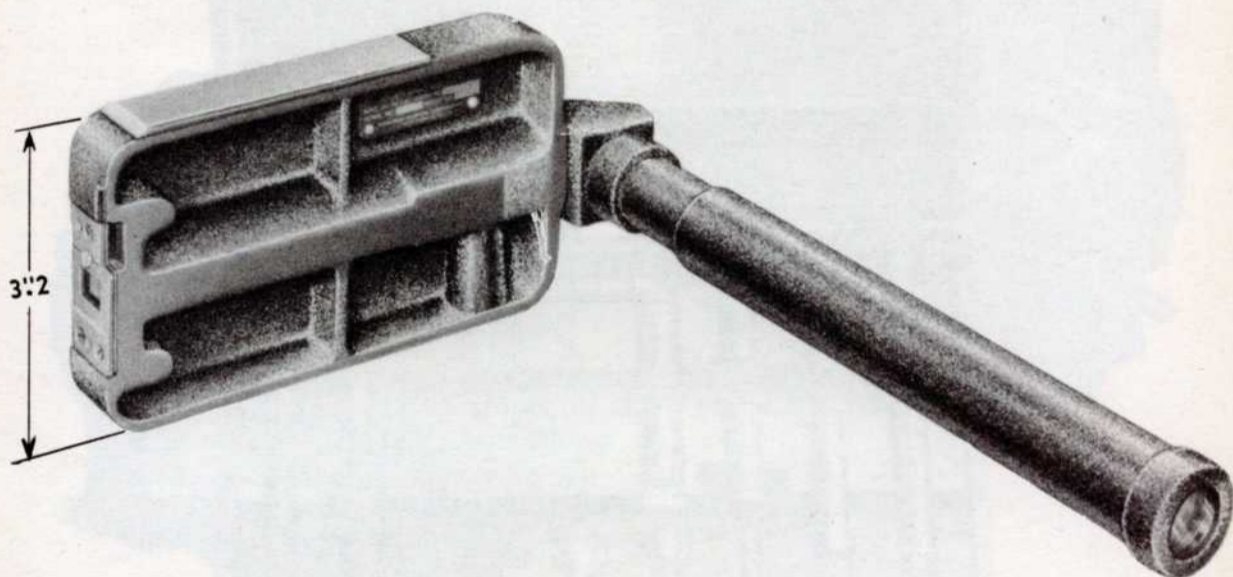
DIMENSIONS: approx. 12.8 x 8.8 x 3.0 inches.

WEIGHT: approx. 5.0 pounds.

PUBLICATIONS: O.P. 985, O.C.L. V-42-42.

BuORD DWG: Assembly 347411.

BORESIGHT, GUN CAMERA, TYPE AN-1



BORESIGHT, GUN CAMERA, TYPE AN-1

STOCK No. 2-B-2433

THE Gun Camera Boresight Type AN-1 is used to align the optical axis of the camera with the axis of the gun sight. It consists of a telescope contained in a steel tube and rectangular metal casting. The tube, which is the eye piece, is free to swing about the long axis of the casting thereby permitting use of the instrument in confined spaces. The

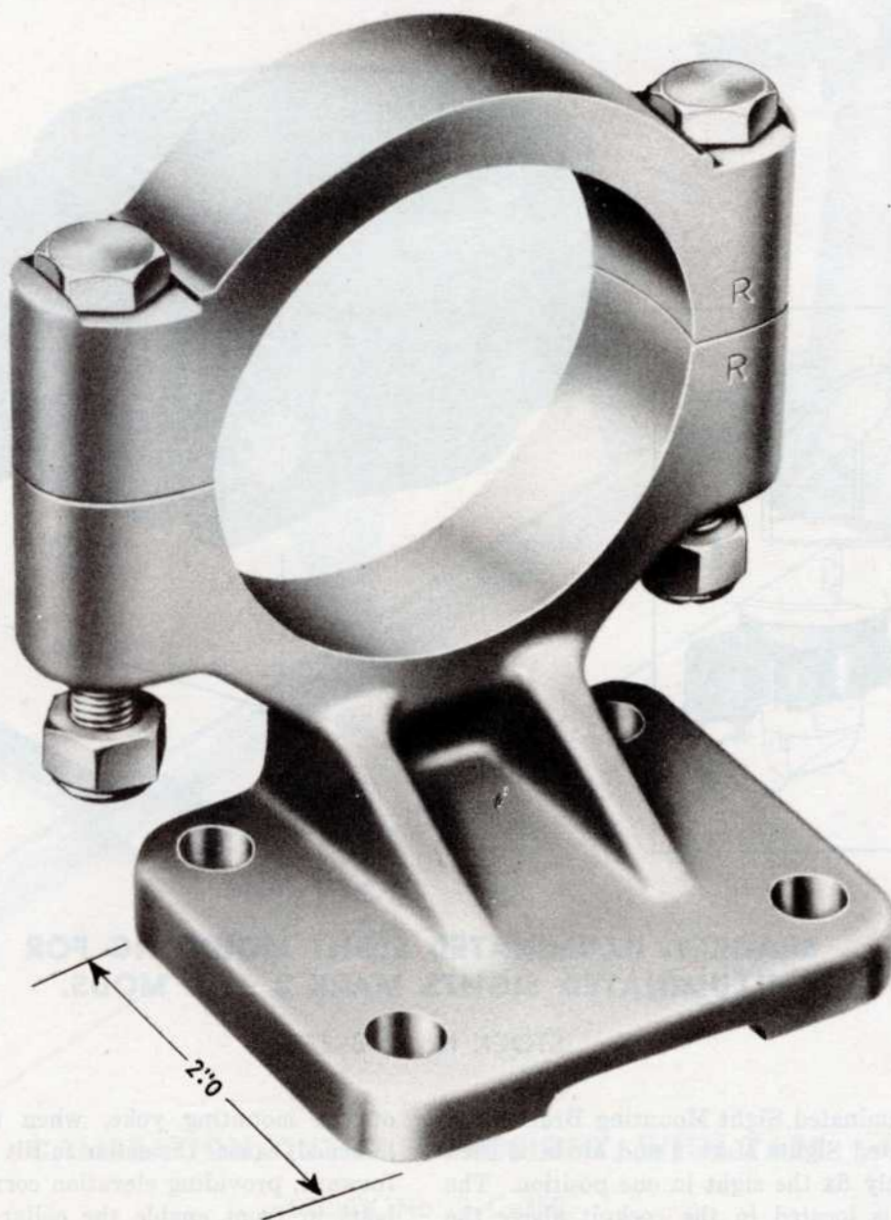
casting is the same size as the Magazine Type A-6 and is inserted in the camera in the position ordinarily occupied by the magazine.

DIMENSIONS (not including eyepiece): approx.
6.2 x 3.2 x 2.0 inches.

WEIGHT: approx. 1.4 pounds.

PUBLICATION: O.P. 864.

MOUNT, ILLUMINATED SIGHT MARK 8



MOUNT, ILLUMINATED SIGHT MARK 8

STOCK No. 2-M-510

THE Mount for the Illuminated Sight Mark 8 consists of a bracket with an integral mounting yoke that fits the neck of the sight. The yoke is attached to the bracket by means of 2 bolts. Boresighting in azimuth is effected by loosening these bolts and rotating the instrument. Elevation adjustment methods

vary with different installations.

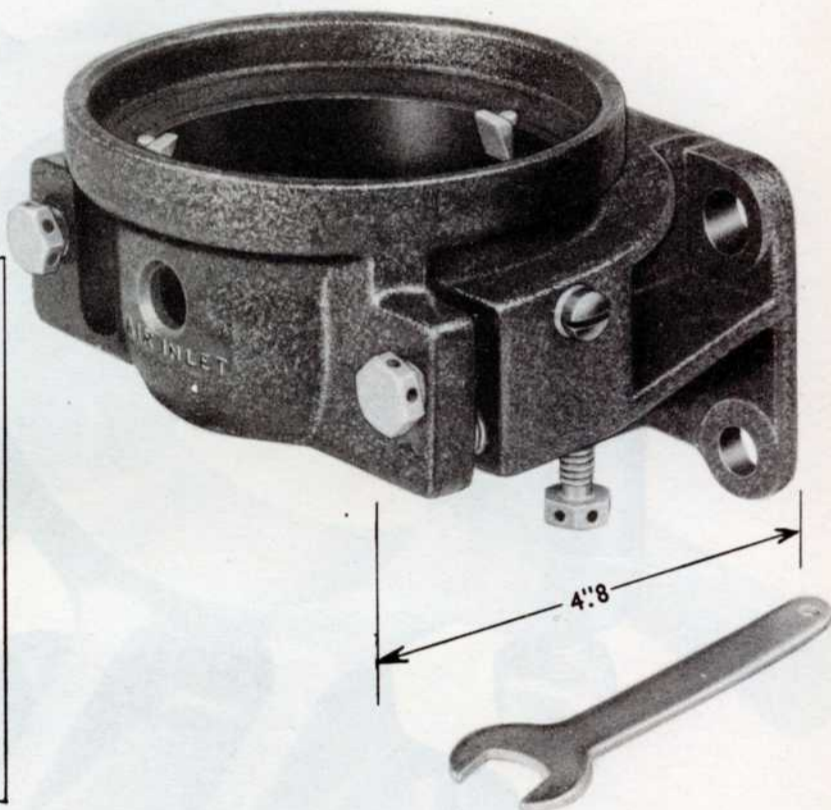
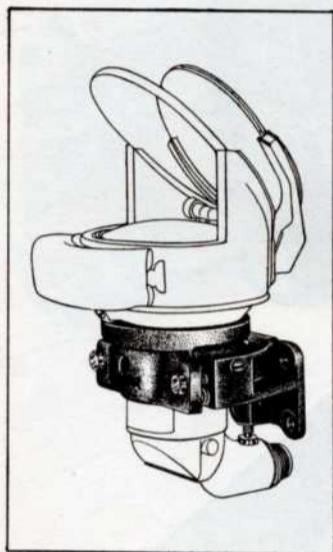
At present this mount is used only in SBD-5 airplanes.

DIMENSIONS: approx. 3.8 x 2.0 x 4.0 inches.

WEIGHT: approx. 0.5 pound.

BuORD DWG: SK. 99211.

BRACKET, ILLUMINATED SIGHT MOUNTING FOR ILLUMINATED SIGHTS MARK 8 AND MODS.



BRACKET, ILLUMINATED SIGHT MOUNTING FOR ILLUMINATED SIGHTS MARK 8 AND MODS.

STOCK No. 2-B-2730

THE Illuminated Sight Mounting Bracket for Illuminated Sights Mark 8 and Mods. is used to securely fix the sight in one position. The bracket is located in the cockpit above the instrument panel so that the reflector plate of the sight will be in the pilot's line of forward vision.

The assembly consists of a pivoted collar and a mounting yoke. The spherical portion of the sight body fits in the collar and is held securely by means of 3 wedge screws. The mounting yoke acts as a pivot for the collar and has 4 holes for attaching to the airplane structure.

The bracket also has facilities for bore-sighting the instrument. A bolt in the bottom

of the mounting yoke, when tightened or loosened, causes the collar to tilt backward or forward, providing elevation correction. Two bolts in front enable the collar to pivot in azimuth in the mounting yoke. Two springs below them put pressure on the collar to keep it against these azimuth boresighting bolts.

This bracket replaces the Adapter for Illuminated Sight Mark 8 (Stock No. 2-A-35) and the Mount for Illuminated Sight Mark 8 (Stock No. 2-M-510).

DIMENSIONS: approx. 4.3 x 4.2 x 3.2 inches.

WEIGHT: approx. 0.8 pound.

BuORD DWG: Gen. Arr. 330734.

CALIBRATION OUTFITS, BOMBSIGHT



CALIBRATION OUTFIT, BOMBSIGHT, WITH TAPE

STOCK No. 2-C-350

THE Bombsight Calibration Outfit with Tape is used in bombsight overhaul shops to check and adjust various parts of the bombsight. It consists of a precession stand and a tape with rail and tape motor.

The precession stand is a pedestal-like support with a large base on which the directional stabilizer and bombsight are mounted for checking purposes. The stand was designed for use with Bombsights Mark 15, Mod. 1, Mod. 2, and Mod. 3. In order to use the stand

with later modifications of this bombsight, 2 adapter plates are bolted in position on the stand before mounting the stabilizer. The stand is used to check the precession rate of the bombsight gyro and to align the optical and cross trail mechanisms of the sight.

The tape is mounted on the rail in continuous fashion. An electric motor at one end provides power for moving the tape at a constant speed along the upper surface of the rail and returning it on the other side.

CALIBRATION OUTFITS, BOMBSIGHT

CALIBRATION OUTFIT, BOMBSIGHT, WITH TAPE (Cont'd)

STOCK No. 2-C-350

The movement of the tape on the upper side simulates ground movement and the telescope drive system may be checked by setting the cross hairs on the tape.

The following accessories are supplied with this equipment:

1. Adapter.
2. Ammeter.
3. Beam, target tape.
4. Clamp, connecting rod.
5. Connector, cord (2-pole).
6. Head, revolving.
7. Indicator, pilot director.
8. Level, master precision.
9. Mirror, true optical.
10. Motor, variable speed tape.
11. Panel, instrument.
12. Pedestal, 3-point adjustment.
13. Plates, precession grid (4).
14. Plates, cross trail (1) Mark 15-3.
15. Plates, cross trail (1) Mark 15-4.
16. Platform, observers'.
17. Plumb bob.
18. Sight, peep.
19. Table, precession (3 legs).
20. Table, precession bombsight stem bushing.
21. Take-up, target tape.
22. Tangent table, with cover.
23. Tape, steel.
24. Tape, silk.
25. Voltmeter.
26. Watch, stop.

DIMENSIONS: (stand) approx. 27.0 x 27.0 x 42.8 inches.

WEIGHT: (stand) approx. 150 pounds.

PUBLICATION: O.C.L. V-37.

CALIBRATION OUTFIT, BOMBSIGHT, WITHOUT TAPE

STOCK No. 2-C-355

THE Bombsight Calibration Outfit without Tape consists only of the precession stand as described above. It is supplied to, and used only by, squadron shops which are required to conduct routine 100-hour checks on the sight. Since the maintenance work which they do is limited in scope, squadron shops do not need the tape assembly.

The following accessories are supplied with the calibration outfit without tape:

1. Adapter.
2. Ammeter.
3. Clamp, connecting rod.
4. Connector cord (2-pole).
5. Head, revolving.
6. Indicator, pilot director.
7. Level, master precision.
8. Mirror, true optical.
9. Panel, instrument.
10. Pedestal, 3-point adjustment.
11. Plates, precession grid (4).
12. Plates, cross trail (1) Mark 15-3.
13. Plates, cross trail (1) Mark 15-4.
14. Platform, observers'.
15. Plumb bob.
16. Sight, peep.
17. Table, precession (3 legs).
18. Table, precession, bombsight stem bushing.
19. Tangent table, with cover.
20. Voltmeter.

CASE, BOMBSIGHT CARRYING



CASE, BOMBSIGHT CARRYING

STOCK No. 2-C-2000

THE Bombsight Carrying Case is designed to accommodate the Bombsight Mark 15, Mods. 3, 4, 5, or 7. The case is made of 14-ounce canvas, padded and insulated. It is issued without the bombsight mounting tray.

The following features are incorporated:

1. The main zipper fastener is attached low enough so that the entire bombsight and its securing turnbuckle are readily accessible.

2. A flap on the end of the case can be opened to provide access to a drawer in the bombsight's mounting tray, without exposing the sight itself.

3. On the hinged side of the cover is a zippered pocket for the instrument's log book, bombardier's plotting card, and charts.

4. The case has a carrying strap made of heavy webbing.

5. A dehydrator unit is included to prevent any accumulation of moisture.

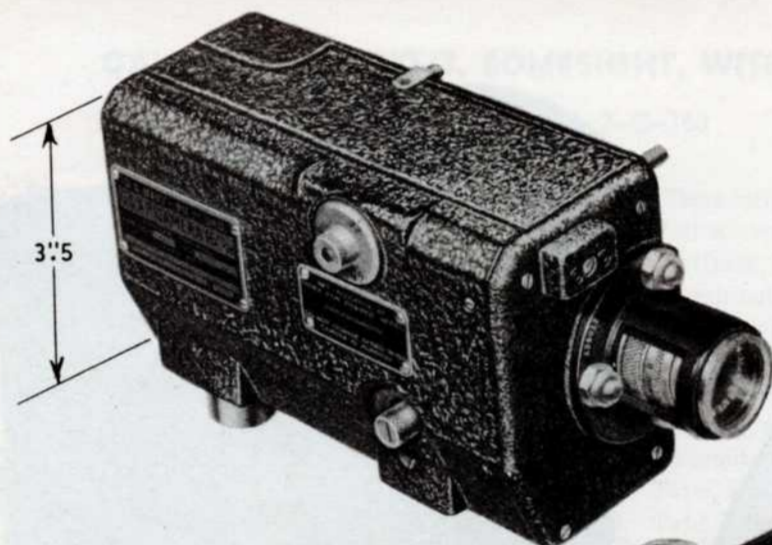
DIMENSIONS: approx. 20.0 x 12.0 x 14.0 inches.

WEIGHT: approx. 4.5 pounds.

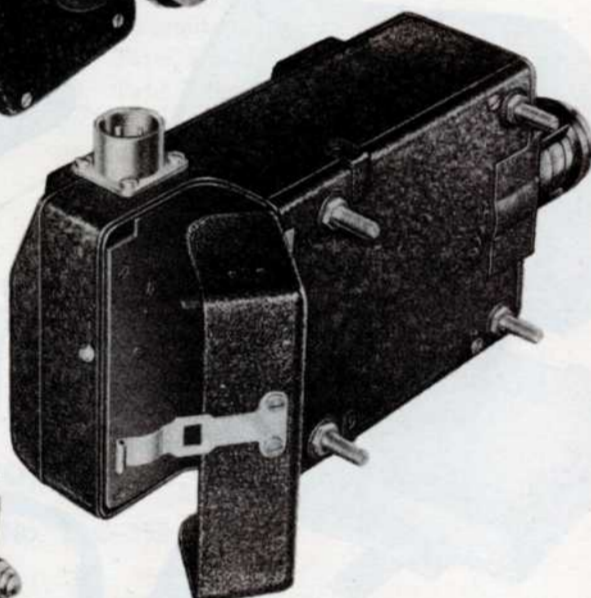
PUBLICATION: O.S. 1378.

BuORD DWG: SK. 119932.

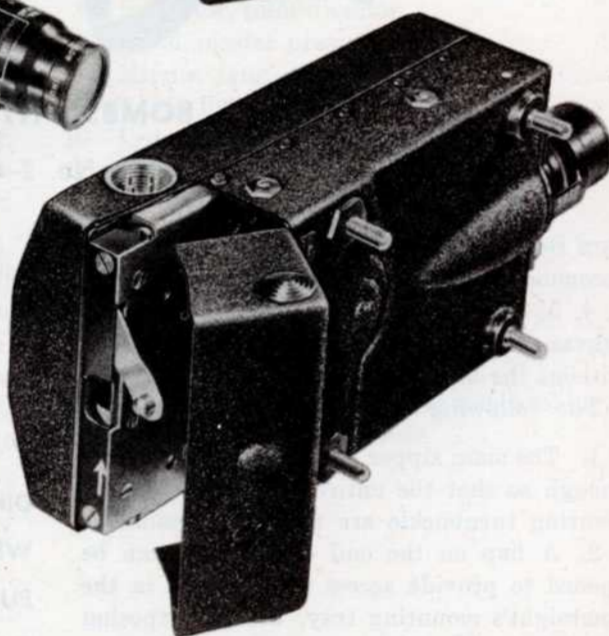
GUN CAMERA TYPE AN



TYPE AN M-4A
AN N-4A



TYPE AN M-4
AN N-4



GUN CAMERA TYPE AN

GUN CAMERA TYPE AN

STOCK Nos. (See table)

THE AN Gun Camera (formerly known as the GSAP camera) is used for training purposes, and to record the result of aerial combats. It is a motor-driven, magazine-loading, 16 mm motion picture camera and is mounted near the sighting station of both fixed and flexible guns.

The lens has a 34 mm focal length and a relative aperture that may vary from F3.5 to F16. A removable minus blue filter is provided for use with panchromatic film. The

AN Magazine Type A-6 used with this camera has a capacity of 50 feet of film.

The motor which drives the camera is an electric, governor-controlled unit, operating on either 12-volt or 24-volt DC. It is mounted within the camera housing. A manually-set dial permits selection of operating speeds of 16, 32, and 64 frames per second.

The AN gun cameras are designated according to operating voltage and manufacturer, as shown in the following table:

Type	Operating Voltage	Manufacturer	Stock Numbers
AN M-4	12 volts	Fairchild Aviation Corporation	2-G-1025
AN M-4A	12 volts	Bell and Howell Company	2-G-1027
AN N-4	24 volts	Fairchild Aviation Corporation	2-G-1029
AN N-4A	24 volts	Bell and Howell Company	2-G-1031

The camera may be installed on any one of several gun camera mounts, depending on whether the mounting is fixed or flexible. For a fixed installation, the Mark 8 or a combina-

tion of Mark 2, Mod. 1 and Mark 7 may be used. For flexible installations, the Mark 3; Mark 3, Mod. 1; Mark 5; Mark 5, Mod. 1 or Mark 6 may be used.

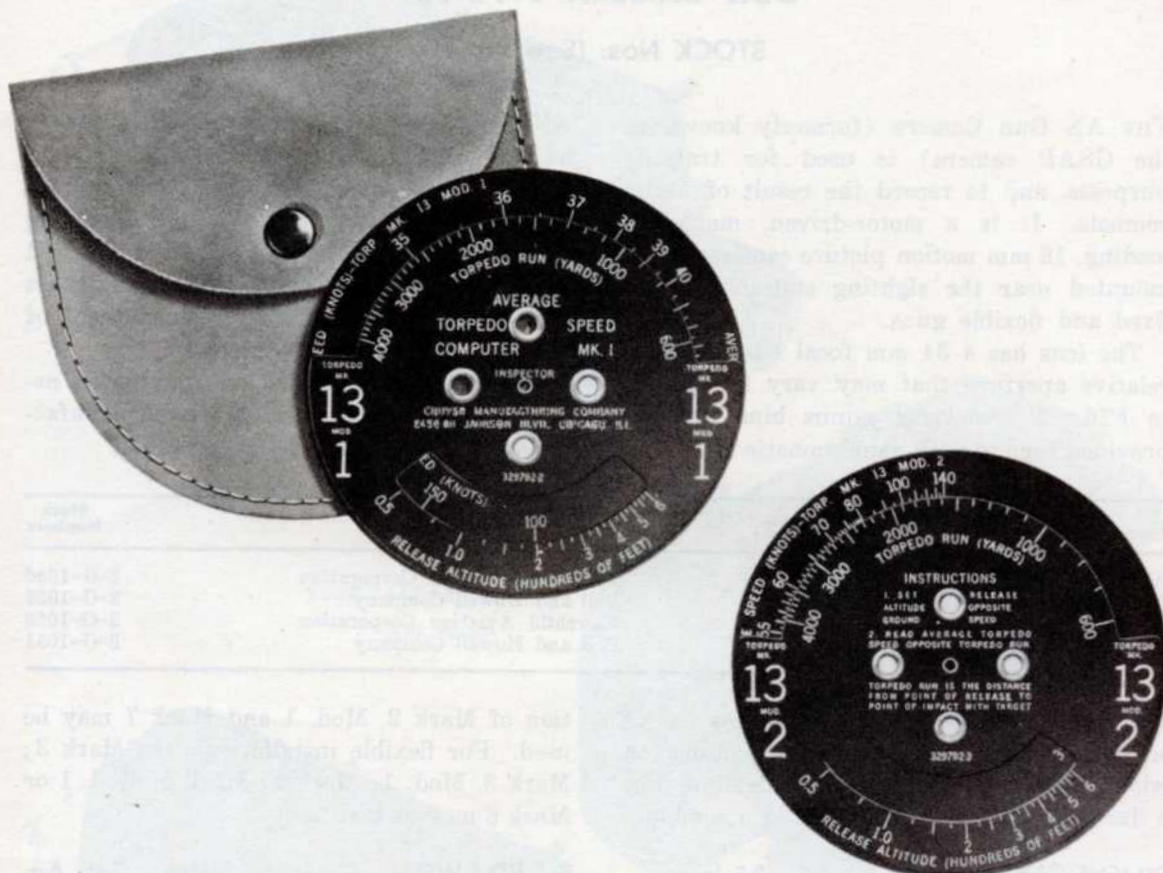
DIMENSIONS: approx. 5.8 x 3.5 x 2.5 inches.

WEIGHT: approx. 3.0 pounds.

PUBLICATIONS: O.P. 864, TM 1-505, and O.C.L. V-15-42, V-39-42.

BuORD DWGS:	Camera	Sketch	Gen. Arr.
	M4	91658	323091
	N4	91659	323090
	M4A	91212	923196
	N4A	91207	923189

COMPUTER, TORPEDO SPEED, MARK 1



COMPUTER, TORPEDO SPEED, MARK 1

STOCK No. 2-C-3500

THE Torpedo Speed Computer Mark 1 is a portable circular slide rule used with the Torpedo Director Mark 30 and Mods. to compute a value for the average speed of Torpedoes Mark 13, Mods. 1 and 2. The computer consists of 3 concentric discs. The inner disc, called the average torpedo speed dial, may be rotated with respect to the outer discs which are fastened together and are called torpedo run dials. Scales on the torpedo speed dial show average torpedo speed and ground speed; scales on the torpedo run dials show torpedo run, and release altitude.

Since distribution of the Computer Mark 1, the Torpedo Mark 13, Mod. 2A has been developed. Its speed is the same as that of the

Mark 13, Mod. 1 so that readings for the Mod. 1 also apply to the Mod. 2A.

Readings for the Mod. 1 and Mod. 2A are taken from the front face of the computer while those for the Mod. 2 are taken from the back. All markings on both sides are phosphorescent.

The computer comes in a small, leather, snap-fastened case, and is usually kept in a pocket of the cover for the Torpedo Director Mark 30 and Mods.

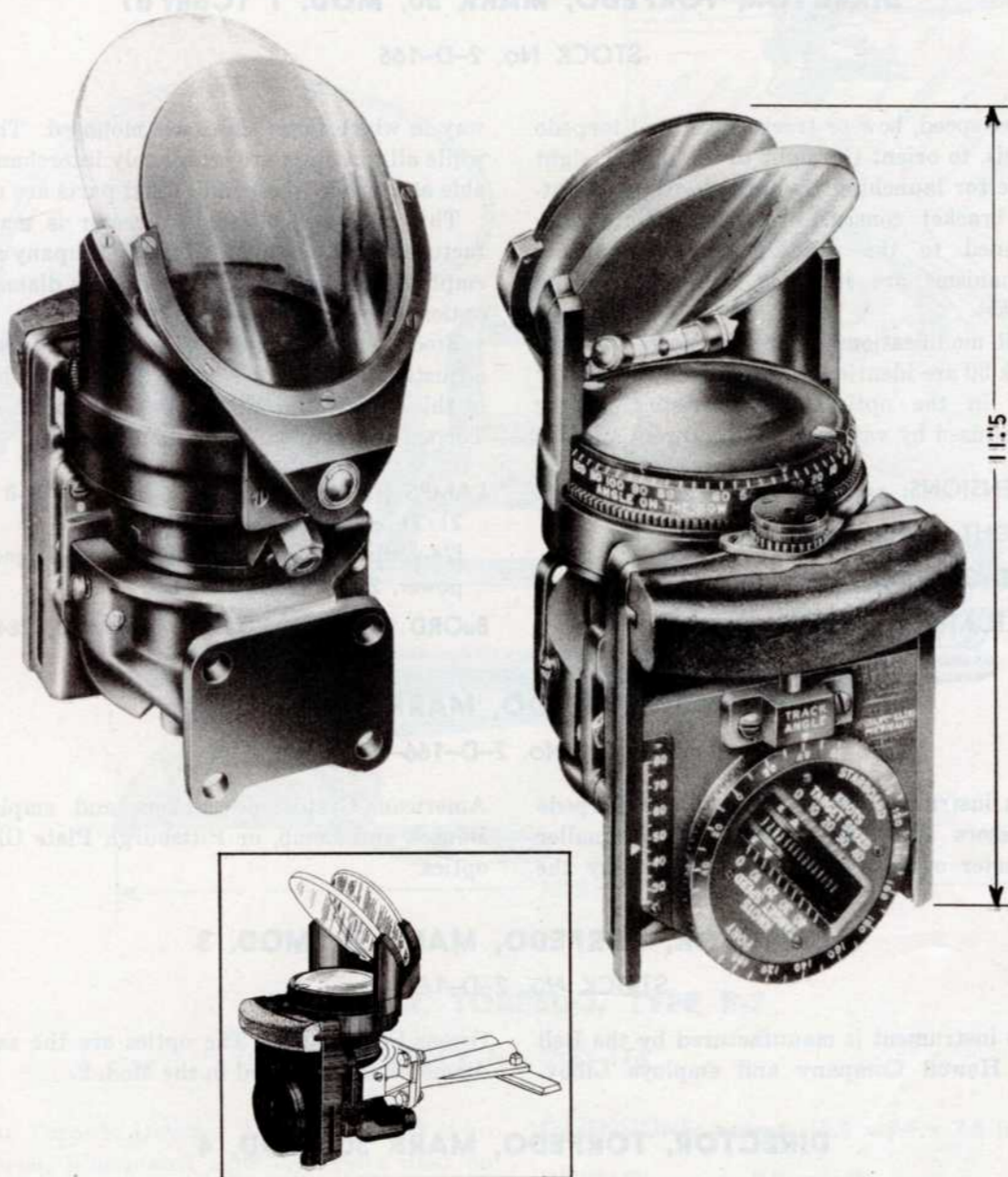
DIMENSIONS: approx. 3.5 x 3.5 x 0.2 inches.

WEIGHT (with case): approx. 1.5 ounces

PUBLICATIONS: O.P. 979.

BuORD DWG: Gen. Arr. 329792.

DIRECTOR, TORPEDO, MARK 30, MODS.



DIRECTOR, TORPEDO, MARK 30, MOD. 1

STOCK No. 2-D-166

THE Torpedo Director Mark 30, Mod. 1 is used primarily to solve the sighting angle for launching a torpedo. It also serves as a sight for fixed guns or for dive bombing. The instrument consists of a reflector sight, and angle solver, and a mounting bracket.

The reflector sight is similar to the Illuminated Sight Mark 8. A reticle image is projected upwards onto a glass reflector plate and then to the observer's eye so that he sees the image superimposed on the target. The angle-solving mechanism utilizes the values for

DIRECTOR, TORPEDO, MARK 30, MODS.

DIRECTOR, TORPEDO, MARK 30, MOD. 1 (Cont'd)

STOCK No. 2-D-166

target speed, bow or track angle, and torpedo speeds, to orient the sight to the proper sight angle for launching the torpedo. The mounting bracket consists of a flange integrally fastened to the sight yoke. Boresighting mechanisms are included in the mounting bracket.

All modifications of the Torpedo Director Mark 30 are identical in function. They differ only in the optical characteristics of the lenses used by various manufacturers and the

DIMENSIONS: approx. 11.5 x 4.3 x 6.6 inches.

WEIGHT: approx. 8 pounds.

VOLTAGE: 12 or 24 volts DC.

PUBLICATION: O.P. 982.

way in which these lenses are mounted. Thus, while all directors are completely interchangeable as a whole, their individual parts are not.

This particular torpedo director is manufactured by the Bell and Howell Company and employs Bureau of Standards' large diameter optics.

Stock numbers for torpedo directors using adjustable reflectors will be found elsewhere in this book under Reflectors, Adjustable, for Torpedo Directors, Mark 30 Mods.

LAMPS (12-volt): Mazda No. 1652 IF, S-8 IF, 21/21, candlepower, 12-16 volts DC.

(24-volt): Mazda No. 890, S-8 IF, 21/21 candlepower, 24-28 volts DC.

BuORD DWGS: SK. 90955, Gen. Arr. 328420.

DIRECTOR, TORPEDO, MARK 30, MOD. 2

STOCK No. 2-D-166-10

This instrument is the first of the Torpedo Directors Mark 30 to employ the smaller diameter optics. It is manufactured by the

American Cystoscope Makers and employs Bausch and Lomb, or Pittsburgh Plate Glass optics.

DIRECTOR, TORPEDO, MARK 30, MOD. 3

STOCK No. 2-D-166-20

This instrument is manufactured by the Bell and Howell Company and employs Libby-

Owens-Ford optics. The optics are the same diameter as those used in the Mod. 2.

DIRECTOR, TORPEDO, MARK 30, MOD. 4

STOCK No. 2-D-166-30

This instrument, manufactured by the Spencer Lens Company, differs from the Torpedo Director Mark 30, Mod. 1 in that the optics

are of smaller diameter and are made by Bausch and Lomb or Pittsburgh Plate Glass.

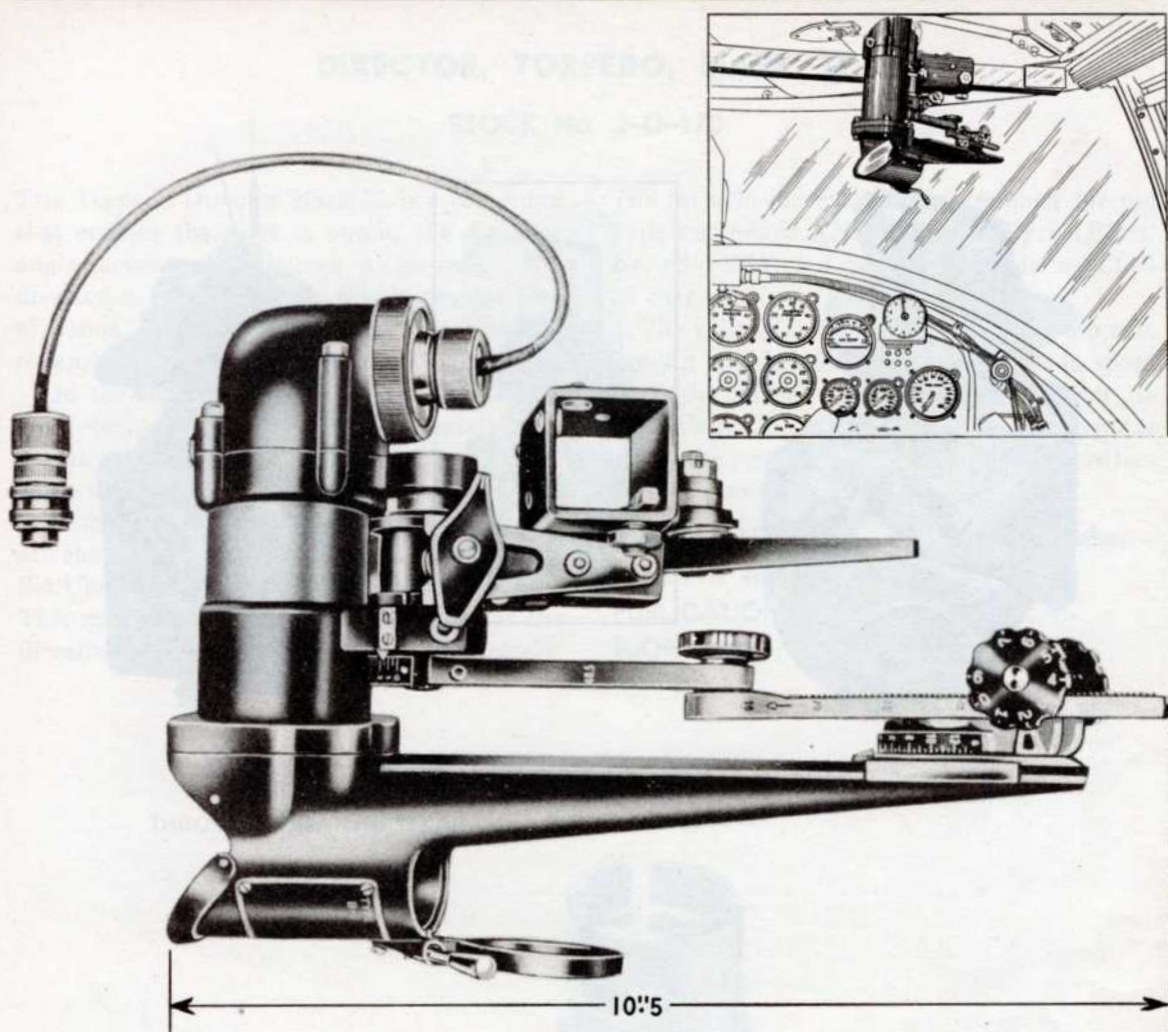
DIRECTOR, TORPEDO, MARK 30, MOD. 5

STOCK No. 2-D-166-40

The Torpedo Director Mark 30, Mod. 5 is manufactured by the Lukas Harold Company. It uses optics made by International Indus-

tries Inc., Spencer Lens Company, or Benschwanger and Company.

DIRECTOR, TORPEDO, TYPE B-2



DIRECTOR, TORPEDO, TYPE B-2

STOCK No. 2-D-176

THE Torpedo Director Army Type B-2 is an optical, illuminated sighting device used on torpedo-carrying airplanes. Mounted on a square bar forward of the pilot's or co-pilot's station, it is adjustable over the length of the mounting bar. Calculations are made by means of vector arms which are adjusted through graduated dials.

In emergencies, this director may be used as an auxiliary gun sight for the airplane's fixed guns. When so used, the director is adjusted to a position parallel to the center line of the airplane, and in alignment with the line of fire.

DIMENSIONS: approx. 10.5 x 7.9 x 7.5 inches.

WEIGHT: approx. 2.8 pounds.

ELECTRICAL CONNECTOR: AN3102-8S-1P.

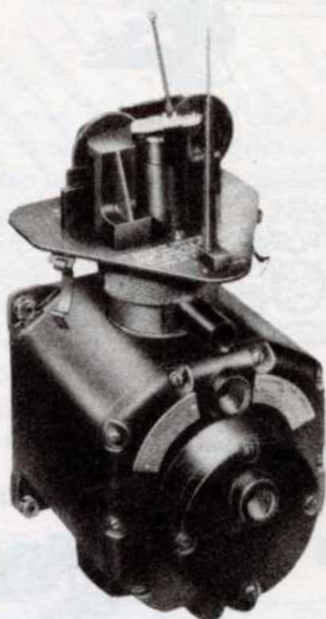
ELECTRICAL CABLE LENGTH: approx. 9 inches.

LAMP BULB: Lamp, trade number 1666, L.F., 28 volts, 21/21 candlepower, S-8 I.F. bulb DC bayonet base.

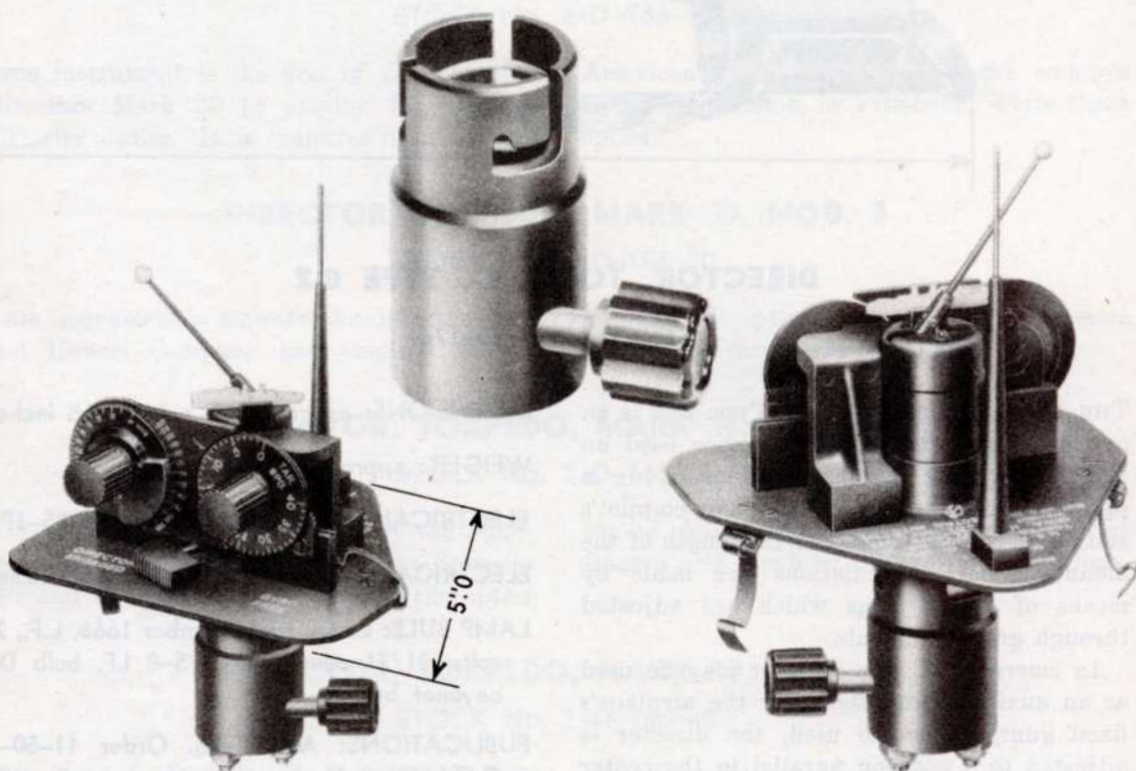
PUBLICATIONS: AAF Tech. Order 11-50-3, O.C.L. FV-6-43.

AAF DWG: 43G7095.

DIRECTOR, TORPEDO, MARK 32



HAND-SET UNSTABILIZED MOUNT



DIRECTOR, TORPEDO, MARK 32

DIRECTOR, TORPEDO, MARK 32

STOCK No. 2-D-170

THE Torpedo Director Mark 32 is a computer that enables the pilot to obtain the sighting angle necessary to launch a torpedo. The director is located in the pilot's normal line of vision above the instrument panel in the cockpit.

On the top of the director is a ball-tipped rear stem, a front post, and a small ship model. A plastic shield covers these units when the director is not in use. The stem and ship model are movable and their positions are changed by turning the handle of a Hand-Set Unstabilized Mount (Stock No. 2-M-550). This mount is not furnished as a part of the director and must be procured separately.

The torpedo director is also designed for use with a standard AN Directional Gyro (FSSC No. 88-1-965) but the gyro must be modified to carry it.

The values for release altitude, torpedo run, ground speed, and uncorrected torpedo speed must be placed in the director prior to operation. The first 3 are set on the computer dials; the last is set by selection of the position of the front post.

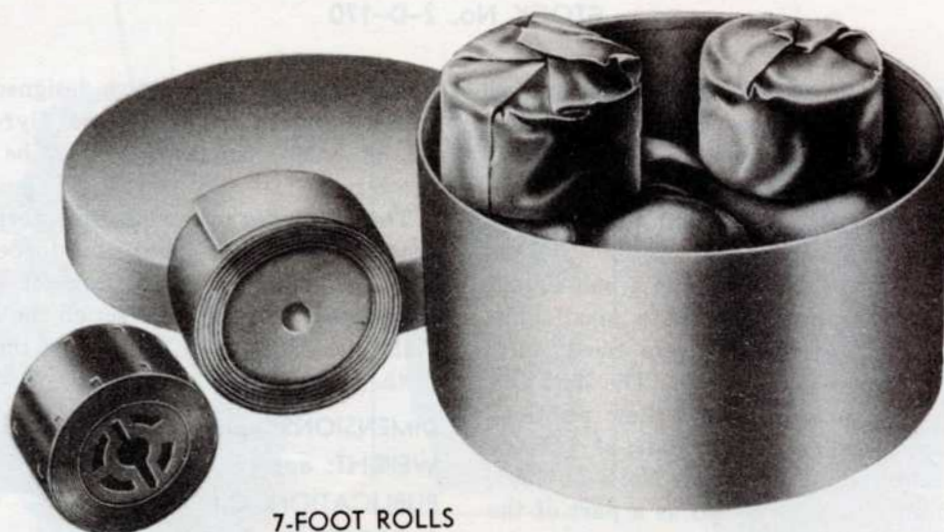
DIMENSIONS: approx. 7.0 x 5.0 x 5.0 inches.

WEIGHT: approx. 8.0 pounds.

PUBLICATION: O.P. 1045.

BuORD DWG: Gen. Arr. 375001.

FILM, GUN CAMERA



7-FOOT ROLLS



30-FOOT ROLLS

FILM, GUN CAMERA

STOCK No. 2-F-163 (7-FOOT ROLL) 2-F-172 (30-FOOT ROLL)

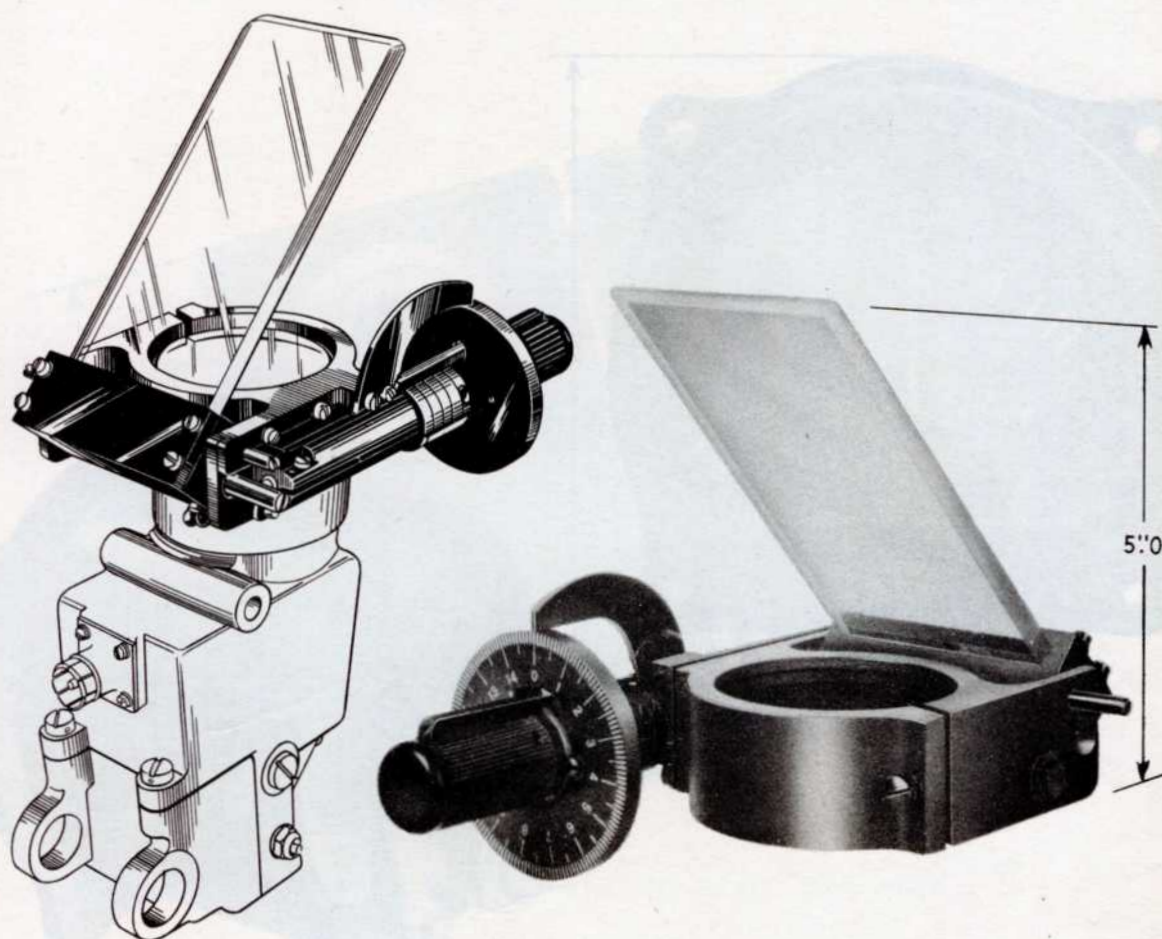
THIS Gun Camera Film is Agfa Ansco Hypan type with a daylight speed equivalent to Weston Index 32. The film is 16 mm wide and has approximately 40 frames per foot. It is a reversal type emulsion film, and replaces the negative type. It will yield a positive image strip more suitable for screen projection

than the negative.

The film comes in 7-foot and 30-foot rolls.

PUBLICATIONS: BuAer. Photography Technical Bulletins NavAer. 10-1R-40 and 10-1R-41; BuOrd. O.C.L. V-88, O.T.I. V-21-43.

HEAD, BOMBSIGHT, TYPE A-1



HEAD, BOMBSIGHT, TYPE A-1

STOCK No. 2-H-845

THE Bombsight Head Type A-1, which is used on Illuminated Sights Types N-3A and N-3B enables the sight to be used either as a low altitude bombsight or as a fixed gun sight.

The head is mounted on the sight so that the center of the reflector plate is at the pilot's eye level. Adjustment for bombing from various altitudes and speeds is accomplished by changing the reflector angle. Variation is controlled by a graduated dial and knob.

This bombsight head is composed of the following parts: an adjustable gun lock cam

to stop and lock the head in gunnery position, adjustable cams to serve as detents for different bombing conditions, a cam release latch, the reflector frame, and a glass reflector plate.

This head may also be used on Illuminated Sights Type N-6 and N-6A if supplied with a Bombsight Head Adapter Ring (AAF Dwg. 43B15328).

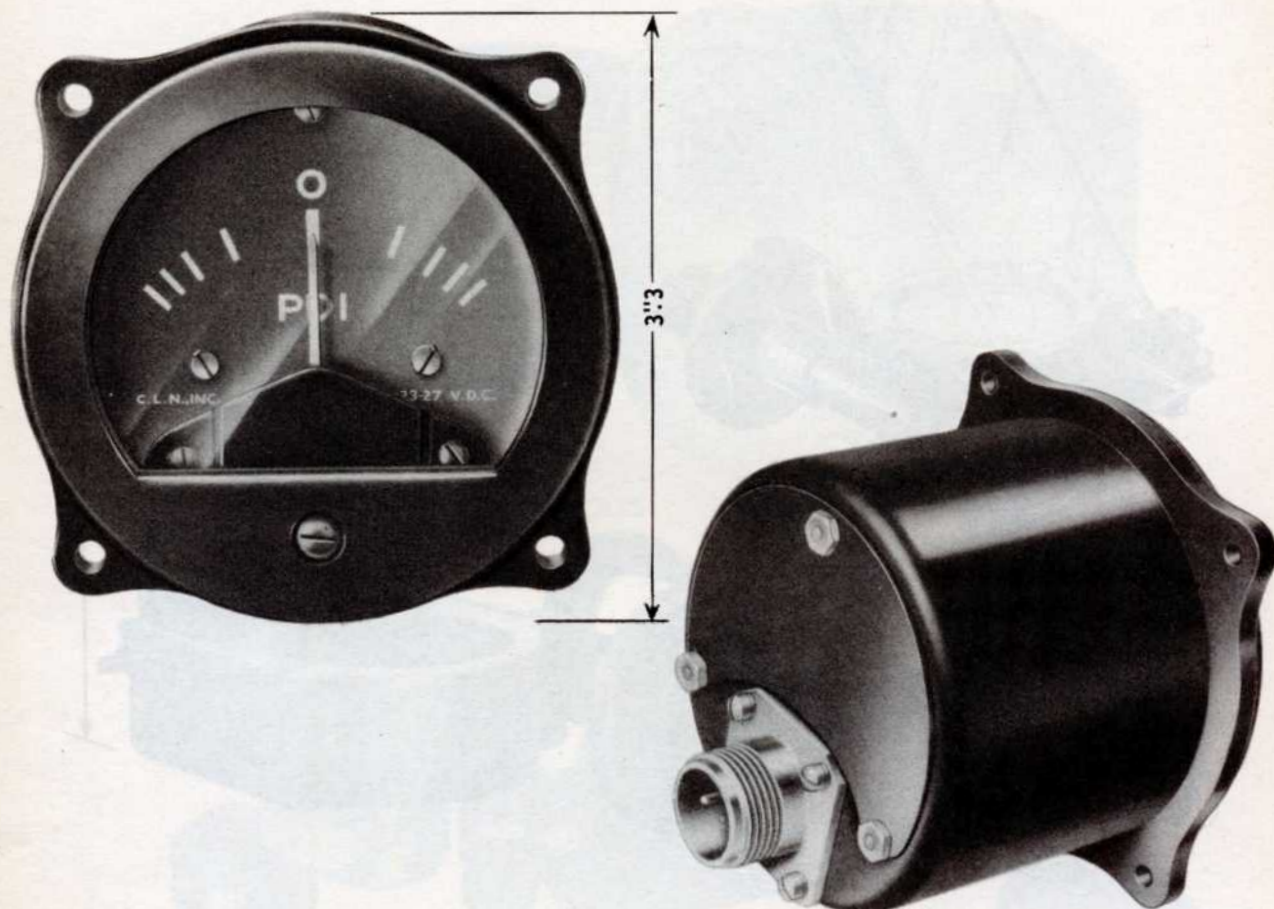
DIMENSIONS: approx. 6.6 x 5.0 x 5.4 inches.

WEIGHT: approx. 1.5 pounds.

PUBLICATION: AAF Tech. Order 11-30-12.

AAF DWG: 43D12264.

INDICATOR, BOMBSIGHT PILOT DIRECTOR, MARK 15, MOD. 5



INDICATOR, BOMBSIGHT PILOT DIRECTOR, MARK 15, MOD. 5

STOCK No. 2-I-115

THE Bombsight Pilot Director Indicator (PDI) Mark 15, Mod. 5 is used with the bombsight and stabilizer to indicate to the pilot any course change desired by the bombardier. The indicator, mounted on the pilot's instrument panel, is a voltmeter whose needle is deflected to the right or left in response to signals originating in the directional stabilizer. It indicates the direction the airplane is to be turned in azimuth. Movement of the airplane in the desired direction returns the needle to

the zero position.

This instrument is not illuminated, but its markings are phosphorescent.

DIMENSIONS: approx. 3.3 x 3.3 x 3.0 inches.

WEIGHT: approx. 1.0 pound.

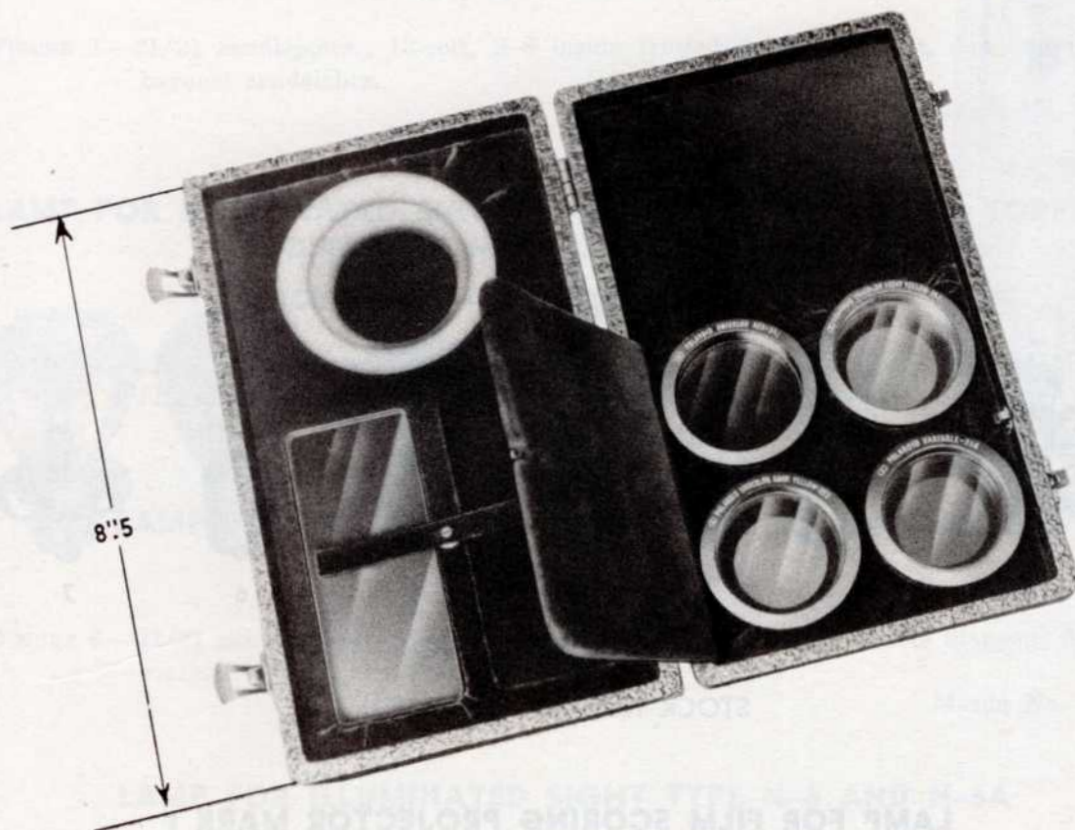
VOLTAGE: 24 volts DC.

ELECTRICAL RECEPTACLE: AN 3102-128-3P.

PUBLICATION: O.P. 649.

BuORD DWG: Gen. Arr. 300206.

KIT, BOMBSIGHT COLOR FILTER, MARK 1



KIT, BOMBSIGHT COLOR FILTER, MARK 1

STOCK No. 2-K-305

THE Bombsight Color Filter Kit, Mark 1 contains light filters for use with the bombsight. The following units are included:

1. A rubber eye buffer for holding filters.
2. Three color filters for different degrees of contrast and haze penetration:
 - No. 341—Red
 - No. 352—Dark Yellow
 - No. 353—Light Yellow
3. A variable filter, No. 314, consisting of a

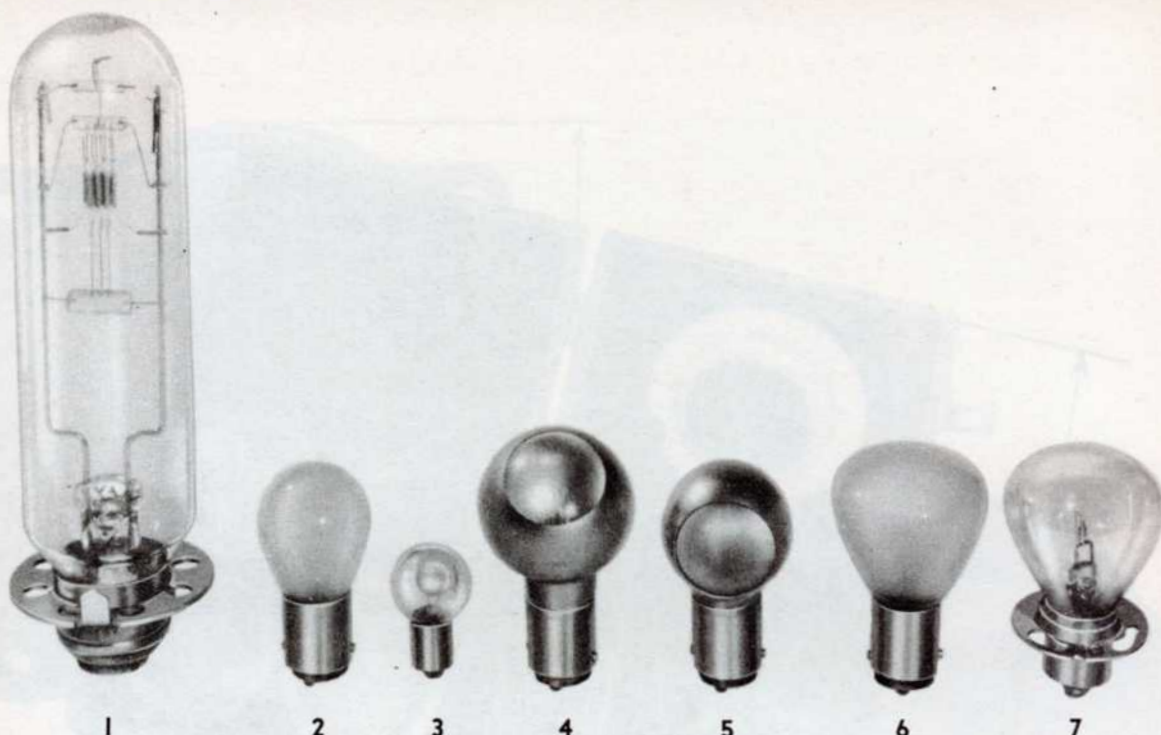
pair of Polaroid glasses, for reducing reflected glare and controlling brightness.

4. An objective filter, No. 354, for reducing reflected glare. When used, this filter replaces the lower bombsight housing window,

DIMENSIONS (box): approx. 8.5 x 5.0 x 2.0 inches.

WEIGHT: approx. 2.0 pounds.

LAMPS, ELECTRIC



LAMPS, ELECTRIC

STOCK Nos. (AS INDICATED)

LAMP FOR FILM SCORING PROJECTOR MARK I

STOCK No. 2-L-120L (FORMERLY 17-L-4812-20)

FIGURE 1.—Electric, incandescent, tungsten filament, large, special service, 500-watt, 115-volt, T-10, 3.5 light center length, burn base up, medium prefocus.

Bell and Howell No. 03830.

LAMP FOR ILLUMINATED SIGHT MARK 9, MOD. 1 AND MOD. 3

STOCK No. 17-L-6732-50

FIGURE 2.—21/6 candlepower, 13-volt, S-8 inside frosted, double filament, double contact.

Mazda No. 1176.

LAMP FOR ILLUMINATED SIGHT MARK 9 AND MARK 9, MOD. 2

STOCK No. 2-L-345L (FORMERLY 17-L-6733-10)

FIGURE 5.—21/6 candlepower, 24- to 28-volt, G-9, bulb partially silvered with lightly frosted bulls-eye opening, double filament, double contact, bayonet candelabra.

Mazda No. 846.

LAMPS, ELECTRIC (CONT'D)

LAMP FOR ILLUMINATED SIGHT MARK 8 AND MODS.

STOCK No. 17-L-6733-35

FIGURE 2.—21/21 candlepower, 13-volt, S-8 inside frosted double filament, double contact, bayonet candelabra.

Mazda No. 1652.

LAMP FOR ILLUMINATED SIGHT MARK 8 AND MODS. AND TORPEDO DIRECTOR MARK 30, AND MODS.

STOCK No. 2-L-400L (FORMERLY 17-L-6734-35)

FIGURE 4.—21/21 candlepower, 24- to 28-volt, GB-11 bottom half outside silvered, double filament, double contact, bayonet candelabra.

Mazda No. 890.

LAMP FOR ILLUMINATED SIGHTS TYPE N3A AND N3B

STOCK No. 17-L-6733-50

FIGURE 6.—21/21 candlepower, 12- to 16-volt, RP-11, inside frosted, double filament, double contact, bayonet candelabra.

Mazda No. 1120.

LAMP FOR ILLUMINATED SIGHT TYPE N-6 AND N-6A

STOCK No. 2-L-490L (FORMERLY 17-L-6734-150)

FIGURE 5.—21/21 candlepower, 24- to 28-volt, bulb outside silvered except for $\frac{7}{8}$ -inch diameter frosted spot, double filament, double contact, bayonet base.

Mazda No. 844.

LAMP FOR AUTOMATIC COMPENSATING SIGHT TYPE K-4

STOCK No. 2-L-800L (FORMERLY 17-L-6738)

FIGURE 7.—32 candlepower, 12- to 16-volt, RP-11, inside frosted, C-2 filament, single contact, prefocused base.

Mazda No. 1327.

LAMP FOR GUN SIGHT MARK 18

STOCK No. 2-L-250L (FORMERLY 17-L-6731)

FIGURE 3.—13 candlepower, nominal 22-volt, special service, G-5 $\frac{1}{2}$, frosted spot, C-2 V-type single support filament, single contact, bayonet base.

Mazda No. 480.

MAGAZINE, GUN CAMERA FILM, AN TYPE A-6



MAGAZINE, GUN CAMERA FILM, AN TYPE A-6

STOCK No. 2-M-160

THE AN Gun Camera Film Magazine Type A-6 is a film container for use with the AN type gun camera. It is a metal box containing 2 shafts on which the film spools are

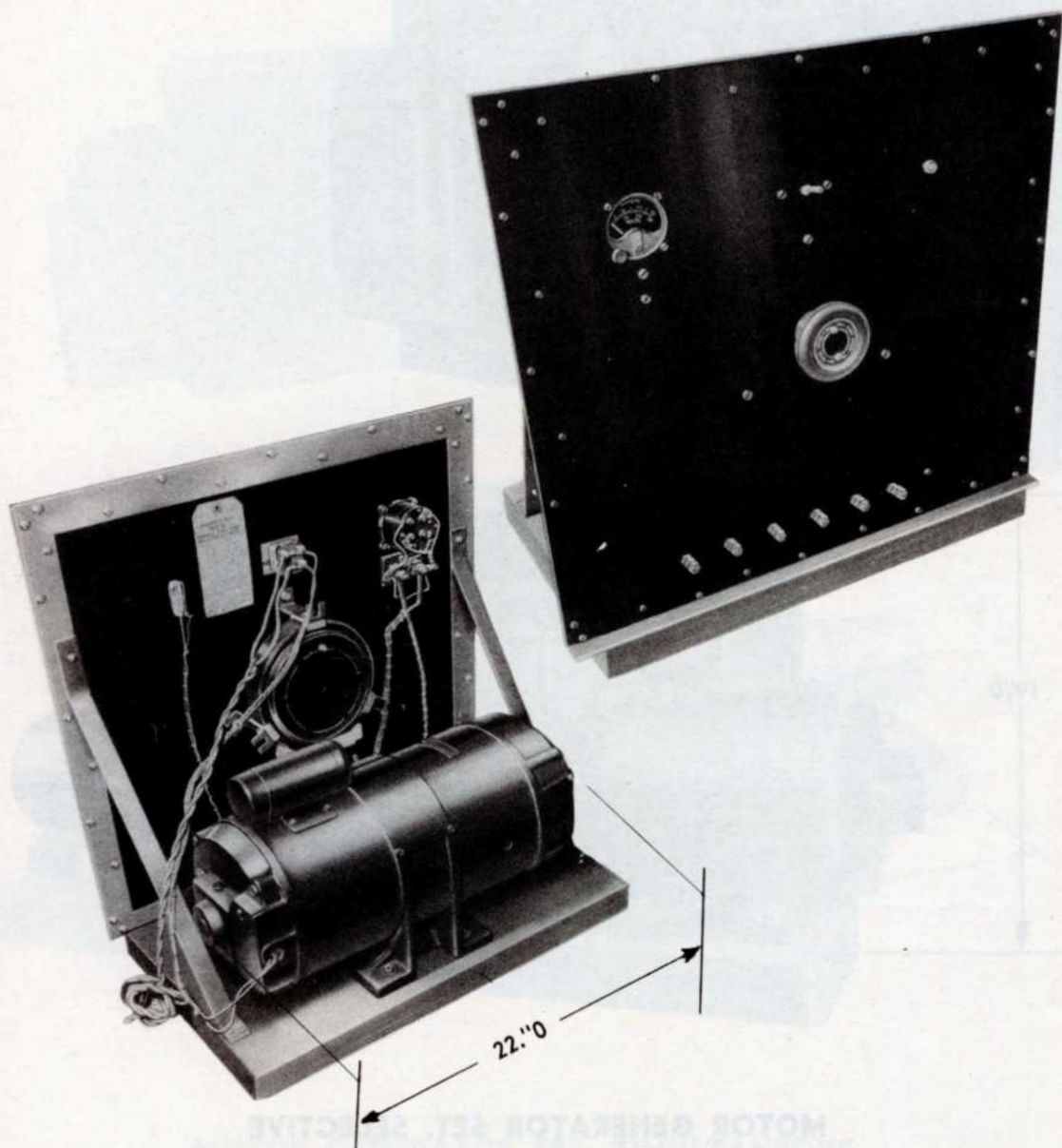
DIMENSIONS: approx. 4.8 x 3.3 x 0.8 inches.

WEIGHT: approx. 0.2 pound.

mounted. The film is guided from one spool, past the aperture, to the second spool by means of a sprocket and guide rollers. It has a capacity of 50 feet of film.

PUBLICATIONS: O.P. 864, O.C.L. V-88, O.T.I. V-21-43, AAF Tech. Order 10-1-54.

MOTOR GENERATOR SET, NON-SELECTIVE



MOTOR GENERATOR SET, NON-SELECTIVE

STOCK No. 2-M-335

THE Non-Selective Motor Generator Set provides a source of power for use in the checking and maintenance of bombsights and SBAE. It consists of an electric motor and generator mounted on a common base.

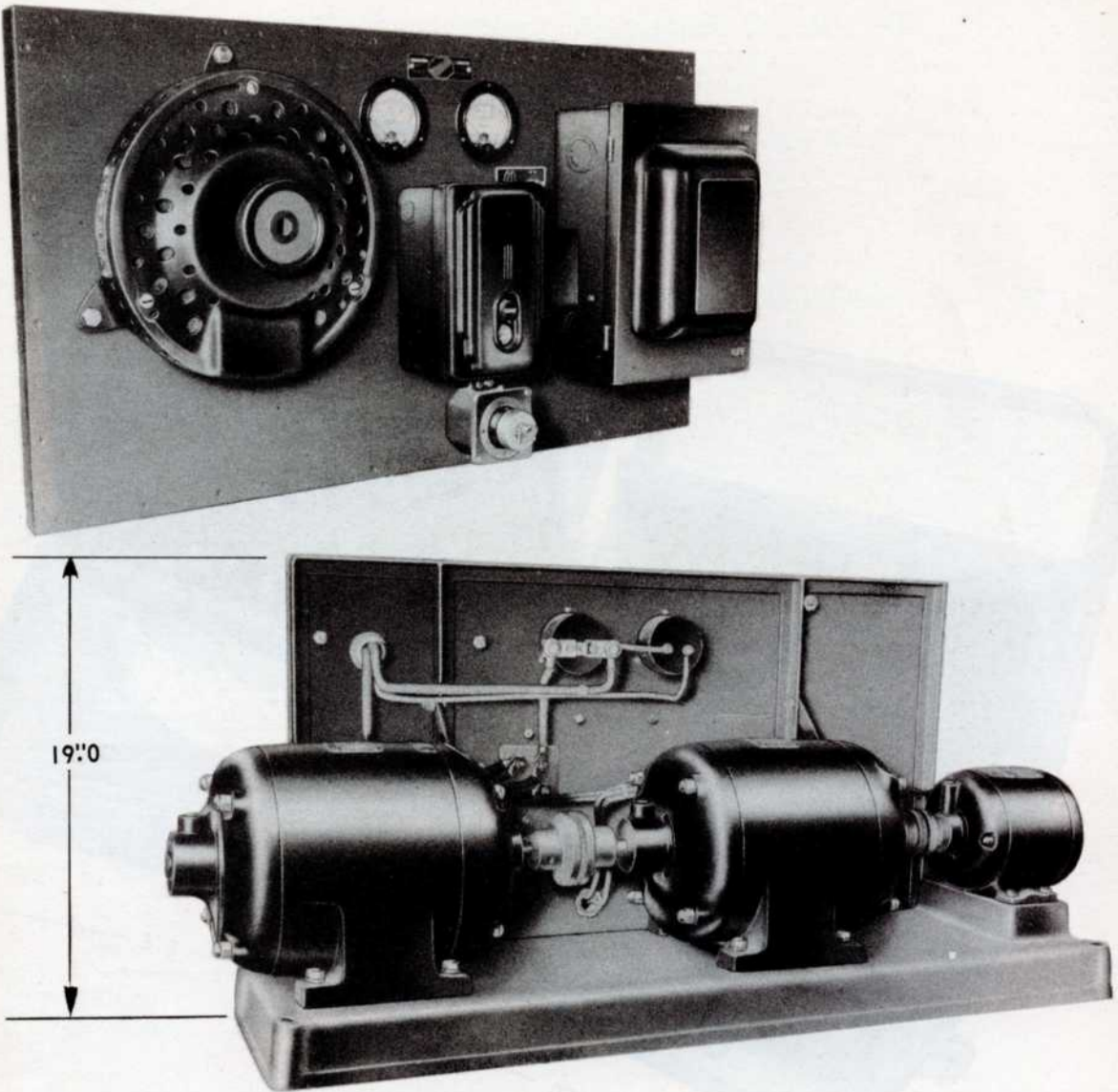
The unit operates on 115-230-volt, 60-cycle, single-phase AC.

DIMENSIONS: approx. 9.5 x 22.0 x 12.0 inches.

WEIGHT (crated): approx. 60 pounds.

VOLTAGE OUTPUT: 24 volts, 9 amperes DC.

MOTOR GENERATOR SET, SELECTIVE



MOTOR GENERATOR SET, SELECTIVE

STOCK No. 2-M-340

THE Selective Motor Generator Set provides a source of power in bombsight squadron shops for use in the checking and maintenance of bombsights and SBAE. It is also used to operate bombsights in storage to keep them in serviceable condition. It consists of an electric motor and a generator mounted on a common base. A master switch permits selection of either 12-volt or 24-volt DC.

The unit operates on 220-volt, 60-cycle, 3-phase AC.

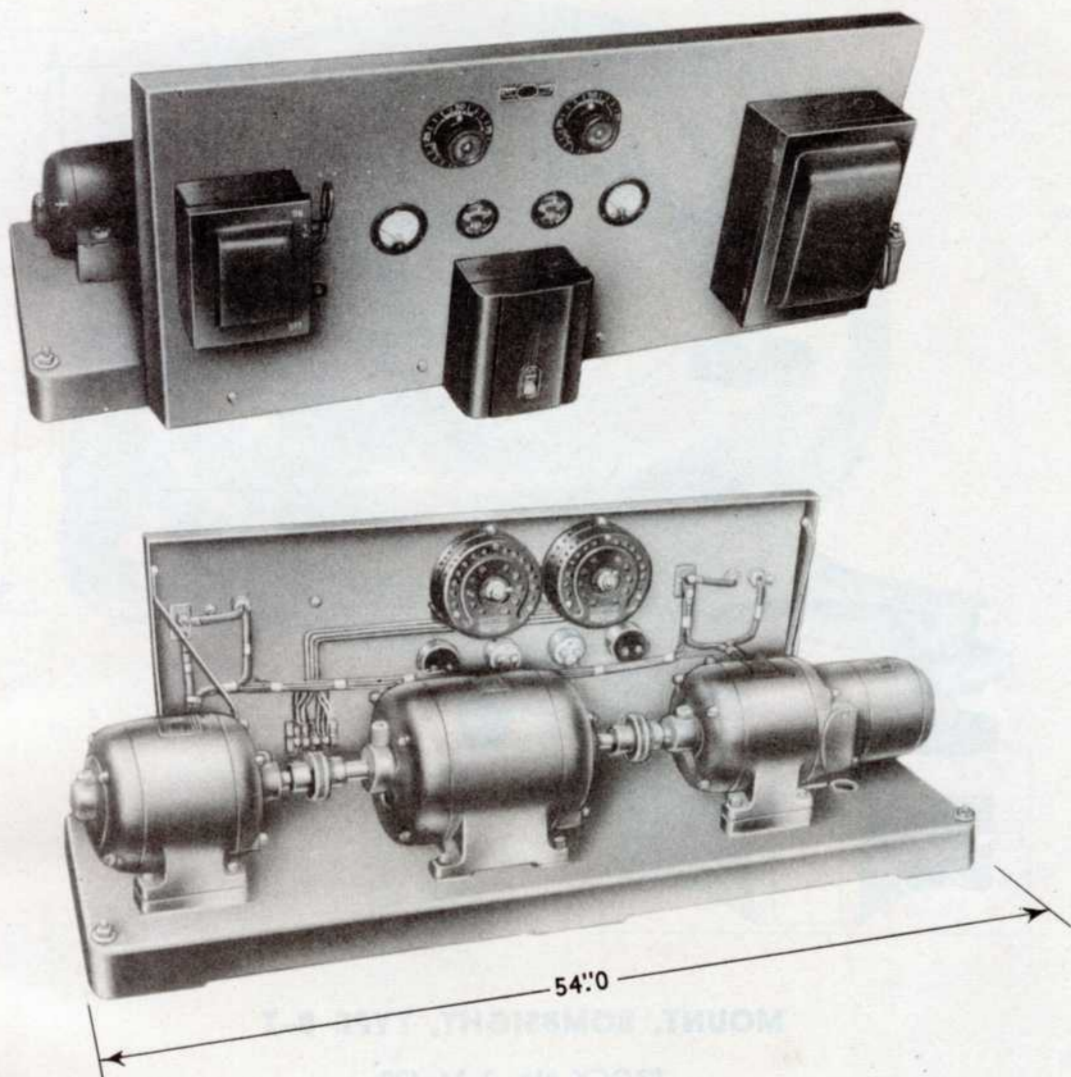
DIMENSIONS: approx. 42.0 x 20.0 x 19.0 inches.

WEIGHT (crated): approx. 200 pounds.

OUTPUT: 12 volts, 50 amperes, DC or 24 volts, 25 amperes, DC.

PUBLICATION: O.H.I. V-7-43.

MOTOR GENERATOR SET, SIMULTANEOUS



MOTOR GENERATOR SET, SIMULTANEOUS

STOCK No. 2-M-345

THE Simultaneous Motor Generator Set provides a source of power in overhaul shops for the checking and overhaul of bombsights and SBAE. It is also used to operate bombsights in storage to keep them in serviceable condition. It consists of an electric motor and 2 generators mounted on a common base. Both generators may supply power simultaneously,

one supplying 12 volts and the other 24 volts.

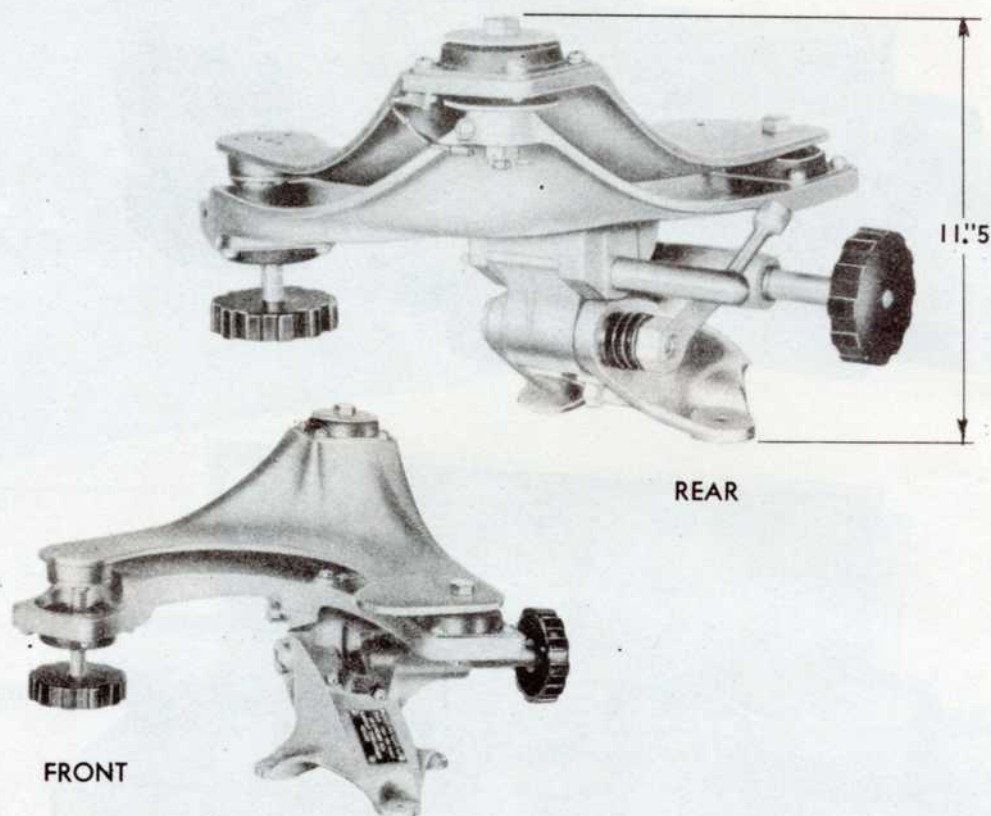
The unit operates on 220-volt, 60-cycle, 3-phase alternating current.

DIMENSIONS: approx. 54.0 x 22.0 x 22.0 inches.

WEIGHT (crated): approx. 450 pounds.

OUTPUT: 12 volts, 50 amperes DC, 24 volts, 25 amperes DC.

MOUNT, BOMBSIGHT, TYPE B-7



MOUNT, BOMBSIGHT, TYPE B-7

STOCK No. 2-M-428

THE Bombsight Mount Type B-7 is a floor-type mount used on PB4Y-2 airplanes, for supporting and leveling the Bombsight and Stabilizer Mark 15, Mod. 7. The mount reduces airplane vibration effects during flight, and landing or take-off shocks which might otherwise cause injury to the sight's delicate mechanism.

The assembly consists of 2 triangular brackets, 3 anti-vibration Lord type mounts, a pedestal or base plate, 2 adjusting knobs, and a lock.

The brackets are separated at each corner by the rubber mounts. One corner, however,

can be raised or lowered by one of the adjusting knobs. The brackets are hinged to the pedestal and can be tilted forward or backward by the other adjusting knob. The lock holds the brackets in the desired position of tilt.

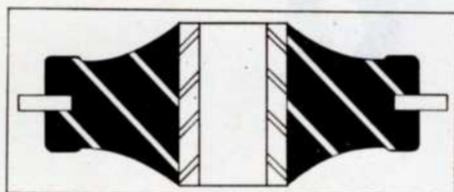
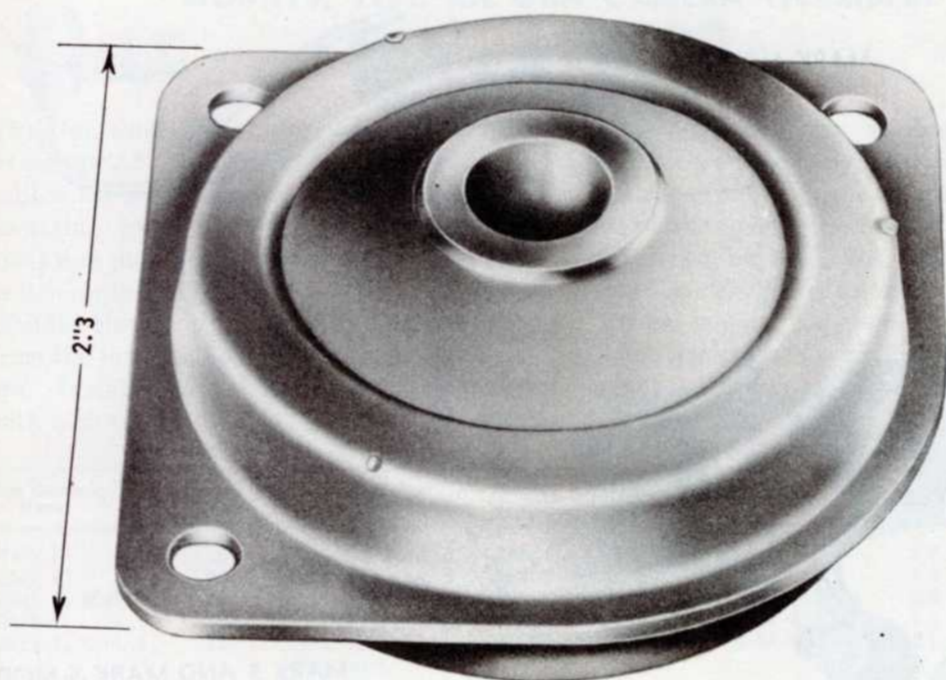
The upper bracket is drilled with 3 holes for bolting the mount to the bottom of the stabilizer.

DIMENSIONS: approx. 12.3 x 11.5 x 8.5 inches.

WEIGHT: approx. 9.8 pounds.

AAF DWG: 43J18160.

MOUNT, BOMBSIGHT, ANTI-VIBRATION, LORD TYPE



MOUNT, BOMBSIGHT, ANTI-VIBRATION, LORD TYPE

STOCK No. 2-M-400

THE Anti-Vibration Bombsight Mount, commonly known as a Lord flat plate type shear mounting, is used to protect the delicate mechanism of the bombsight from injury due to vibration and shock.

The mount consists of a resilient rubber grommet held in a flat, Monel plate, having rounded-off corners. A steel sleeve extends through and is bonded to the grommet at its center. Four of these mounts are placed between the bottom of the bombsight stabilizer

and a mounting bracket in the airplane. This bracket is furnished by the aircraft manufacturer.

DIMENSIONS (each): approx. 2.3 x 2.3 x 1.0 inches.

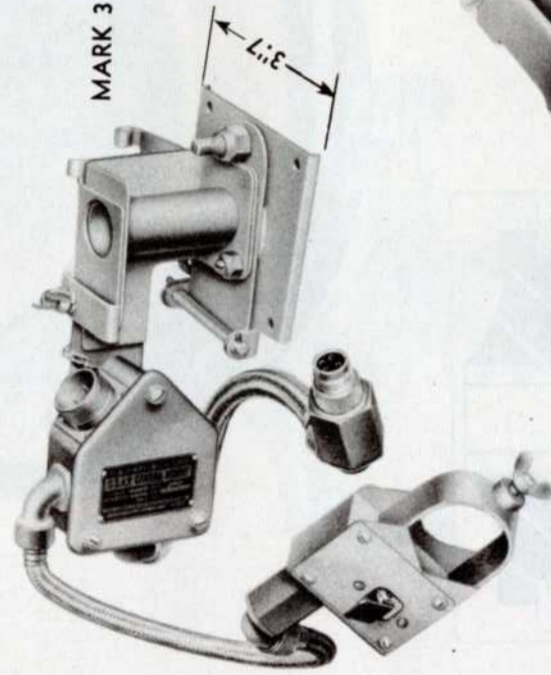
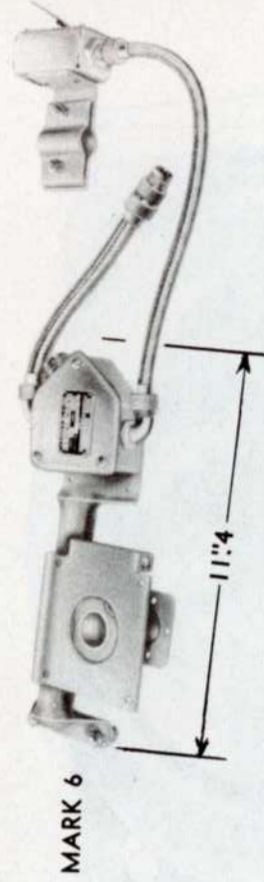
WEIGHT (each): approx. 0.2 pound.

AN PART No.: AN8008M16.

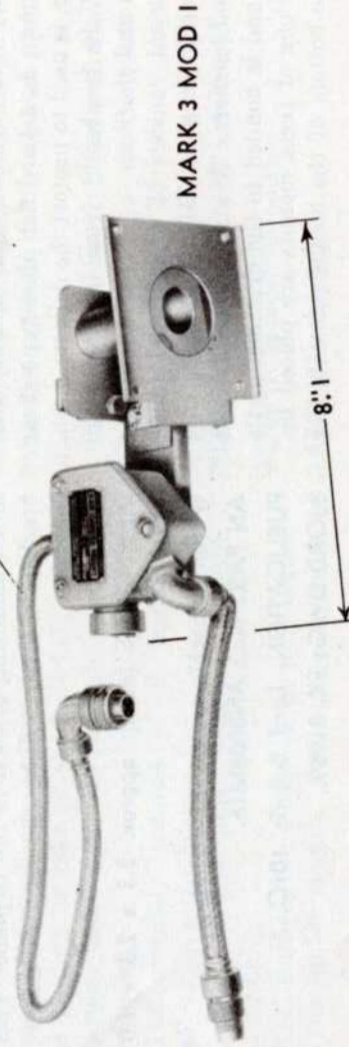
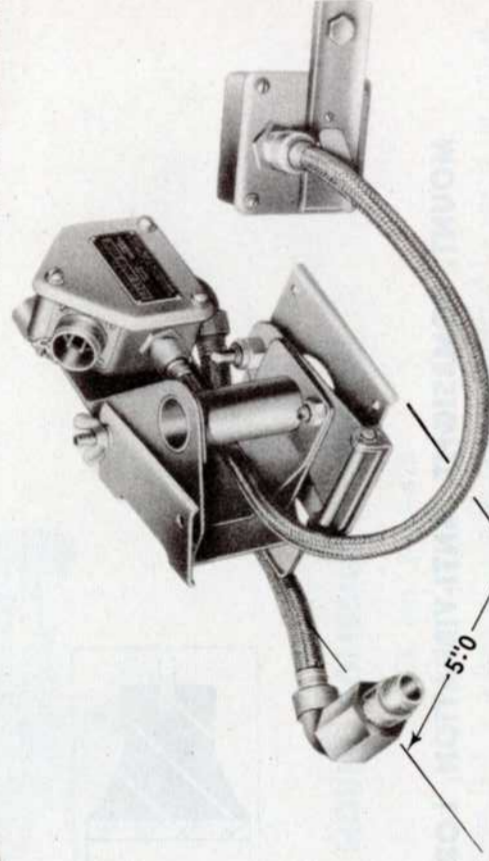
PUBLICATION: Lord Bulletin 101C.

BuORD DWG: SK. 81959.

MOUNTS, TYPE AN GUN CAMERA (FLEXIBLE)



MARK 5 AND MARK 5 MOD 1



MOUNTS, TYPE AN GUN CAMERA (FLEXIBLE)

MOUNTS, TYPE AN GUN CAMERA (FLEXIBLE)

STOCK No. (See table Below)

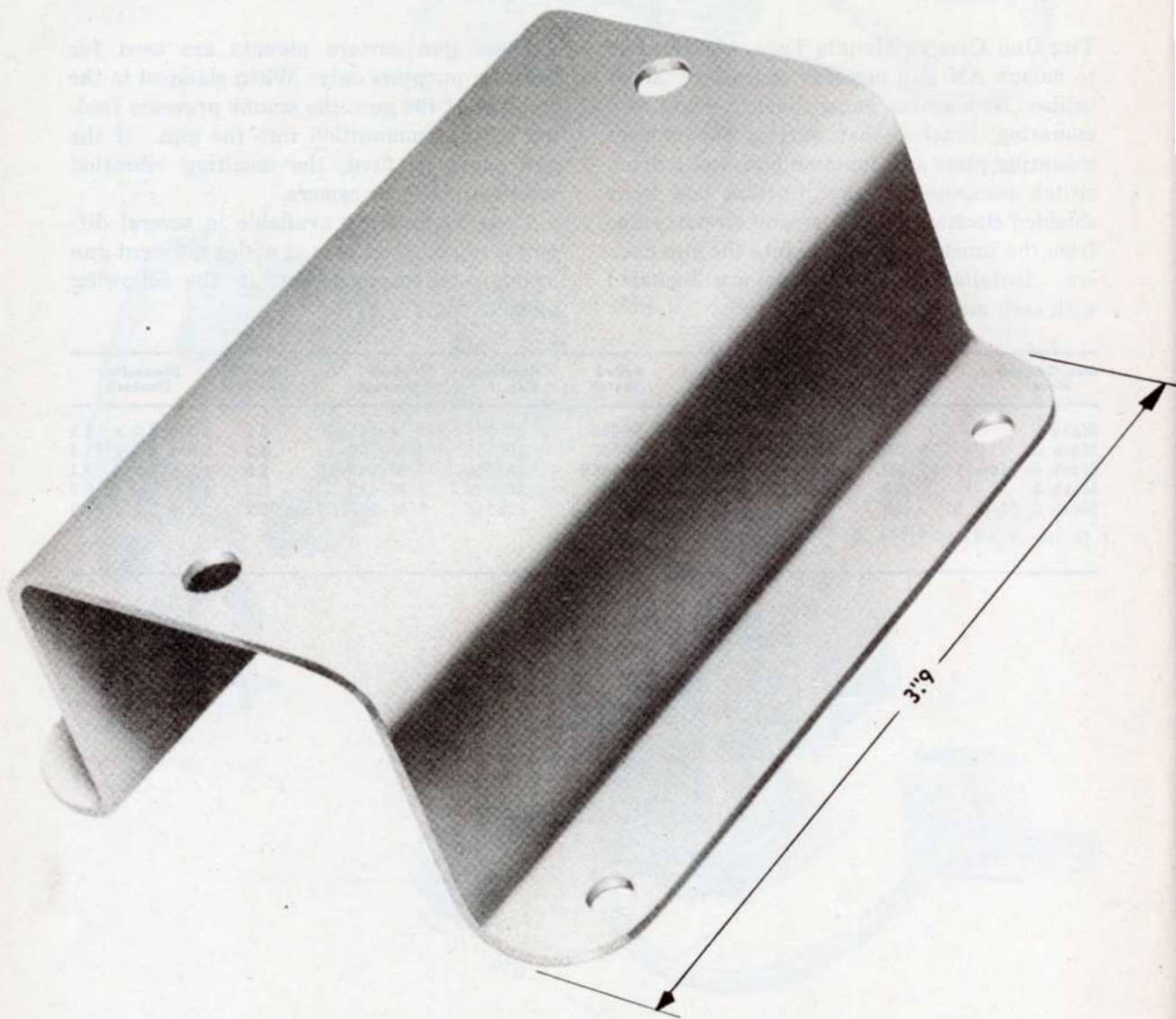
THE Gun Camera Mounts Type AN are used to mount AN gun cameras on caliber .30 or caliber .50 machine guns. Each consists of a mounting bracket that carries the camera mounting plate and junction box, and a firing switch connected to the junction box by a shielded electric cable. A second electric cable from the junction box plugs into the gun camera. Installation instructions are included with each mount.

These gun camera mounts are used for training purposes only. When clamped to the receiver of the gun, the mount prevents feeding of the ammunition into the gun. If the gun could be fired, the resulting vibration would damage the camera.

These mounts are available in several different types. Each is used with a different gun mount adapter, as shown in the following table:

Gun Camera Mount	Gun Cal.	Used with Gun Mount Adapter	BuOrd Sketch	Drawings Gen. Arr.	Stock Number	Weight (pounds)	Dimensions (inches)
Mark 5	.50	Mark 10, Mod. 1	90806	300525	2-M-445	2.8	4.5 x 5.0 x 8.1
Mark 6	.50	Mark 6, Mod. 2	90807	300530	2-M-450	3.3	3.0 x 6.4 x 11.4
Mark 5, Mod. 1	.50	Mark 10, Mod. 2	108668	387534	2-M-445-10	3.0	4.5 x 5.0 x 8.1
Mark 3	.30	Mark 9	90804	300519	2-M-435	2.5	4.6 x 3.7 x 8.6
Mark 3, Mod. 1	.30	Mark 11 and Mods. and Mark 14	91062	328545	2-M-437	2.1	4.2 x 3.7 x 8.1

MOUNT, GUN CAMERA, MARK 2, MOD. 1



MOUNT, GUN CAMERA, MARK 2, MOD. 1

STOCK No. 2-M-432

THE Fixed Gun Camera Mount Mark 2, Mod. 1 is used to mount the AN type gun camera. It is a U-shaped piece of metal with several holes for mounting purposes. It is usually employed with the Gun Camera Mount Mark 7.

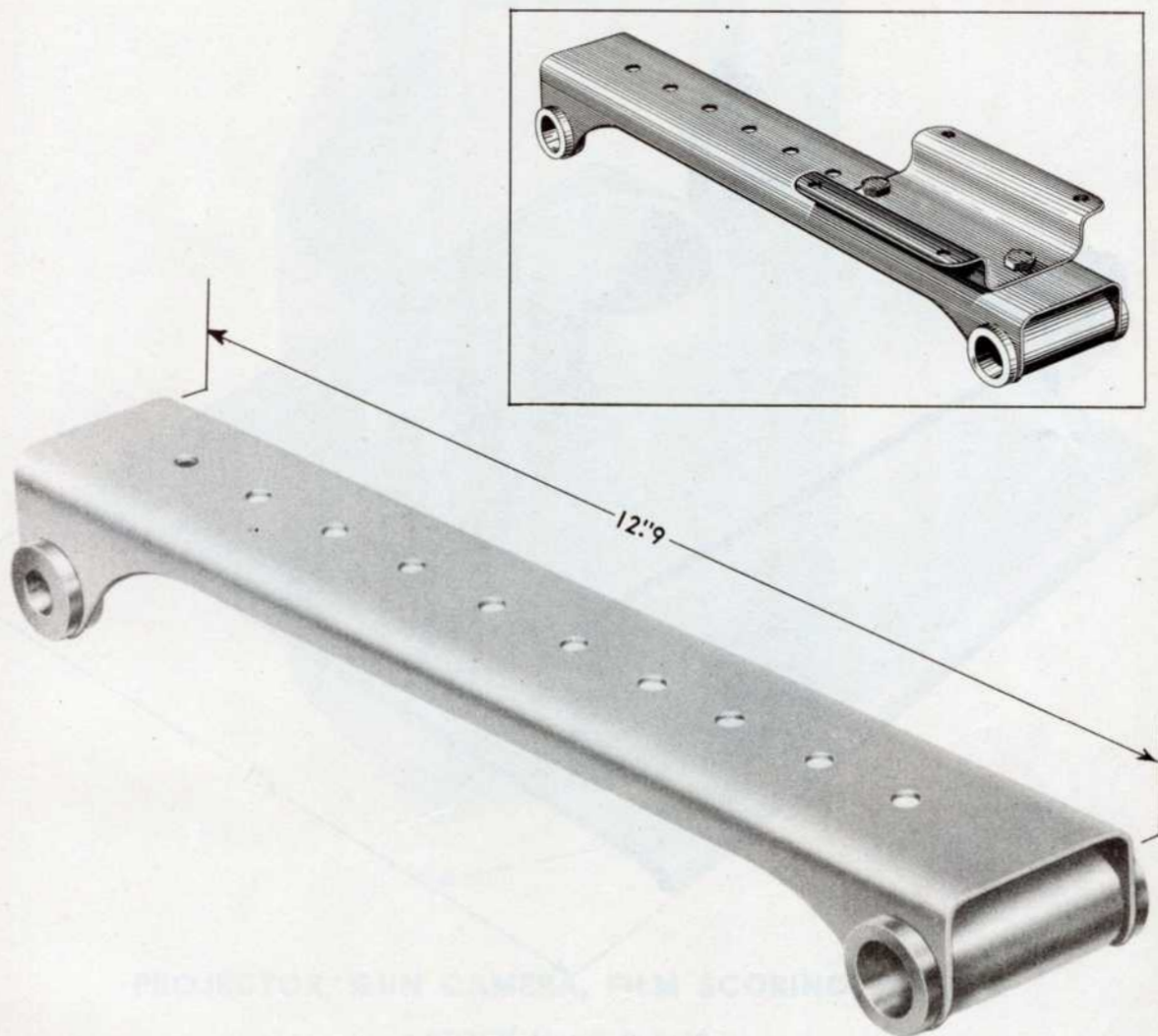
DIMENSIONS: approx. 1.6 x 3.3 x 3.9 inches.

WEIGHT: approx. 0.1 pound.

PUBLICATION: O.H.I. V-3-43.

BuORD DWGS: SK. 91330, Gen. Arr. 328865.

MOUNT, GUN CAMERA, MARK 7



MOUNT, GUN CAMERA, MARK 7

STOCK No. 2-M-455

THE Gun Camera Mount Mark 7 is used in combination with Gun Camera Mount Mark 2, Mod. 1 as a fixed mount for AN gun cameras. It is made of pressed sheet steel and is drilled with a series of holes to permit the camera to be mounted in different positions on various wing structures.

This mount is usually placed in the wing of the airplane and is held by a rear mounting

post and a trunnion bolt. It may be installed externally either on the fuselage or wing on several types of airplanes.

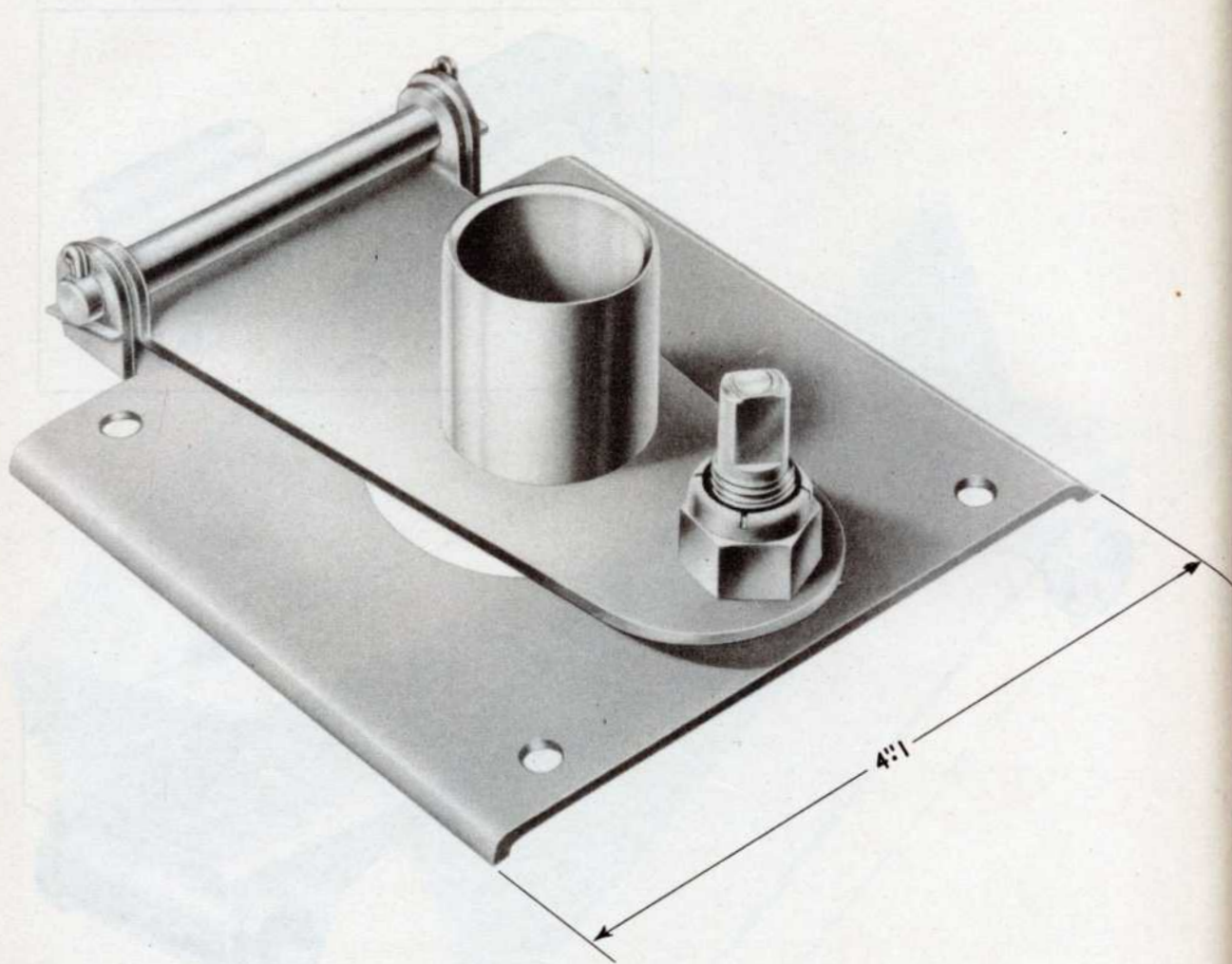
Provisions for boresighting are incorporated in the trunnion bolt and rear mounting post.

DIMENSIONS: approx. 12.9 x 2.3 x 2.0 inches.

WEIGHT: approx. 1.0 pound.

BuORD DWGS: Gen. Arr. 300520 and 189779.

MOUNT, TYPE AN GUN CAMERA, MARK 8



MOUNT, TYPE AN GUN CAMERA, MARK 8

STOCK No. 2-M-458

THE Gun Camera Mount Mark 8 provides a fixed mounting for a type AN gun camera. It consists of a short piece of metal tubing at the top of which is a welded metal plate with a hinge at one end and a bolt at the other. Fastened to this plate by the hinge and bolt is a larger plate having holes at each corner for attachment of the camera.

The tube is clamped to a bracket on the air-

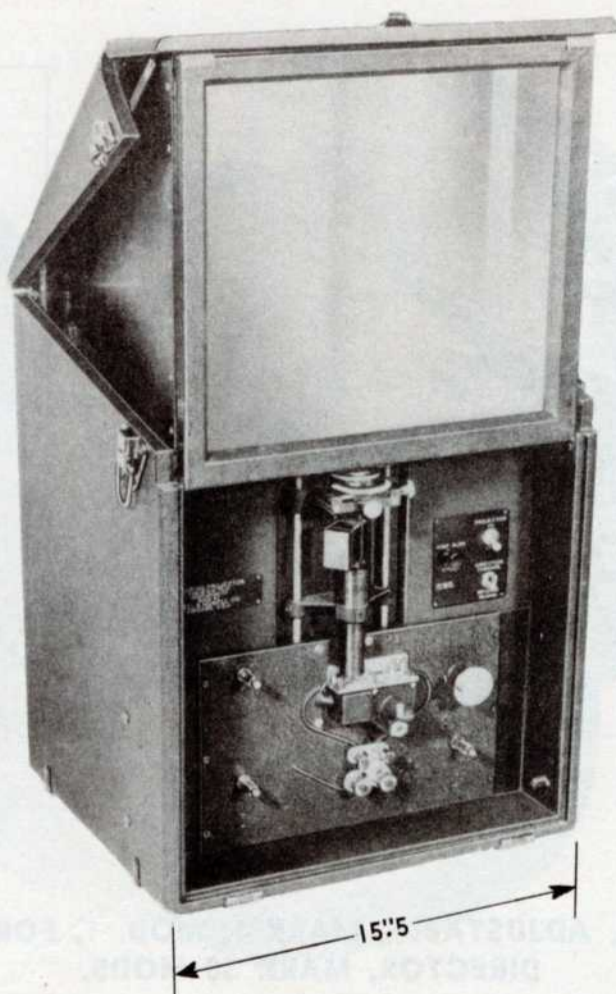
plane with its axis vertical. Horizontal bore-sighting is effected by rotating the tube in its clamp. Vertical boresighting is effected by adjusting the bolt between the camera plate and fixed plate.

DIMENSIONS: approx. 5.5 x 4.1 x 1.3 inches.

WEIGHT: approx. 0.6 pound.

BuORD DWG: Gen. Arr. 328858.

PROJECTOR, GUN CAMERA, FILM SCORING, MARK 1



PROJECTOR, GUN CAMERA, FILM SCORING, MARK 1

STOCK No. 2-P-5430

THE Film Scoring Projector Mark 1 (also called Film Scoring Viewer) is used to analyze and score gun camera film exposed during training or combat. It is also a motion picture projector.

The projector, which is portable, is contained in a box provided with several removable or folding panels for access to the mechanism. One panel allows inspection of the motor assembly, and another, by folding out of the way, allows the machine to be used with a wall screen. Folding top and front sections provide supports for a self-contained viewing screen and also give access to the controls.

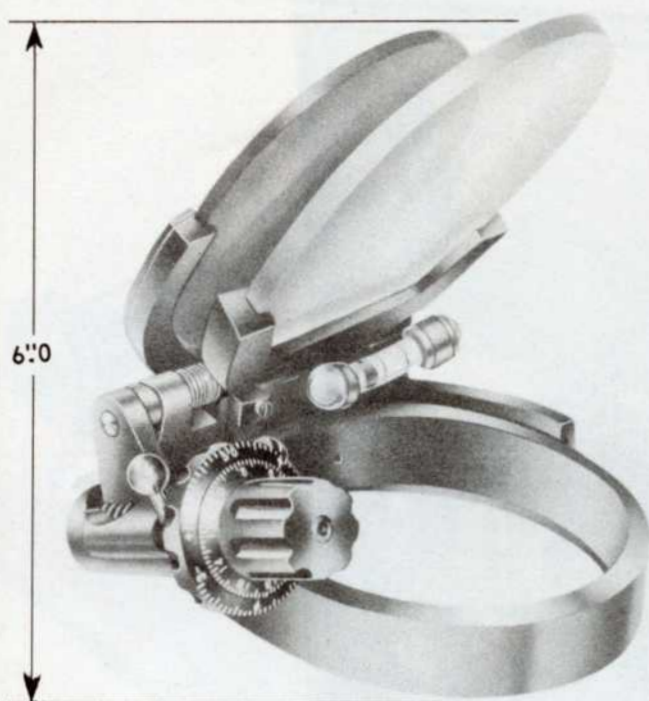
Power for the film sprockets is obtained from a variable speed motor or by a hand crank. A reticle is located at one of the focal planes of the projector lens system. The reticle pattern consists of 50 and 100 mil rings cut by graduated cardinal lines. There is a reference mark on each side, top, and bottom.

The projector operates on 115-volt AC or DC power and is provided with a spare projection Lamp (Stock No. 17-L-4812-20).

DIMENSIONS: approx. 15.5 x 13.8 x 20.5 inches.

WEIGHT: approx. 35 pounds.

REFLECTOR, ADJUSTABLE, MARK 1, MOD. 1



REFLECTOR, ADJUSTABLE, MARK 1, MOD. 1, FOR TORPEDO DIRECTOR, MARK 30 MODS.

STOCK No. 2-R-420-50

THIS Adjustable Reflector, mounted on the Torpedo Director Mark 30 Mods., makes it possible to use the director as a low altitude bombsight. This is in addition to the director's usual functions as an angle solver for launching of torpedoes and as a fixed gun sight. Adjustment for bombing from various altitudes and speeds is accomplished by turning a graduated drum which varies the reflector plate angle.

The reflector is composed of the following parts: the mount which carries all parts, the reflector plate, the worm and quadrant gears for elevating or depressing the reflector plate, a graduated dial and thumb knob for moving the plate, a graduated adjustable index dial which allows selection of the reference point

from which to measure dropping angles, a locking detent cam to stop and lock the reflector in a zero position, an Inclinometer Vial (Stock No. 2-V-900), and a sun filter.

When this reflector is furnished as a part of the torpedo director, the stock numbers of the directors are as follows:

Mark 30, Mod. 1	2-D-166-5
Mark 30, Mod. 2	2-D-166-15
Mark 30, Mod. 3	2-D-166-25
Mark 30, Mod. 4	2-D-166-35
Mark 30, Mod. 5	2-D-166-50

DIMENSIONS: approx. 5.3 x 5.9 x 6.0 inches.

WEIGHT: approx. 1.9 pounds.

PUBLICATION: O.T.I. FV2-44.

REFLECTOR, ADJUSTABLE, MARK 2, MOD. 1



REFLECTOR, ADJUSTABLE, MARK 2, MOD. 1, FOR ILLUMINATED SIGHT MARK 8 AND MODS.

STOCK No. 2-R-430-50

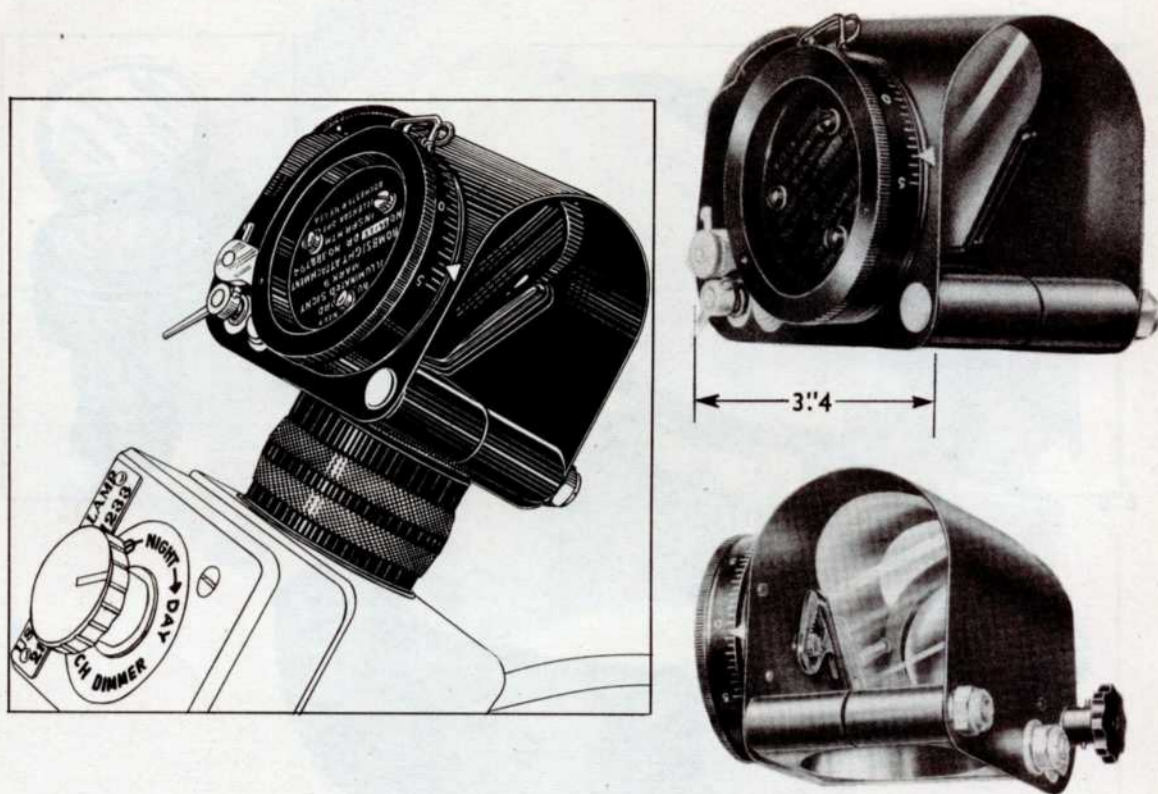
THE Adjustable Reflector for the Illuminated Sight Mark 8 performs the same functions as the Adjustable Reflector for the Mark 30 Torpedo Director. The difference between the two is a change in the reflector mount to permit the incorporation of a sponge rubber crash pad.

When this reflector is furnished as a part of the sight, the stock numbers of the sights are as follows:

Mark 8	2-S-3114-5
Mark 8, Mod. 1	2-S-3114-15
Mark 8, Mod. 2	2-S-3114-25
Mark 8, Mod. 3	2-S-3114-35
Mark 8, Mod. 4	2-S-3114-45
Mark 8, Mod. 5	2-S-3114-53
Mark 8, Mod. 6	2-S-3114-56
Mark 8, Mod. 7	2-S-3114-70

DIMENSIONS: approx. 5.9 x 6.0 x 6.5 inches.
WEIGHT: approx. 2.2 pounds.

REFLECTOR, ADJUSTABLE, MARK 3



REFLECTOR, ADJUSTABLE, MARK 3, FOR ILLUMINATED SIGHT, MARK 9

STOCK No. 2-R-433

THE Adjustable Reflector for Illuminated Sight Mark 9 consists of a standard Illuminated Sight Mark 9 hood which has had the fixed reflector plate replaced with an adjustable reflector plate. This special hood enables the sight to be used as a bombsight for low altitude bombing in PV-1 and PV-2 airplanes. In this installation, the sight is rigged to a fixed bar extending from the center of the windshield to the left hand side of the cockpit. When not in use, the sight is moved forward toward the center of the cockpit where the sight is not a hazard to the pilot's head.

Adjustment for bombing under various altitude, speed and load conditions is accomplished by varying the angle of the re-

flector plate. This is done by rotating a graduated drum on the outside of the hood. A pinion and rack mechanism then moves the reflector plate and its hinged frame. A reference pointer may be placed at any position around the drum's circumference by rotating a spring-held wire ring. This ring allows selection of the reference point from which it is desired to measure the dropping angles.

The stock number of the complete Illuminated Sight Mark 9 with Adjustable Reflector is 2-S-3115-5.

DIMENSIONS: approx. 3.4 x 2.7 x 2.9 inches.

WEIGHT: approx. 11.0 ounces.

BuORD DWG: Gen. Arr. 388794.

RETICLES, FOR ILLUMINATED SIGHTS MARK 8 AND MODS. AND TORPEDO DIRECTORS MARK 30 MODS.



RETICLE REMOVING WRENCH

RETICLE, FOR ILLUMINATED SIGHTS MARK 8, MODS. 2-8, INCLUSIVE, AND TORPEDO DIRECTORS MARK 30 MODS.

STOCK No. 2-R-600

RETICLES are located at the principal focus of the lens system. In this way, the reticle pattern is projected on the reflector plate and appears at infinity along the pilot's line of sight.

This reticle pattern consists of a 50-mil and 100-mil ring, 4 cardinal lines, a center dot or "pipper," and 2 intercardinal lines in the lower quadrant. These are engraved on thin copper pressed into a concave shape. The

copper is chemically blackened and mounted on a brass spacer ring.

The reticle is removed from the reticle mount by means of a Reticle Extractor Wrench BuORD Dwg. 240475-6.

DIMENSIONS: approx. 1.9 x 1.9 x 0.5 inches.

WEIGHT: approx. 1.0 ounce.

PUBLICATION: O.P. 803.

BuORD DWGS: Gen. Arr. 238577-20.

RETICLE, FOR ILLUMINATED SIGHTS MARK 8 AND MARK 8, MOD. 1



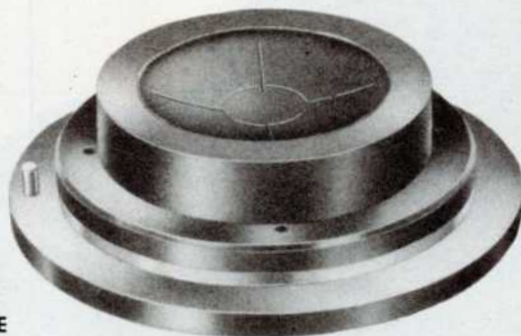
STOCK No. 2-R-603

THE flat metal reticle used in Illuminated Sights Mark 8 and Mark 8, Mod. 1 replaces the old style glass reticle formerly used. The pattern which is the same as that of the con-

cave reticle (Stock No. 2-R-600), is also engraved on thin copper. The dimensions and weight are the same.

BuORD DWG: 323231 piece 4.

RETICLES, FOR ILLUMINATED SIGHTS MARK 8 AND MODS. AND TORPEDO DIRECTORS MARK 30 MODS. (CONT'D)



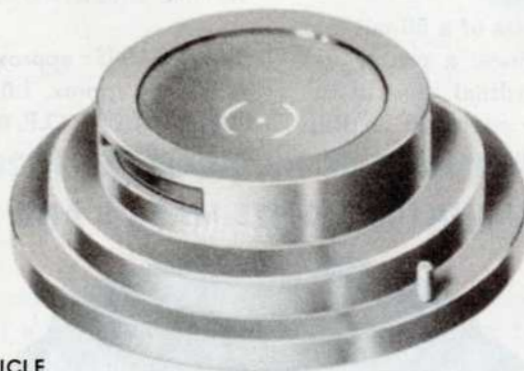
BRITISH TYPE
CONCAVE METAL RETICLE

RETICLE, BRITISH TYPE FOR ILLUMINATED SIGHTS MARK 8, MODS. 2-8, INCLUSIVE, AND TORPEDO DIRECTORS MARK 30 MODS.

STOCK No. 2-R-590

THE British Type Reticle is interchangeable with the standard Navy concave metal Reticle for the Illuminated Sight Mark 8, Mods. 2 to 8 (Stock No. 2-R-600). The reticle pattern,

however, differs from that used in Navy reticles in that it consists of a single circle of 58.9-mils radius, a center "pipper" and 4 cardinal lines.



CONCAVE METAL NIGHT RETICLE

RETICLE, NIGHT, FOR ILLUMINATED SIGHTS MARK 8, MODS. 2-8, INCLUSIVE AND TORPEDO DIRECTORS MARK 30 MODS.

STOCK No. 2-R-601

THE Night Reticle used in Illuminated Sights Mark 8, Mods. 2 to 8 and Torpedo Director Mark 30 and Mods. is a concave metal reticle whose pattern consists of a center dot and 2 arcs of a 50-mil radius ring. The pattern is engraved on the copper. A diffusing glass

provides uniform brightness of the reticle.

The center of each arc is to be at the 3 and 9 o'clock positions when viewed through the reflector in normal operating position.

BuORD DWG: 388777.

RETICLES, FOR ILLUMINATED SIGHTS, MARK 9 AND MODS.



RETICLE FOR THE SIGHT
WITH ADJUSTABLE REFLECTOR



RETICLE FOR THE SIGHT
WITHOUT ADJUSTABLE REFLECTOR

RETICLE, FOR ILLUMINATED SIGHT MARK 9 AND MARK 9, MOD. 1 WITH ADJUSTABLE REFLECTOR

STOCK No. 2-R-610 (BuORD DWG. 393646-1)

THE Reticle for Illuminated Sight Mark 9 and Mark 9, Mod. 1 with Adjustable Reflector is a concave metal plate having a 50-mil and 100-mil ring reticle pattern with 4 cardinal lines and 2 intercardinal lines in the lower quadrant. The pattern is photo-etched through sheet copper and a brass stiffening ring retains it in the concave shape. The pattern and ring and a colored glass filter are held together in the reticle mount.

The reticle is placed in the sight with the

bottom vertical cardinal line in the 6 o'clock position when viewed through the reflector in the operating position.

This reticle is employed when the sight is used as a fixed gun sight or when used in masthead or glide bombing.

DIMENSIONS (reticle only):

Thickness, approx. 0.050 inch.

Diameter, approx. 0.491 inch.

WEIGHT: approx. 1.0 ounce.

RETICLE, FOR ILLUMINATED SIGHT MARK 9 OR MODS.

(BuORD DWG. 300476-6)

THIS Reticle for Illuminated Sight Mark 9 or Mods. is a flat metal reticle made of chemically-blackened copper. The pattern which is photo-etched through the metal consists of a "pip" and 2 rings which have 35-mil and 70-mil radii. A piece of colored glass is used as a ray filter in conjunction with the metal

pattern. The bridges of the pattern should be in the 3, 6, 9, and 12 o'clock positions when viewed through the reflector in the operating position.

This reticle is employed when the sight is used to aim free or flexible guns.

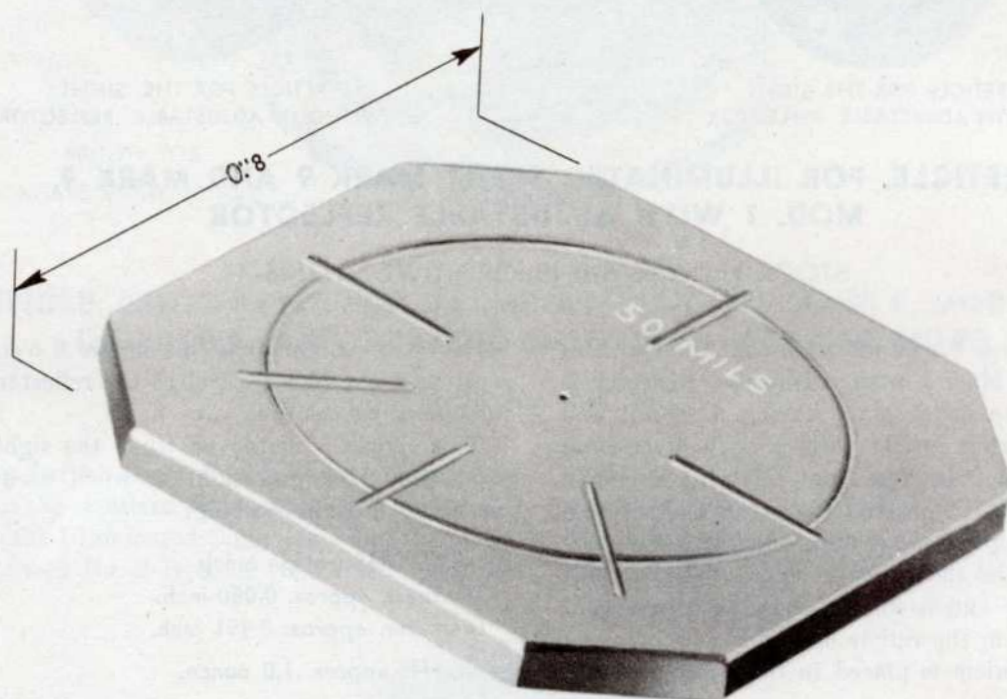
RETICLE FOR ILLUMINATED SIGHT MARK 9 AND MARK 9, MOD. 1

(BuORD DWG. 394207)

THIS reticle differs from the flat metal reticle (BuORD DWG. 300476-6) previously described in that it is concave in shape. This

change in shape improves the optical performance of the sight by reducing errors caused by parallax.

RETICLE, FOR ILLUMINATED SIGHTS TYPE N-3A AND N-3B



RETICLE, FOR ILLUMINATED SIGHTS TYPE N-3A AND N-3B

STOCK No. 2-R-606

THE Reticle for Illuminated Sights Type N-3A and N-3B is a flat octagonal piece of copper that has been chemically blackened. All reticles for illuminated sights are located at the principal focus of the lens system. The image of the reticle is projected on the re-

flector plate, and appears at infinity along the pilot's line of vision.

The pattern, consisting of a 50-mil ring, 4 cardinal lines, a center dot, and 2 intercardinal lines in the lower quadrant, is photoetched on the metal.

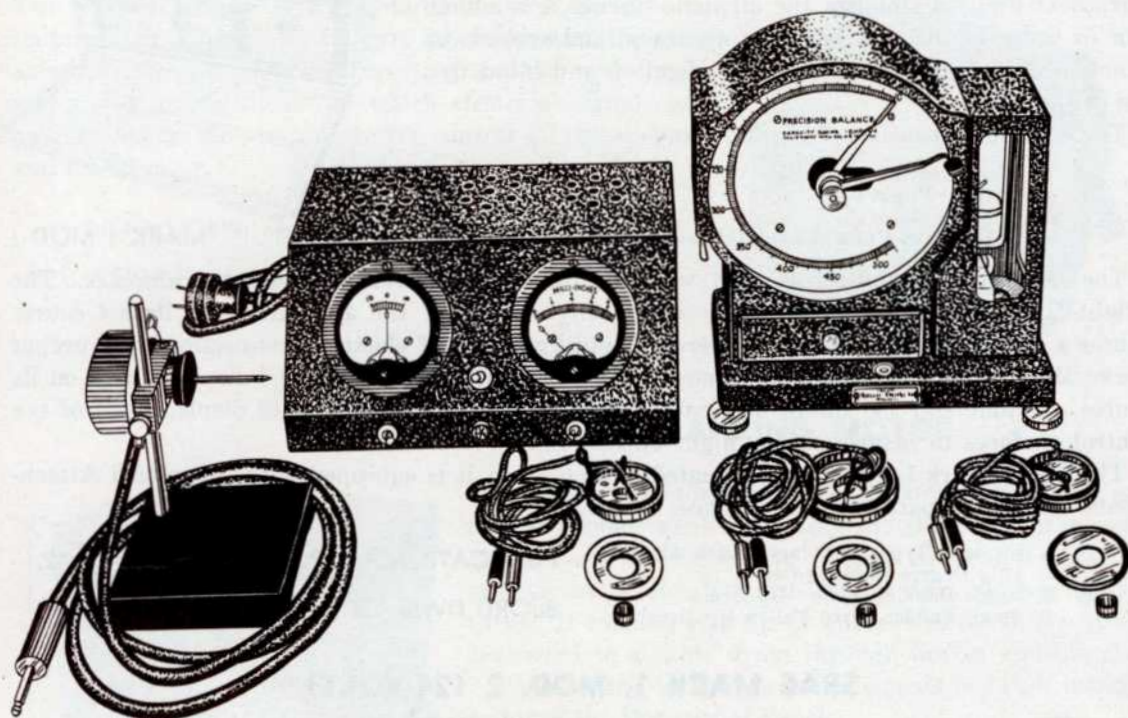
DIMENSIONS: approx. 0.8 x 0.8 x 0.1 inches.

WEIGHT: approx. 1.0 ounce.

PUBLICATION: AAF Tech. Order 11-35-5.

BuORD DWG: SK. 119883.

ROTOR BALANCING SET, BOMBSIGHT



ROTOR BALANCING SET, BOMBSIGHT

STOCK No. 2-R-2550

THE Rotor Balancing Set is used in bombsight overhaul shops for balancing gyro rotors. The equipment consists of a precision balance, a magnetic pick-up, an amplifier, and 3 brush-holding attachments, one each for the stabilizer gyro, the flight gyro and the bombsight gyro.

The following auxiliary equipment is useful but is not supplied with the set:

1. Tachometer, rotor speed (see Stock No. 2-T-25).

2. Three resistance units, one for 12 volts, and 2 in series for 24 volts.
3. Mechanical pick-up holder.
4. Master plug holder.
5. Bombsight, flight gyro, and stabilizer gyro correction plane indicators.
6. Plug holder.
7. Record sheets.
8. Spare commutator holder.

WEIGHT (of set): approx. 50.0 pounds.

PUBLICATION: O.P. 650.

SBAE, MARK 1, MODS.

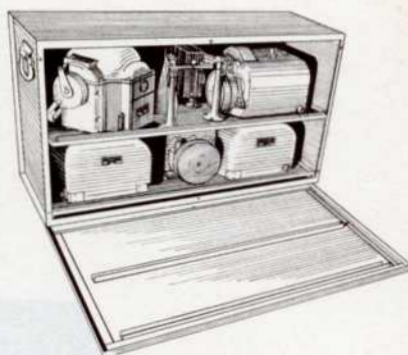
SBAE (NORDEN) MARK 1, MOD. 1 (24-VOLT)

STOCK No. 2-S-325

STABILIZED Bombing Approach Equipment is used for two purposes: first, to stabilize the airplane during a bombing run in order to increase bombing accuracy, and second, to function as an automatic pilot for navigation and blind flying of the airplane.

The equipment consists of the following:

1. Directional Panel
2. Vertical Flight Gyro
3. Banking Motor
4. Three Servo Units and suitable connecting cables and rods



MARK I MOD I

The Bombsight Stabilizer is used with the SBAE to provide an azimuth reference. The Flight Gyro provides a vertical reference. Any change of the airplane from its set course causes a deflection from the gyro reference, and by means of electrical connections, the proper Servo Motor, or motors, operate to move the control surfaces to bring the airplane back on its course. A cable and rod follow-up system provide for a proper amount of displacement of the control surfaces to insure smooth flight operation.

The SBAE Mark 1, Mod. 1 is designated as such when it is equipped with "Standard Attachments" as used in patrol bombers. These include:

1. Straight Type Secondary Clutch Arm
2. 13½ Degree Banking Cam
3. Large Banking Follow-Up Drum
4. Small Rudder Servo Follow-Up Drum

PUBLICATIONS: O.P. 659, O.C.L. V-44-42.

BuORD DWG: SK. 91756.

SBAE MARK 1, MOD. 2 (24-VOLT)

STOCK No. 2-S-330

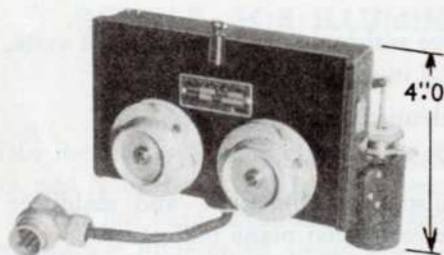
THE SBAE Mark 1, Mod. 2 is identical with Mark 1, Mod. 1 except that instead of "Standard Attachments," it is equipped with the "No. 1 Attachments" designed for use in torpedo bombers. These attachments include:

1. Split-type Secondary Clutch Arm
2. 20 Degree Banking Cam
3. Small Banking Follow-Up Drum
4. Large Rudder Servo Follow-Up Drum

PUBLICATIONS: O.P. 659, O.C.L. V-44-42.

BuORD DWG: SK. 91756.

DIRECTIONAL PANEL



THE Directional Panel transmits the azimuth control of the Directional Stabilizer (see Stabilizer, Bombsight) to the Rudder Servo Unit and Banking Motor. The unit consists of a brush mounting slide, operated by the secondary clutch arm of the Directional Stabilizer, on which are mounted a swivel brush for control of the Rudder Servo Unit and a fixed brush for control of the Banking Motor. Each brush contacts a sector whose movement is controlled by a follow-up mechanism. A dash-pot is linked to the swivel brush for damping oscillations of the plane in azimuth.

The Directional Panel is mounted on one side of the Directional Stabilizer.

DIMENSIONS: approx. 5.9 x 8.1 x 4.0 inches.

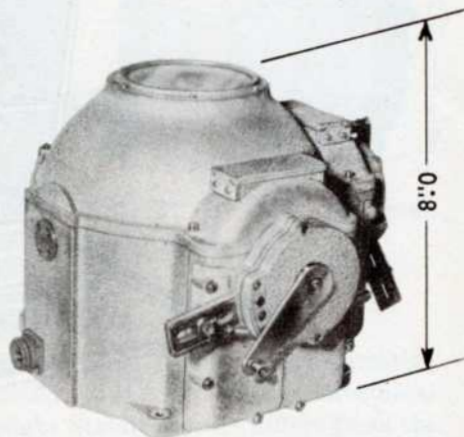
WEIGHT: approx. 4.5 pounds.

VERTICAL FLIGHT GYRO

THE Vertical Flight Gyro maintains the airplane in horizontal flight. It consists of a gyro assembly, with the spin axis vertical, an automatic erecting system, and brush and sector arrangements by which electrical signals are transmitted to the servo units for control of the ailerons and the elevator.

DIMENSIONS: approx. 8.7 x 8.4 x 8.0 inches.

WEIGHT: approx. 18.2 pounds.



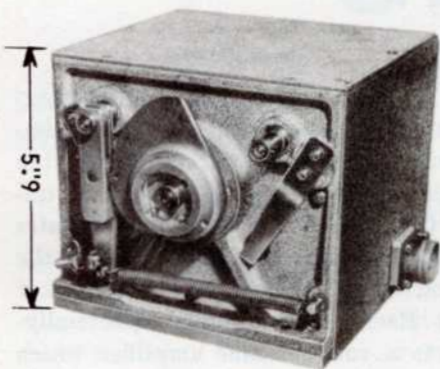
BANKING MOTOR

THE Banking Motor introduces the proper bank for any rudder displacement by moving the aileron contact sector of the Vertical Flight Gyro. It also cuts out the erecting mechanism of the Vertical Flight Gyro during banked turns. It consists of a direct current motor differentially connected to a cable drum through brakes and clutches.

The unit responds to electrical signals from the banking sector of the Directional Panel.

DIMENSIONS: approx. 6.5 x 4.9 x 5.9 inches.

WEIGHT: approx. 7.6 pounds.

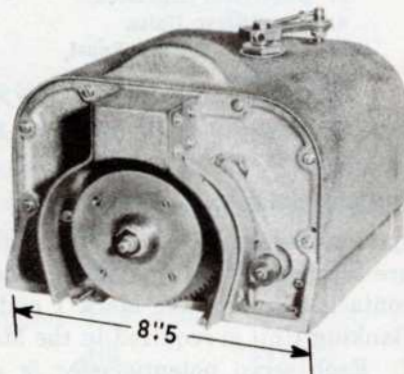


SERVO UNIT

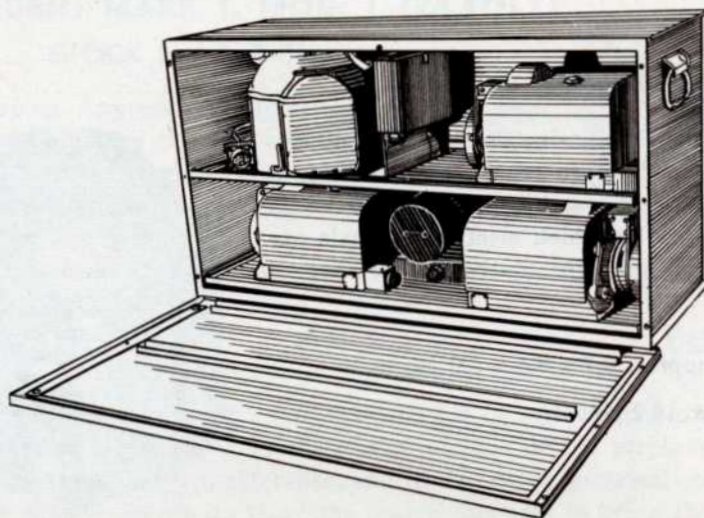
THE Servo Unit supplies the mechanical force required to operate the control surfaces of the airplane. It consists of a cable drum driven by an electric motor through a gear reduction and reversible differential assembly. Three servo units are required for each installation, one to operate the ailerons, one to operate the elevators, and one to operate the rudder. Follow-up shafts and assemblies are provided on the elevator and aileron servo units, but not in the rudder servo unit, which has a drum and cable follow-up system.

DIMENSIONS: approx. 8.5 x 9.9 x 6.6 inches.

WEIGHT: approx. 23.6 pounds.



SBAE, MARK 2, MOD. 1



SBAE, MARK 2, MOD. 1

STOCK No. 2-S-335

THE function of the SBAE Mark 2, Mod. 1 is the same as that of the Mark 1 and Mods. It differs, however, in the method by which it operates. It substitutes an electronic type follow-up system for the mechanical-electrical system of the Mark 1 and Mods. The follow-up system operates on AC supplied from a Rotary Inverter. The servo units and gyro motors operate on DC.

The equipment consists of the following items:

1. Vertical Flight Gyro,
2. Directional Panel,
3. Directional Arm Lock,
4. Three Servo Units,
5. Autopilot Control Panel,
6. Amplifier,
7. Rotary Inverter,
8. Junction Box (Furnished for SNB installations only).

Servo Units and Flight Gyros of the two systems are similar except that potentiometers are substituted in the Mark 2, Mod. 1 for the contact sectors of the Mark 1 and Mods. No Banking Unit is required in the Mark 2, Mod. 1. Each servo potentiometer is electrically-connected to an associated potentiometer in either the Flight Gyro or Directional Panel (sector box) to provide the electrical bridge

control circuits. Alternating current is impressed across each bridge circuit to provide an electrical signal when the bridge is unbalanced (i.e., when the airplane deviates from its set course); the magnitude of the signal being in proportion to the amount of unbalance. Each bridge circuit is electrically-connected to a vacuum tube amplifier which is combined with a selective relay system to control operation of an associated servo unit.

Additional bridge circuits provide manual control and adjustment of the system by the pilot, and control of the system by the bombardier. The system offers wide flexibility of control by the pilot from the auto-pilot control panel, which includes individual rudder, aileron and elevator controls for centering, sensitivity, ratio, and turn compensation.

When ordering this equipment, the model designation of the airplane in which the equipment is to be installed must be specified.

PUBLICATIONS: AAF Tech. Order AN 11-60AA-1, O.C.L. V-49-42, O.T.I. V-19-43, and O.H.I. V-6-43.

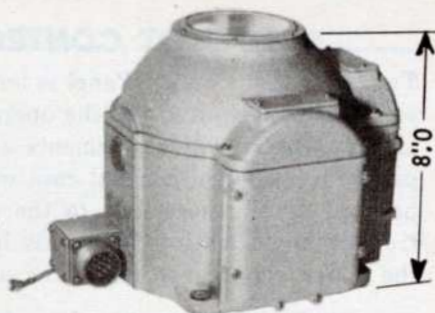
MFR'S DWG: Minneapolis-Honeywell Regulator Co. G1004A42 for SNB Airplanes, G1004A48 for PB4Y-1 Airplanes.

SBAE, MARK 2, MOD. 1 (CONT'D)

VERTICAL FLIGHT GYRO

THE Vertical Flight Gyro provides a vertical reference for the operation of the SBAE. It differs from the Norden Instrument by having potentiometers, instead of a brush and sector arrangement, to detect deviations of the airplane. Also, the erecting mechanism is cut out by a signal from the directional panel instead of from a banking motor as in the Mark 1 and Mods.

DIMENSIONS: approx. 10.4 x 8.6 x 8.0 inches.
WEIGHT: approx. 17.5 pounds.

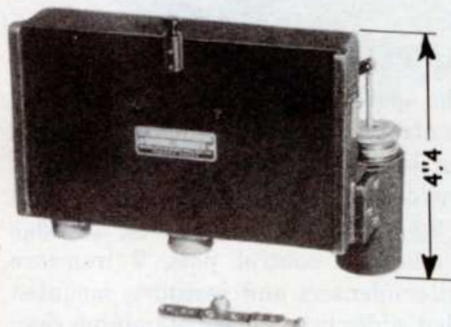


MFR'S DWG: G1021B1 for SNB Airplanes,
G1021B3 for PB4Y-1 Airplanes.

DIRECTIONAL PANEL

THE Directional Panel controls the airplane's direction of flight and is mounted on the side of the directional stabilizer (see Bombsight Stabilizer). It differs from the Norden directional panel in that the potentiometers replace the sector and brush arrangement; the mechanical follow-up mechanism has been removed; and control of the erecting cut-out system of the flight gyro has been placed in the directional panel.

DIMENSIONS: approx. 9.3 x 4.4 x 1.7 inches.
WEIGHT: approx. 2.8 pounds.



MFR'S DWG: G1005B1 for SNB and PB4Y-1 Airplanes.

DIRECTIONAL ARM LOCK

THE Directional Arm Lock is a solenoid-operated clamp generally mounted on the after side of the stabilizer. When closed, it holds the autopilot clutch fixed in relation to the stabilizer case. This is done to prevent the stabilizer from operating the directional panel slide when a turn is made from the turn control of the autopilot control panel.

DIMENSIONS: approx. 7.6 x 5.6 x 1.5 inches.
WEIGHT: approx. 1.3 pounds.

MFR'S DWG: G1029A2 for SNB and PB4Y-1 Airplanes.

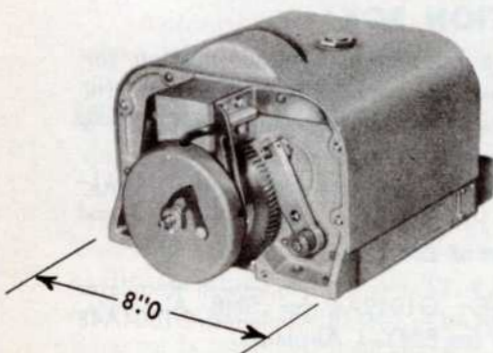


SERVO UNIT

The Servo Unit supplies the mechanical force required to operate the control surfaces of the airplane. The Norden mechanical follow-up assembly is replaced with an electrical arrangement controlled from the amplifier.

DIMENSIONS: approx. 11.5 x 8.3 x 6.5 inches.
WEIGHT (each): approx. 23.9 pounds.

MFR'S DWG:	SNB	PB4Y-1
Elevator Servo	G1020A23	G1020A13
Aileron Servo	G1020A16	G1020A9
Rudder Servo	G1020A11	G1020A12



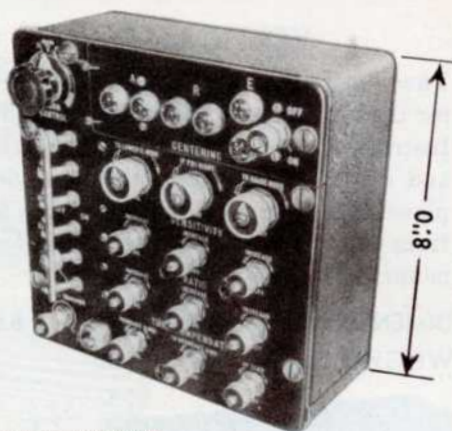
AUTOPILOT CONTROL PANEL

THE Autopilot Control Panel is an assembly of switches and controls required for the operation and adjustment of the SBAE. The instruments and controls are compactly arranged in a metal case which is mounted in a position readily accessible to the pilot. The turn control, which formerly was a unit in itself, is located in the upper left hand corner of the control panel.

DIMENSIONS: approx. 8.0 x 8.0 x 3.5 inches.

WEIGHT: approx. 5.1 pounds.

MFR'S DWG: G1047C1 for SNB and PB4Y-1 Airplanes.



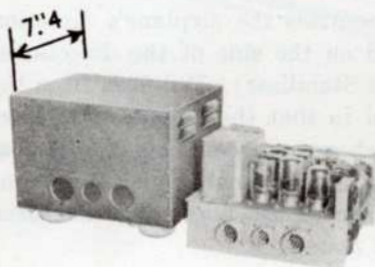
AMPLIFIER

THE Amplifier controls the operation of the servo units, causing them to operate the control surfaces in response to signals received from the control bridge circuits of the SBAE. It consists of a power transformer, a rectifier tube (7Y4), 3 twin triode tubes (7F7), 3 twin triode tubes (7N7), 2 bridge supply transformers, 6 relays, 4 control pots, 2 iron-core chokes, and miscellaneous condensers and resistors, mounted on an aluminum chassis that slides into a black aluminum case.

DIMENSIONS: approx. 9.6 x 9.4 x 7.4 inches.

WEIGHT: approx. 11.8 pounds.

MFR'S DWG: G1024A2 for SNB and PB4Y-1 Airplanes.



ROTARY INVERTER

THE Rotary Inverter generates the 19-volt, 105 cycle AC required for the operation of the autopilot system. It consists of a shunt-wound DC motor to which has been added a pair of slip rings and brushes which pick up an AC voltage from one of the rotating armature windings. It operates on the 24-volt DC supplied by the airplane.

DIMENSIONS: approx. 6.1 x 5.5 x 6.0 inches.

WEIGHT: approx. 8.6 pounds.

MFR'S DWG: G1025A5 for SNB Airplanes,
G1025A3 for PB4Y-1 Airplanes.



JUNCTION BOX

THE Junction Box provides a convenient central location for making the interconnections necessary among the various control units of the system. It consists of a sheet aluminum box with a cover held in place by Dzus fasteners. Inside the box is a group of 7 (or 8) bakelite terminal blocks, each with ten binding posts.

For PB4Y-1 airplanes this junction box is furnished as part of the airplane and not as part of the SBAE.

DIMENSIONS: approx. 16.1 x 3.0 x 5.4 inches.

WEIGHT: approx. 8.8 pounds.

MFR'S DWG: G1049A4 for SNB Airplanes,
G1049A8 for PB4Y-1 Airplanes.



SET, SPARE PARTS, BASE, TYPE AN GUN CAMERA M-4, M-4A, N-4, N-4A.

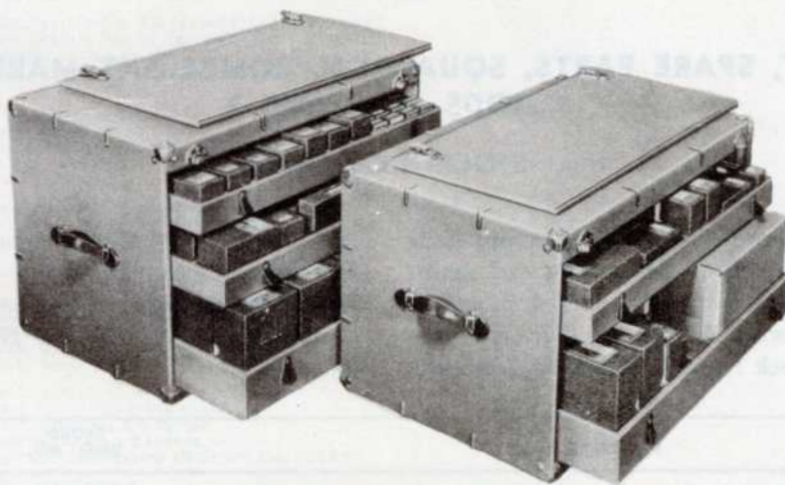


TYPE AN M-4 AND N-4

SET, SPARE PARTS, BASE, TYPE AN GUN CAMERA M-4 AND N-4

STOCK No. 2-S-4320

THIS Spare Parts Set is issued to major overhaul points which service AN Type Gun Cameras manufactured by the Fairchild Aviation Corporation. Each set is intended to service two hundred 12-volt cameras M-4 and three hundred 24-volt cameras N-4.



TYPE AN M-4A AND N-4A

SET, SPARE PARTS, BASE, TYPE AN GUN CAMERAS M-4A AND N-4A

STOCK No. 2-S-4320-5

THIS Spare Parts Set is issued to major overhaul bases which service AN Type Gun Cameras manufactured by Bell and Howell Co. Each set is intended to service 500 Gun Cam-

eras AN Types M-4A and N-4A. The complete set consists of 2 chests containing a wide assortment of parts.

SET, SPARE PARTS, SQUADRON, BOMBSIGHT MARK 15, MODS. 4, 5, AND 7



SET, SPARE PARTS, SQUADRON, BOMBSIGHT MARK 15, MODS. 4, 5, AND 7

STOCK No. 2-S-4323

THIS set of spare parts, tools and supplies, is allowed each squadron which uses and maintains Bombsights Mark 15, Mods. 4, 5, and 7. When issued with the Norden SBAE Spare Parts Set (Stock No. 2-S-4335), it is packed

in the same chest and boxes as the latter, the two sets being combined.

The set consists of the parts included in Ordnance Allowance List No. 17780A and listed below:

ITEM	NOMENCLATURE	BuORD DWG. NO.	ALLOW- ANCE
1	Bracket, stabilizer, cardan contact sector brush	148774-12	2
2	Brush, stabilizer, cardan contact sector (with contact)	148794-11	8
3	Brush, stabilizer, gyro motor	148753-3	8
4	Buffer, eye, bombsight telescope window	265568-5	2
5	Cable, stabilizer switch panel to bombsight synchronizing end (6-wire)	265522-2	1
6	Cable, bombsight, telescope drum, transmission	265529-13	15
7	Lamp, bombsight, telescope illuminating (26-volt)	265538-12B	4
8	Lamp, bombsight, gyro level illuminating (26-volt)	265569-6	4
9	Lead, flexible, bombsight, cardan to end cover	265560-4	6
10	Lead, flexible, bombsight, cardan to gyro housing terminal block	265560-3	6
11	Lead, flexible bombsight, telescope motor brush	265560-1	6
12	Lead, flexible, bombsight, telescope motor governor contact to ground	265560-2	4
13	Lead, flexible, bombsight, A.E.S. and stabilizer, cardan connection block to gyro connection block	265560-171	4
14	Lead, flexible, bombsight, A.E.S. magnet	265560-6	4
15	Lead, flexible, stabilizer, precession motor brush to ground	265560-5	4

SET, SPARE PARTS, SQUADRON, BOMBSIGHT MARK 15, MODS. 4, 5, AND 7

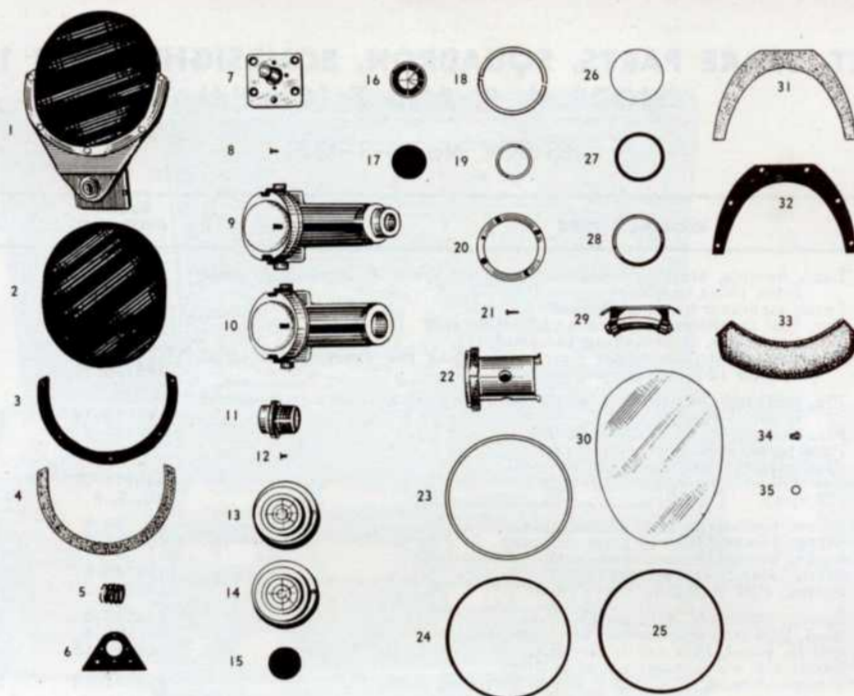
SET, SPARE PARTS, SQUADRON, BOMBSIGHT MARK 15, MODS. 4, 5, AND 7 (Cont'd)

STOCK No. 2-S-4323

ITEM	NOMENCLATURE	BuORD DWG. NO.	ALLOW- ANCE
16	Lead, flexible, stabilizer, precession motor brush to upper and lower fields (blue or black)	199919-10	4
17	Level, stabilizer housing circular	148300-5	3
18	Nut, PDI stabilized brush collar adjusting stud	148790-4	1
19	Pin, bombsight, stem locking (assembly)	265544-1	2
20	Pin, bombsight, directional clutch connecting rod (previous to serial number 1240)	143766-7	4
21	Pin, bombsight, directional clutch connecting rod assembly (subsequent to serial number 1240)	143796-14	2
22	Pin, bombsight, crosstrail rack link	199906-2	4
23	Pins, taper, assorted (100 per set)		2
24	Pins, straight, assorted (100 per set)		1
25	Resistor, stabilizer, pilot director (26-volt)	148773-6, 6B, 7, 8	3
26	Screw, bombsight, trail arm locking	148738-9	2
27	Screw, bombsight, trail plate clamping	265511-9	2
28	Screw, bombsight, assorted (set)		1
29	Sector, stabilizer, cardan contact	148799-2	4
30	Spring, PDI stabilized brush collar	148790-5	1
31	Spring, stabilizer, gyro motor brush	148753-2	2
32	Stud, PDI stabilized brush collar adjusting	148790-3	1
33	Switch, panel, PDI and telescope motor	148796-15	4
34	Terminals, wire, assorted (set of 100)		1
35	Washer, Nos. 2, 3, 4, and 6, flat brass nickel plated	265561-76	20 each
36	Washer, Nos. 3, 4, and 6 lock	265561-60	20 each
37	Washer, No. 6 shakeproof, lock	265561-71	20
38	Window, bombsight, gyro inspection	148719-9	1
39	Window, bombsight, housing telescope (lower)	265540-10	4
40	Window, bombsight, housing telescope (upper)	265540-6	2
41	Window, bombsight, telescope indicator	265518-4	1
42	Window, stabilizer, pilot director	148774-2	1
43	Wire, No. 20 black, corlac (100-foot spools)		1
44	Wire, No. 20 red, corlac (100-foot spools)		1
45	Wire, flexible No. 25 (blue or black) (10-foot spool)		1
46	Wire, flexible No. 40 (green) (25-foot spool)		1
47	Wire, flexible No. 50 (green) (10-foot spool)		1
48	Atomizer, Atlas No. 24		1
49	Brush, cleaning bearing and gear		1
50	Brush, 5-row, No. 2		1
51	Brush, 5-row, No. 4		1
52	Files, contact point		2
53	Flashlight, lucite, curved end		1
54	Handles, socket wrench, flexible 7 1/2-inch, 3/8-inch drive, 12-point socket		2
55	Level, precision		1
56	Magnifier, engravers (3-power)		1
57	Oiler, drop type long curved tube		2
58	Oiler, pressure type (with 2 needles)		2
59	Pin, adjusting gyro balancing turret screws		4
60	Pliers, curved needle nose 5 1/2-inch		4
61	Pliers, bent thin nose, combination slip joint, 5 1/2-inch		4
62	Pliers, diagonal, wire cutting 4-inch		4
63	Pliers, parallel jaw, flat nose		4
64	Punch, drive pin 1/32-inch		1
65	Punch, drive pin 1/16-inch		1
66	Punch, center, machinists 3/8-inch		1
67	Screw driver 5/32 x 4 1/2 inches		4
68	Screw driver 3/64 x 3 inches		4
69	Screw driver 5/64 x 6 inches		4
70	Screw driver jewelers (Starrett No. 522A)		4
71	Sticks, orangewood		12
72	Stones, abrasive (sets)		2
73	Syringe, air, curved tube		1
74	Table, for check gyro levels		1
75	Tachometer, disc speed		3
76	Tips, tachometer, disc speed		6
77	Tweezers, needle nose, straight		1
78	Tweezers, long narrow curved end		1
79	Vise-machinist 2-inch		1
80	Wrench, set, electrical, midget		2
81	Carbon, tetrochloride, pure, quarts		2
82	Paper, abrasive, Aloxite No. 400, sheets		12
83	Oil (heavy) 4-ounce bottles		4
84	Oil (light) 4-ounce bottles		4
85	Tectyl 502 (gallons)		1
86	Tectyl 511 (gallons)		1

WEIGHT: approx. 40 pounds.

SET, SPARE PARTS, BASE, FOR ILLUMINATED SIGHT, MARK 8 AND MODS.



SET, SPARE PARTS, BASE, FOR ILLUMINATED SIGHT, MARK 8 AND MODS.

STOCK No. 2-S-4320-125

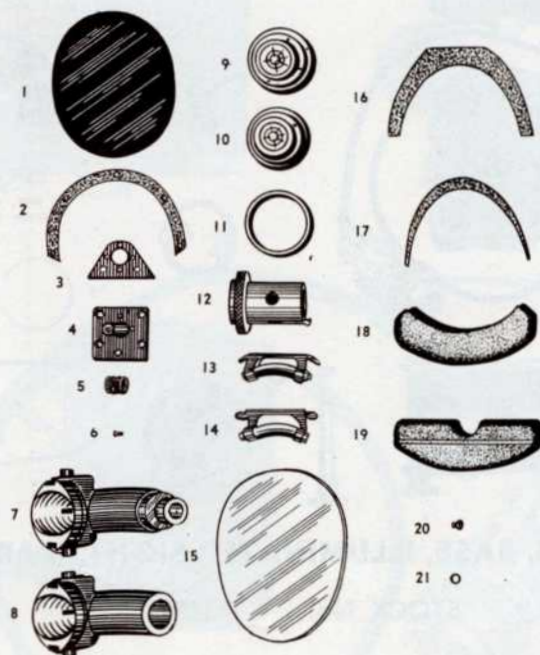
BASE Spare Parts Sets for Illuminated Sights, Mark 8 and Mods. are allowed to certain bases as aircraft maintenance equipment on the basis of one set for 100 sights.

This set is made up of the items included on Ordnance Allowance List No. 20556 and listed below.

Item	Nomenclature	BuORD Drawing No.	Allowance	Item	Nomenclature	BuORD Drawing No.	Allowance
1	Filter assembly complete with pivot, bearing plate and mounting plate (assembly)	244138-1 to 4 inclusive 238576-8; 238591-5, 6, 7 328423-2 to 6 inclusive	10	15	Disc, reticle (flat)	323231-4	10
2	Plate, filter	244138-4	25	16	Disc, reticle (concave)	323235-8	15
3	Retainer (for item 2)	244138-2	10	17	Rayfilter (orange yellow)	323232-9	10
4	Gasket (for item 2)	244138-3	20	18	Ring, retainer for reticle mount	238577-9	10
5	Spring	238576-8	5	19	Ring, retainer for reticle	238577-7	10
6	Plate, bearing	328423-3	10	20	Adapter, reticle	238577-8	20
7	Plate assembly, mounting	328423-2, 4, 5, 6 238591-5, 6 238591-7	125	21	Screws (for item 20)	238577-13	80
8	Screw (for sun filter and reflector plate retainer)	238579-1 to 13 inclusive 238578-5, 9; 238578-12	10	22	Wrench, reticle extractor	240475-6	5
9	Housing, lamp, complete assembly	238579-1, 4, 5, 6, 7, 11	10	23	Lens, upper objective	323238-2	5
10	Housing, lamp	238579-2, 3, 8, 9, 10, 12	10	24	Ring, retainer (for item 23)	238575-2	5
11	Receptacle assembly, connector	238579-10	24	25	Gasket, rubber (for item 23)	238577-14	15
12	Screw	323231-5	2	26	Lens, collective	323235-6	20
13	Mount assembly, reticle (flat)	323237-6	5	27	Gasket, rubber (for item 26)	238577-18	20
14	Mount assembly, reticle (concave)			28	Ring, retainer (for item 27)	238577-5	10
				29	Vial, inclinometer, mounted	Sketch 99926 (Rev. A)	20
				30	Plate, reflector	238578-3, 10 238574-1	20
				31	Gaskets (for item 30)	238591-2	28
				32	Retainers (for item 30)	238591-1	20
				33	Buffer	238578-2	25
				34	Screw, air inlet and outlet	238577-11	20
				35	Washers (for item 34)	238577-12	20

WEIGHT: approx. 35.0 pounds.

SET, SPARE PARTS, SQUADRON, FOR ILLUMINATED SIGHT, MARK 8 AND MODS. AND TORPEDO DIRECTOR, MARK 30 MODS.



SET, SPARE PARTS, SQUADRON, FOR ILLUMINATED SIGHT, MARK 8 AND MODS. AND TORPEDO DIRECTOR, MARK 30 MODS.

STOCK No. 2-S-4331

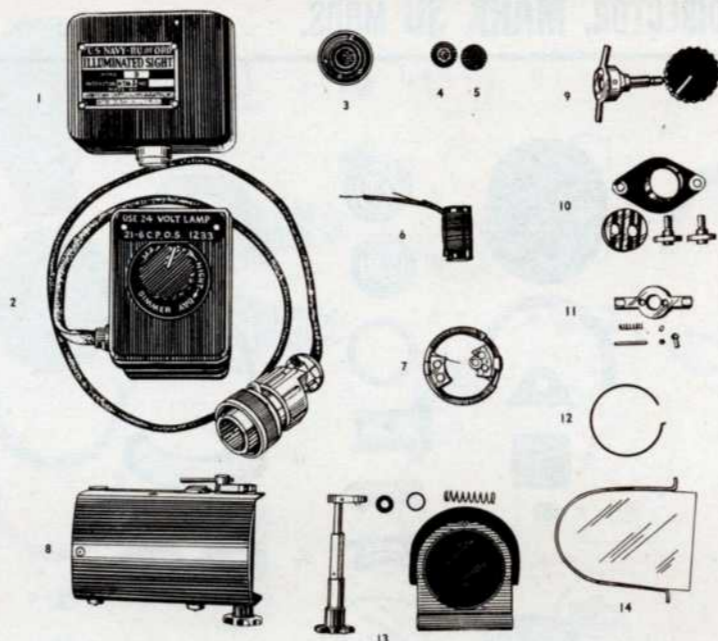
SQUADRON Spare Parts Sets for Illuminated Sight Mark 8 and Mods. and Torpedo Director Mark 30 Mods. are issued on the basis of one set for every 20 Sight.

This set is made up of the items included on Ordnance Allowance List No. 20557 and listed below.

Item	Nomenclature	BuORD Drawing No.	Allowance	Item	Nomenclature	BuORD Drawing No.	Allowance
1	Plate, sun filter	244138-4	5	11	Retainer, reticle mount	238577-9	1
2	Gaskets (for item 1)	244138-3	7	12	Wrench, reticle extractor	240475-6	1
3	Plate, sun filter mount bearing	328423-3	2	13	Vial, inclinometer, mounted (for Mark 8)	Sketch 99926 (Rev. A)	5
4	Mounting, sun filter	328423-2, 4, 5, 6	2	14	Vial, inclinometer, mounted (for Mark 30)	238578-3, 10 Sketch 99926 (Rev. A)	5
5	Plate assembly	238591-5, 6	2			328423-7, 238578-10	5
6	Spring	238576-8	2			238574-1	5
7	Screws (for sun filter and reflector plate retainer)	238591-7	24	15	Plate, reflector	238578-12	4
8	Housing, lamp (complete assembly)	238579-1 to 13 inclusive	4	16	Gaskets (for item 15 when used with Mark 8)	238591-2	7
9	Housing, lamp	238578-5, 9	2	17	Gaskets (for item 15 when used with Mark 30)	328423-9	7
10	Mount assembly, reticle (flat)	238579-1, 4, 5, 6, 7, 11	2	18	Buffer (for Mark 8)	238578-2	5
	Mount assembly, reticle (concave)	323231-5	2	19	Buffer (for Mark 30)	328424-2	5
		323237-6	2	20	Screws, air inlet and outlet	238577-11	10
				21	Washers (for item 20)	238577-12	10

WEIGHT: approx. 12.0 pounds.

SET, SPARE PARTS, BASE, ILLUMINATED SIGHT, MARK 9 AND MODS.



SET, SPARE PARTS, BASE, ILLUMINATED SIGHT, MARK 9 AND MODS.

STOCK No. 2-S-4320-150

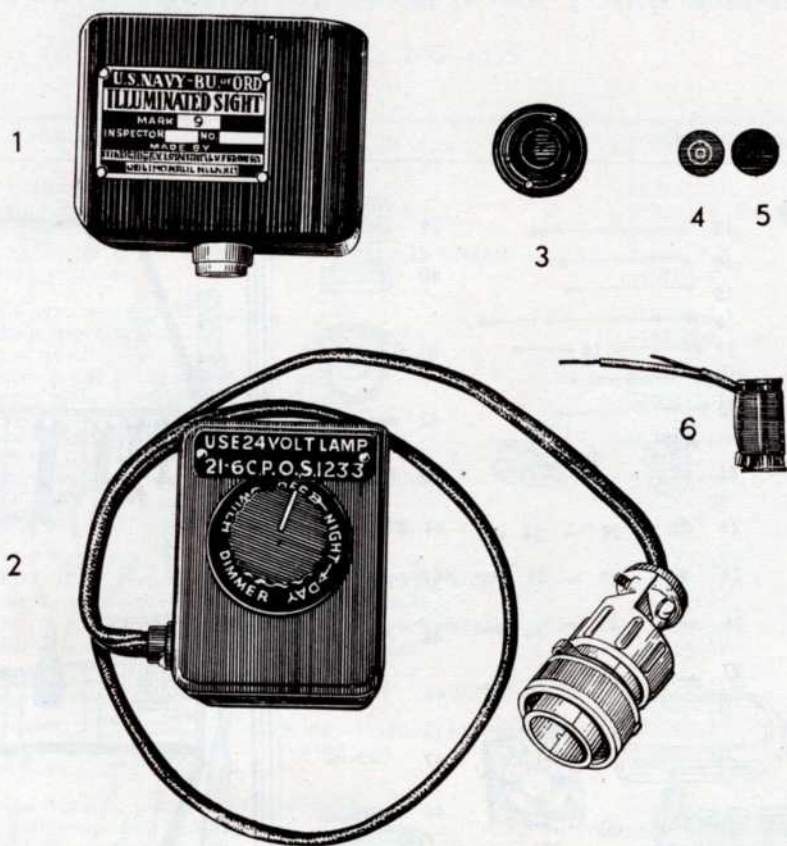
BASE Spare Parts Sets for Illuminated Sights Mark 9 and Mods. are allocated to certain bases as aircraft maintenance equipment on the basis of one set for every 100 sights.

This set is made up of the items included on Ordnance Allowance List No. 20137 and listed below.

ITEM	NOMENCLATURE	BUORD DWG. NO.	ALLOWANCE
1	Case group	300472-1, 2, 3, 4, 5	5
2	Dimmer switch assembly	300473-3, 4, 9	
3	Reticle assembly (Metal reticle)	300474-1 to 11 inclusive	3
4	Reticles, metal	300475-1 to 12 inclusive, 14, 15, 16	
5	Ray filters	300477-1 to 18 inclusive	5
6	Bobbins, wound, with connectors	300472-9, 10	
7	Resistance former assembly	300473-1, 11	10
8	Hood assembly	300476-D-4, 5, 6	
9	Dimmer knob assembly	300476-D-6	5
10	Lampholder assembly	300476-4	
11	Contacts	300474-9	5
12	Lockspring	300474-3, 4, 10, 11	
13	Dimming screen assembly	300469-1, 2, 4 to 14 inclusive	2
14	Reflector screen and spring	300470-1 to 16 inclusive	
		300471-1 to 7 inclusive	5
		300474-2, 5, 6	
		300475-5, 10	2
		300477-1, 10, 11, 16	
		300475-7, 8, 9, 11	5
		300474-2	
		300472-13	5
		300469-7, 8, 9	
		300470-6, 8, 11 to 16 inclusive	10
		300471-6	
		300470-7	6
		300469-4	

WEIGHT: approx. 15.2 pounds.

SET, SPARE PARTS, SQUADRON, ILLUMINATED SIGHT, MARK 9 AND MODS.



SET, SPARE PARTS, SQUADRON, ILLUMINATED SIGHT, MARK 9 AND MODS.

STOCK No. 2-S-4332

SQUADRON Spare Parts Sets for Illuminated Sight Mark 9 and Mods. are allocated to squadron service activities tending aircraft equipped with Illuminated Sight Mark 9 and Mods.

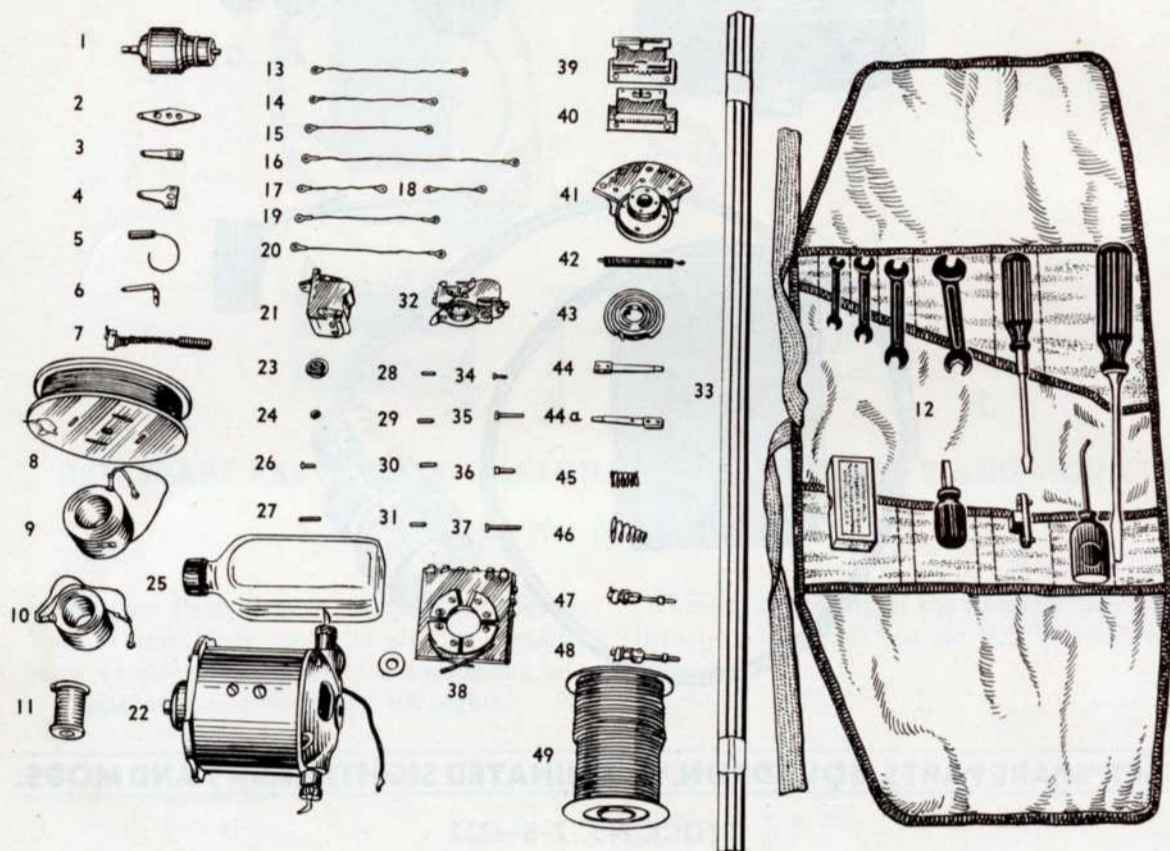
This set is made up of the items included on Ordnance Allowance List No. 20137 and listed below.

ITEM	NOMENCLATURE	BuORD DWG. NO.	ALLOWANCE
1	Case group	300472-1, 2, 3, 4, 5	5
2	Dimmer switch Assembly	300473-3, 4, 9	
		300474-1 to 11 inclusive	
		300475-1 to 12 inclusive, 14, 15, 16	3
3	Reticle assembly (metal reticle)	300477-1 to 18 inclusive	
		300472-9, 10	
		300473-1, 11	5
4	Reticles, metal	300476-D-4, 5, 6	
5	Ray filters	300476-D-6	5
6	Bobbins, wound, with connectors	300476-4	5
		300474-9	5

WEIGHT: approx. 5.8 pounds.

PUBLICATION: O.P. 863A.

SET, SPARE PARTS, SQUADRON, SBAE, MARK 1 AND MODS.



SET, SPARE PARTS, SQUADRON, SBAE, MARK 1 AND MODS.

STOCK No. 2-S-4335

THE Spare Parts Set for SBAE Mark 1 and Mods. is issued to squadrons using the Norden SBAE. Since squadrons using this SBAE also commonly use the Norden bombsight, the Bombsight Spare Parts Set (Stock No. 2-S-4323) is usually issued with this set, the 2 sets

being supplied in combined form in a large chest and one or more boxes.

The set consists of the parts included on Ordnance Allowance List No. 17779A and listed on the following page.

SET, SPARE PARTS, SQUADRON, SBAE, MARK 1 AND MODS. (CONT'D)

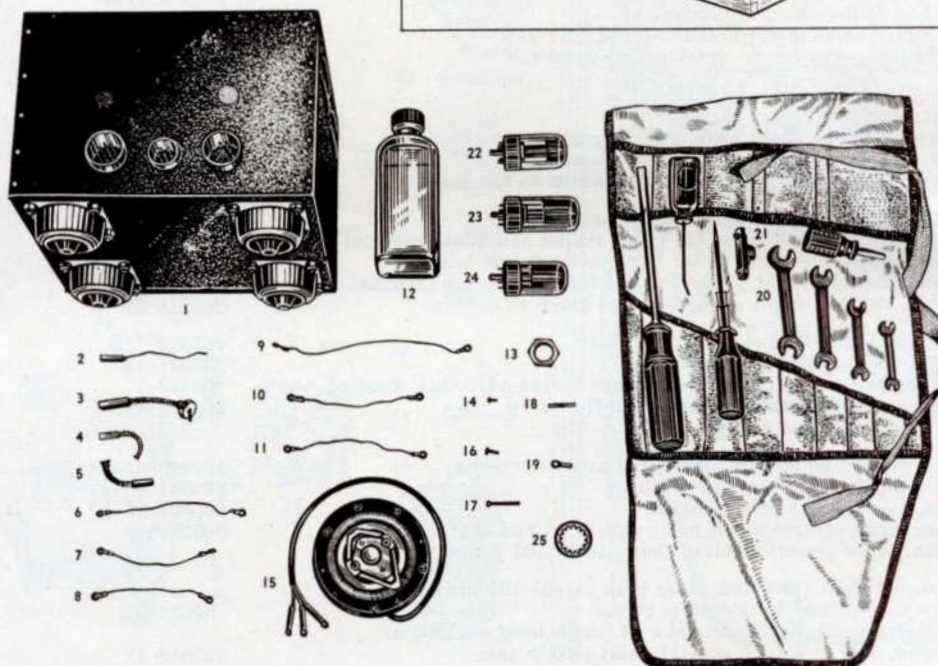
SET, SPARE PARTS, SQUADRON, SBAE, MARK 1 AND MODS. (Cont'd)

STOCK No. 2-S-4335

ITEM	NOMENCLATURE	BuORD DWG. NO.	ALLOWANCE
1	Armature, banking motor, complete 26-volt	205555-1B	1
2	Brush, banking motor, bank and center with contacts	205561-6, 6A, 6B	1
3	Brush, control sector box, bank with contact	199907-5, 6	4
4	Brush, control sector box, rudder swivel bracket with contact	19907-1, 6	4
5	Brush, flight gyro, rotor	148702-6	2
6	Brush, flight gyro, sector with contact	205526-1	8
7	Brush, servo motor complete	148753-1, 2, 3	4
8	Cable, follow-up (100 foot spool)		1
9	Winding servo motor brake solenoid, 26-volt	205541-11B	2
10	Winding servo motor clutch solenoid, 26-volt	205541-4B	2
11	Coil, banking motor, field 24-volt	205555-4B	2
12	Kit, tool SBAE		4
13	Lead, flexible, flight gyro, ground gyro case to cardan	205518-58	6
14	Lead, flexible, flight gyro, cut-out to cardan	205518-55	6
15	Lead, flexible, flight gyro, ground cardan to housing		6
16	Lead, flexible, flight gyro, aileron sector brush	205518-59	6
17	Lead, flexible, control sector brush rudder and banking sector	199911-11B	6
18	Lead, flexible, control sector box, rudder swivel brush	199911-11A	6
19	Lead, flexible, flight gyro, terminal block to cardan terminal	205518-56	6
20	Lead, flexible, flight gyro, terminal block to cardan	205518-57	6
21	Magnet, bank motor clapper complete	205562-11B	2
22	Motor, servo, shunt complete	205537-1B	1
23	Nut, servo motor, brake lever tension spring adjusting, knurled	205542-7	4
24	Nut, servo motor brake plunger shaft locking	205542-4B	6
25	Oil, dashpot (one half pints)		3
26	Pin, control sector box, piston rod extension clevis	199906-2	2
27	Pin, taper, follow-up lever bushing	265561-45	18
28	Pin, taper, flight gyro gudgeon	265561-37	12
29	Pin, taper, control sector box, cable drum and shaft	265561-42	12
30	Pins, taper (assorted, other than listed) 100 per set		1 set
31	Pins, straight (assorted, other than listed) 100 per set		1 set
32	Relay, servo and bank motors 26-volt	205532-5B	6
33	Rod, follow-up, 1/4 hexagonal x 28 inches long, set of four		1 set
34	Screw, 4-40 x 3/8-inch special, limit switch cam	205546-11	12
36	Screw, 8-32 x 7/16-inch fil., hd. control cable clamp	205544-8	12
35	Screw, 8-32 x 7/16-inch fil., hd. control cable clamp	205545-11A	12
37	Screws, SBAE assorted		1 set
38	Sector, contact, banking motor rotor brush complete	Assembly	1
39	Sector, control sector box, contact, rudder, complete	Assembly	1
40	Sector, control sector box, banking, complete	Assembly	1
41	Sector, flight gyro contact, complete	Assembly	1
42	Spring, banking motor, banking lever	205560-11	2
43	Spring, control sector box, cable drum	199909-10	2
44	Spring, control sector box, rudder swivel brush centering lower	199907-3B	2
44A	Spring, control sector box, rudder swivel brush centering upper	199907-3A	
45	Spring, servo motor, brake lever tension	205542-8	2
46	Spring, servo motor, brake lever release	205542-9	6
47	Universals, complete, bell crank, right hand		2
48	Universals, complete, bell crank, left hand		2
49	Wire, corlac No. 16 black (100 foot spool)		100 ft.

WEIGHT: approx. 62.0 pounds.

SET, SPARE PARTS, SQUADRON, SBAE MARK 2 AND MODS.



SET, SPARE PARTS, SQUADRON, SBAE MARK 2 AND MODS.

STOCK No. 2-S-4340

The Spare Parts Set for SBAE Mark 2 and Mods. is issued to squadrons using the Minneapolis-Honeywell SBAE. In the accompany-

ing list Minneapolis-Honeywell drawing numbers are marked with an asterisk (*).

The set contains the items listed below:

ITEM	NOMENCLATURE	BuORD DWG.	ALLOWANCE
1	Amplifier (26V) complete	G1024*	2
2	Brush, flight gyro rotor	148702-6	2
3	Brush, servo motor, complete	148753-1, 2, 3	4
4	Brush, rotary converter, AC	406660*	2
5	Brush, rotary converter, DC	406661*	2
6	Lead, flexible, flight gyro, ground, gyro case to cardan	205518-58	6
7	Lead, flexible, flight gyro, cutout to cardan	205518-55	6
8	Lead, flexible, flight gyro, ground, cardan to housing		6
9	Lead, flexible, flight gyro, aileron sector brush	205518-59	6
10	Lead, flexible, flight gyro, terminal block to cardan	205518-56	6

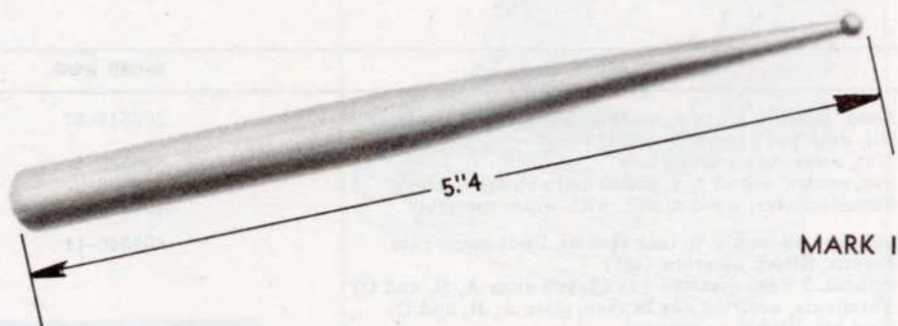
SET, SPARE PARTS, SQUADRON, SBAE MARK 2 AND MODS.

SET, SPARE PARTS, SQUADRON, SBAE MARK 2 AND MODS. (Cont'd)

ITEM	NOMENCLATURE	BuORD DWG.	ALLOWANCE
11	Lead, flexible, flight gyro, terminal block to cardan	205518-57	6
12	Oil, dash pot (one half pints)		3
13	Nut, servo motor cover lock	205560-6	3
14	Pin, control sector box, piston rod extension, clevis	199906-2	2
15	Potentiometer, servo motor, with wiper assembly	407205AA*	3
16	Screw, 4-40 inch x $\frac{3}{8}$ inch special, limit screw cam	205546-11	6
17	Screws, SBAE assorted (set)		1
18	Splices, 2 way, assorted (as Stakon sizes A, B, and C)		50
19	Terminals, assorted (as Stakon, sizes A, B, and C)		50
20	Tool kit, SBAE (less taps)		4
21	Tool (as Stakon No. WT112)		1
22	Tube, 7F7		3
23	Tube, 7N7		3
24	Tube, 7Y4		2
25	Washer, servo motor cover-lock nut locking (star type)	205560-5A	3

PUBLICATION: Ord Allowance List 19722.

SIGHT, OPEN FORE POST, MARK 1 AND MOD.



SIGHT, OPEN FORE POST, MARK 1

STOCK No. 2-S-3092

THE Open Fore Post Sight Mark 1 is used with the Open Rear Ring Sights Mark 6, Mark 10, or Mark 11.

The sight is an upright steel tapered post with a bead tip. It is interchangeable with the Fore Post Sight Mark 1, Mod. 1 which replaces the bead with a small peep sight ring. These sights can be mounted to the caliber .30 gun barrel jacket by means of a Front Wind Vane Sight Bracket (Stock No. 1-B-5984);

in other cases special clamps may be provided to fit a particular installation.

DIMENSIONS:

Diameter of post at tip, approx. 0.1 inch.

Diameter of post at base, approx. 0.4 inch.

Length, approx. 5.4 inches.

WEIGHT: approx. 0.3 pound.

PUBLICATION: O.P. 263.

BuORD DWG: Gen. Arr. 114077.



SIGHT, OPEN FORE POST, MARK 1, MOD. 1

STOCK No. 2-S-3093

THE Open Fore Post Sight Mark 1, Mod. 1 is interchangeable with the Mark 1 and is identical to it except that instead of a bead tip,

Mark 1, Mod. 1 has a small peep sight ring 0.3 inch in diameter.

SIGHT, OPEN FORE POST, MARK 5



SIGHT, OPEN FORE POST, MARK 5

STOCK No. 2-S-3096

THE Open Fore Post Sight Mark 5, was used with the Rear Ring Sight Mark 8 as an installation on caliber .30 PBY-5 bow guns. This combination has been superseded by the Fore Post Sight Mark 6, Mod. 1 and the Rear Ring Sight Mark 12, Mod. 1.

The sight consists of a plain upright post base, a tapered shoulder and a slender shaft with a bead tip. The entire piece is made of rust-proofed, non-reflecting steel and is sup-

ported in the Front Wind Vane Sight Bracket (Stock No. 1-B-5984).

DIMENSIONS:

Diameter of post tip, approx. 0.1 inch.

Diameter of post base, approx. 0.4 inch.

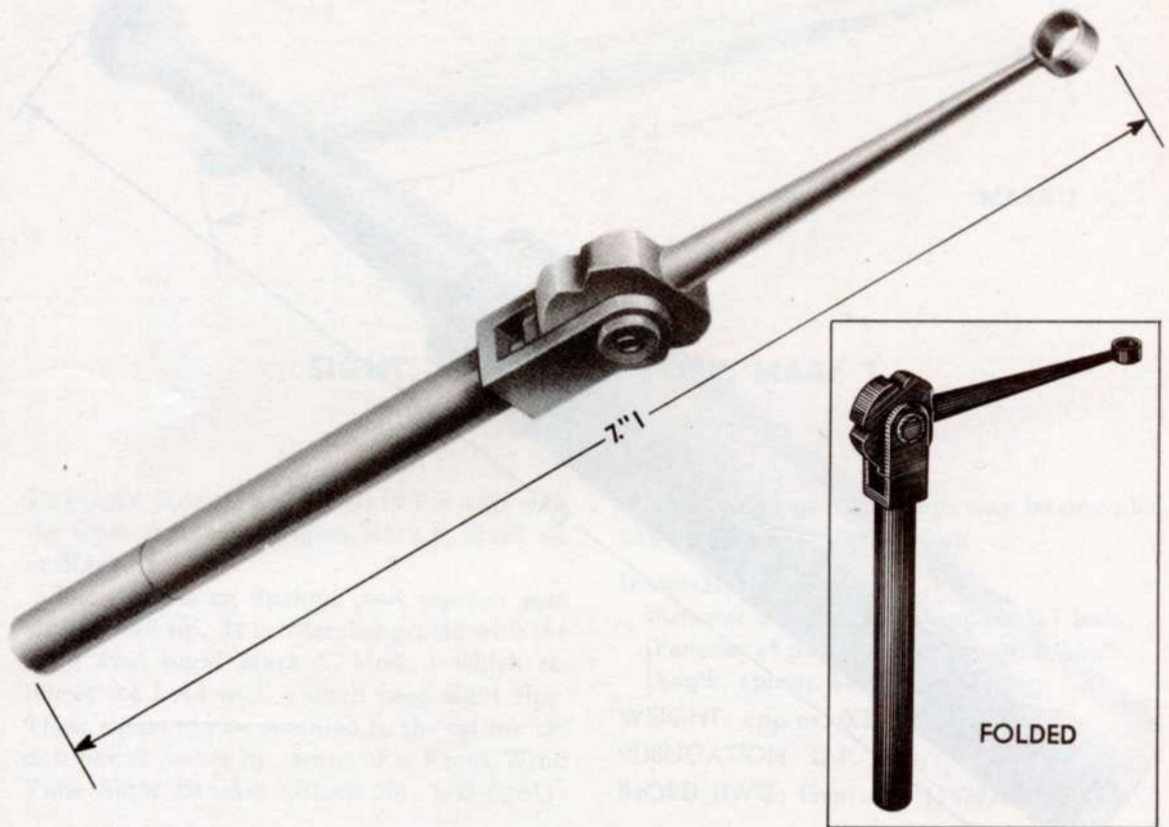
Overall, approx. 3.1 x 0.4 x 0.4 inches.

WEIGHT: approx. 0.6 pound.

PUBLICATION: O.P. 263.

BuORD DWG: Gen. Arr. 204036.

SIGHT, OPEN FORE POST, MARK 6, MOD. 1



SIGHT, OPEN FORE POST, MARK 6, MOD. 1

STOCK No. 2-S-3096-15

THE Open Fore Post Sight Mark 6, Mod. 1 is used with the Rear Ring Sight Mark 12, Mod. 1 on some flexible gun installations in PBV, PB2Y, PBN, and PBM airplanes. The Front Wind Vane Sight Bracket (Stock No. 1-B-5984) can be used to mount the sight to the barrel jacket of the caliber .30 gun; in other cases, special clamps may be provided for a particular installation.

A spring arrangement in the sight post enables the sight to be locked in any of 3 positions, and a notch near the base of the post indicates the limit to which the post may be shortened.

is at the top of the post. This ring enables the gunner to have a better view of the target on zero deflection shots.

A small peep sight ring, instead of a bead, DIMENSIONS:

Diameter of post at tip, approx. 0.1 inch.

Diameter of post at base, approx. 0.4 inch.

Diameter of ring at top of post, approx. 0.3 inch.

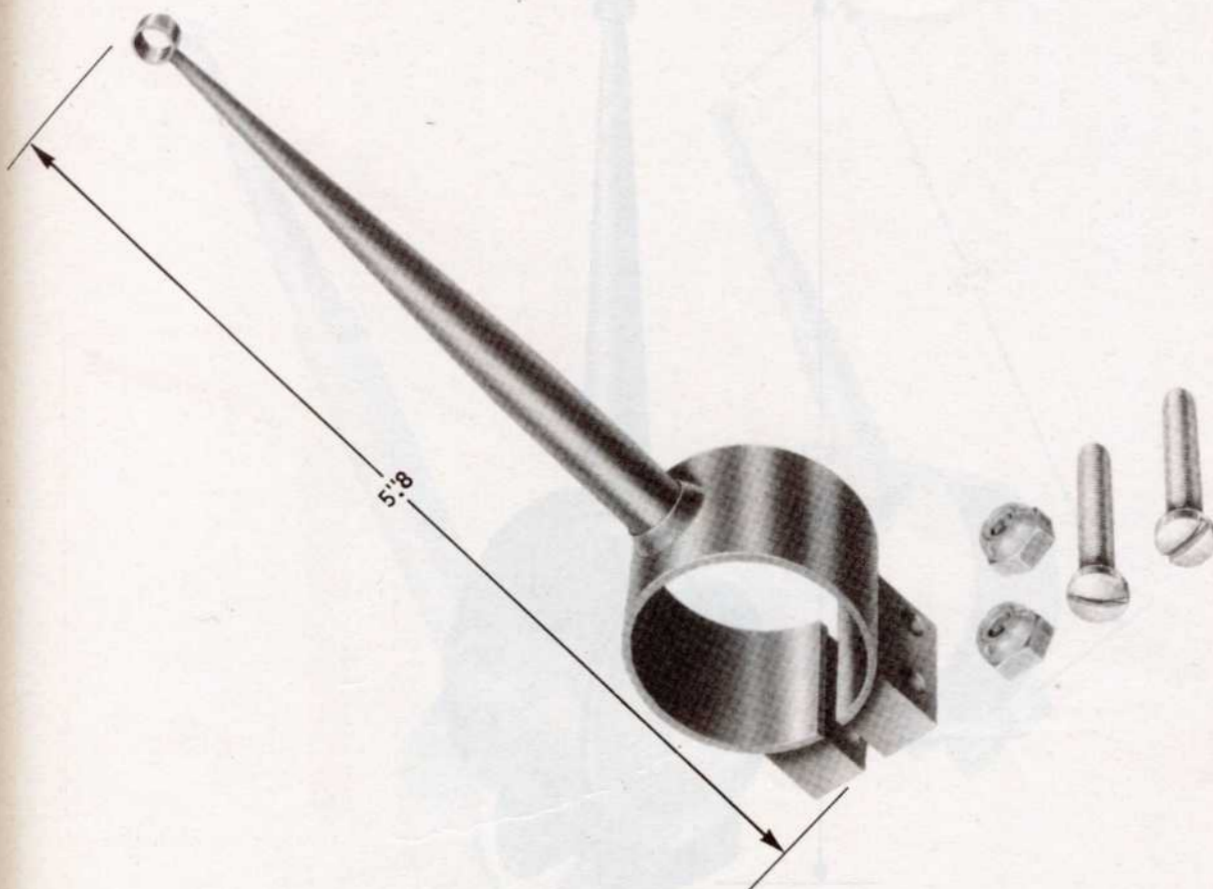
Overall, approx. 7.1 x 0.8 x 0.6 inches.

WEIGHT: approx. 0.2 pound.

PUBLICATION: O.P. 263.

BuORD DWG: Gen. Arr. 328852.

SIGHT, OPEN FORE POST, MARK 7



SIGHT, OPEN FORE POST, MARK 7

STOCK No. 2-S-3096-30

THE Open Fore Post Sight Mark 7 is used with the Rear Ring Sight Mark 13 to replace the modified combination of Fore Post Sight Type A-4 and Rear Ring Sight Type B-10 on the caliber .30 machine gun, flexibly mounted in the tunnel gun positions on TBF and TBM airplanes.

The sight consists of a tapered post having a small peep sight ring at its tip. The bottom of the post is brazed to a ring clamp which fastens the sight to the barrel jacket of a caliber .30 gun.

DIMENSIONS:

- Diameter of ring, approx. 0.3 inch.
- Diameter of clamp, approx. 1.3 inches.
- Length of post, approx. 3.9 inches.
- Height from center of gun bore to center of peep sight ring, approx. 4.7 inches.
- Overall, approx. 5.8 x 1.4 x 1.0 inches.

WEIGHT: approx. 0.2 pound.

PUBLICATION: O.P. 263.

BuORD DWG: Gen. Arr. 329523.

SIGHT, OPEN FORE POST, TYPE A-4



SIGHT, OPEN FORE POST, TYPE A-4

STOCK No. 2-S-3090

THE Open Fore Post Sight Type A-4, usually employed with the Rear Ring Sight Type B-10, is used on caliber .30 BAM flexible machine guns.

This sight is made of rust-proofed steel and has a dull finish to prevent reflection. The post is tapered and has a red enameled bead tip; the other end is inserted into a split collar which contains a 2-piece aluminum bushing. The collar fits around the front portion of the gun barrel jacket and is held by 2 small bolts and nuts at the bottom.

A modified version of the A-4 had a length-

ened post and was used as a tunnel gun installation on TBF and TBM airplanes. This has been replaced by the Open Fore Post Sight Mark 7.

DIMENSIONS: approx. 5.3 x 3.8 x 1.1 inches.

Height of post from center of gun bore to center of bead, approx. 3.7 inches.

WEIGHT: approx. 0.3 pound.

PUBLICATION: O.P. 263.

AAF DWG: 37B3578.

BuORD DWG: Gen. Arr. 297102.

SIGHT, OPEN FORE POST, TYPE A-5



SIGHT, OPEN FORE POST, TYPE A-5

STOCK No. 2-S-3091

THE Open Fore Post Sight Type A-5 usually employed with the Rear Ring Sight Type B-11, is used on caliber .50 BAM flexible machine guns.

This sight, though somewhat larger than the Post Sight A-4, is very similar in construction except for the aluminum bushing which has been eliminated.

A modified version of the A-5 (Stock No. 2-S-3091-10) has a longer post, and is used on an installation in the bow of the PBM-3S

with a modification of the Open Rear Ring Sight B-11 (Stock No. 2-S-3107-10).

DIMENSIONS: approx. 5.9 x 1.0 x 2.0 inches.

Height of post from center of gun bore to center of bead, approx. 4.3 inches.

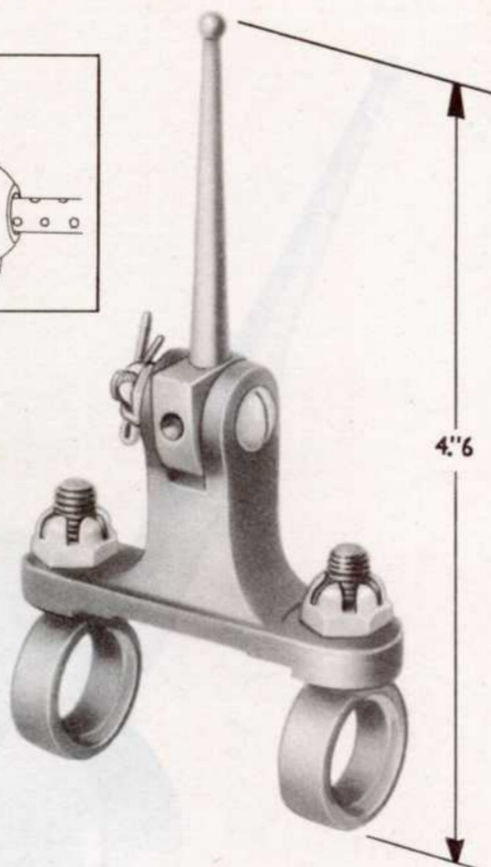
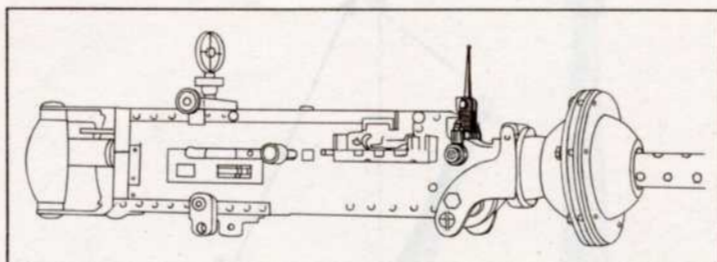
WEIGHT: approx. 0.3 inches.

PUBLICATION: O.P. 263.

AAF DWG: 37A5810.

BuORD DWG: Gen. Arr. 297059.

SIGHT, OPEN FORE POST, TYPE A-9



SIGHT, OPEN FORE POST, TYPE A-9

STOCK No. 2-S-3091-50

THE Open Fore Post Sight Type A-9 is a folding type sight used with the Rear Ring Sight Type L-2 on caliber .30 machine guns, flexibly mounted in ball and socket type mounts.

The sight is made from rust-proofed steel which is given a dull finish to prevent reflection. It consists of a tapered post, a mounting bracket and 2 eyebolts. A bead is located on the small end of the post and the other end is held in the bracket. The post is normally held in an upright position but when not in use it can be folded parallel to the gun barrel. The 2 eyebolts fasten to the base of the mount-

ing bracket, and fit outside the side plates of the gun just above the front trunnion, to which they are bolted. (See illustration). Vertical adjustment for the sight is possible through the use of shims under the mounting bracket.

DIMENSIONS:

Distance between eyebolts, approx. 1.5 inches.

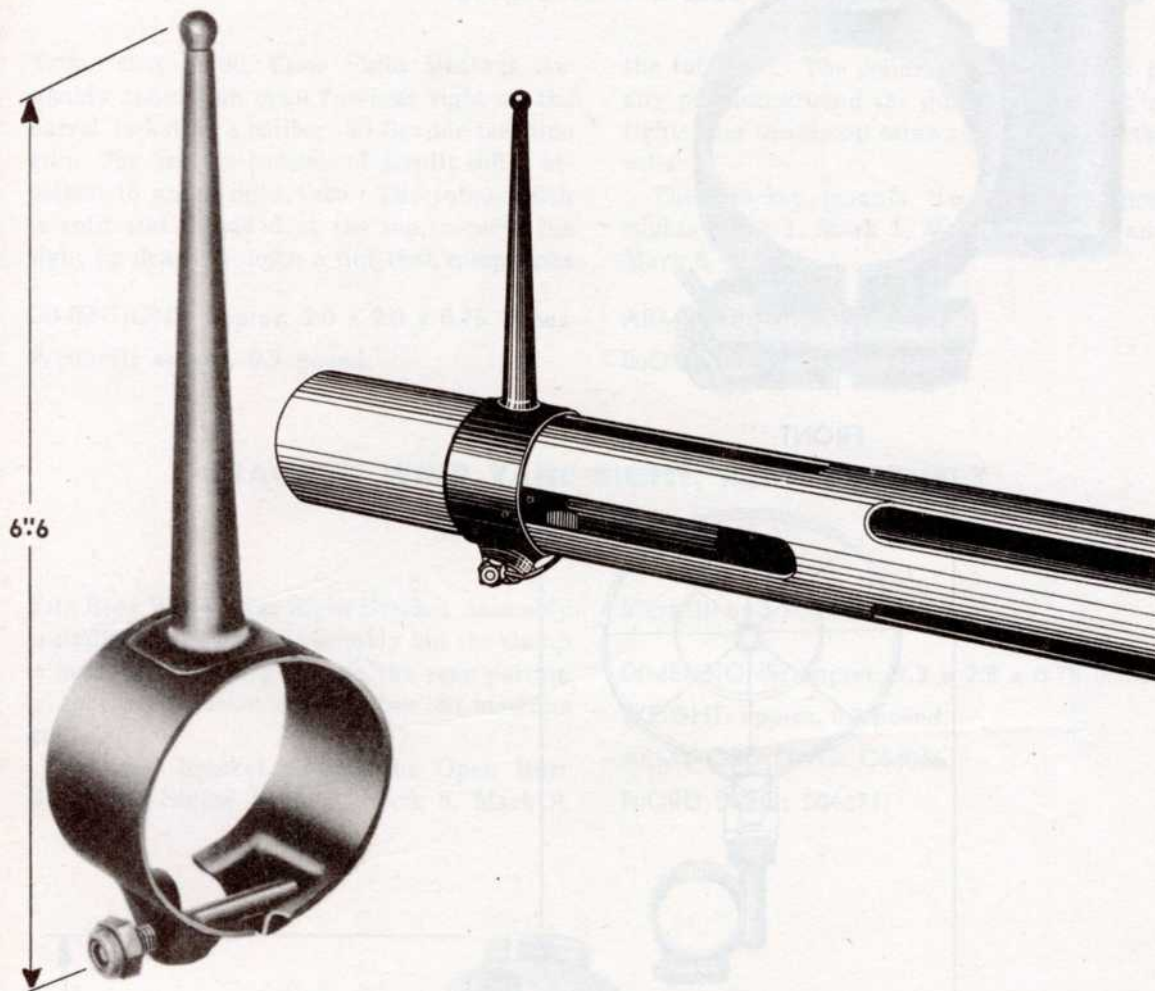
Overall, approx. 4.6 x 2.8 x 0.8 inches.

WEIGHT: approx. 6.0 ounces.

PUBLICATION: AAF Tech. Order 11-35-7.

AAF DWG: 40B6227.

SIGHT, OPEN FORE POST, TYPE A-11



SIGHT, OPEN FORE POST, TYPE A-11

STOCK No. 2-S-3096-300

THE Open Fore Post Sight Type A-11 is used with the Open Rear Ring Sight Type B-13 on flexibly-mounted caliber .50 machine guns.

The sight is made of rust-proofed steel which is given a dull finish to prevent reflection. The post is tapered and has a red enameled bead at its small end. The other end is brazed to a split collar which is used to secure the assembly to the gun barrel.

DIMENSIONS: approx. 6.6 x 2.0 x 1.0 inches.

Height of post from center of gun bore to center of bead, approx. 5.1 inches.

WEIGHT: approx. 0.1 pound.

PUBLICATIONS: AAF Tech. Order 11-35-13, O.P. 263.

AAF DWG: 42A8317.

BRACKET, WIND VANE SIGHT



FRONT



2-1



2.5

REAR

BRACKET, WIND VANE SIGHT (CONT'D)

BRACKET, WIND VANE SIGHT, FRONT ASSEMBLY

STOCK No. 1-B-5984

THE Front Wind Vane Sight Bracket Assembly mounts an open forepost sight on the barrel jacket of a caliber .30 flexible machine gun. The bracket consists of a split collar attached to an upright tube. The tube, which is split and threaded at the top, secures the sight by drawing down a nut that compresses

the tube end. The collar may be fastened in any position around the gun barrel jacket by tightening the clamp screws at the base of the collar.

The bracket mounts the Open Forepost Sights Mark 1, Mark 1, Mod. 1, Mark 5 and Mark 6, Mod. 1.

DIMENSIONS: approx. 2.0 x 2.0 x 0.75 inches.

WEIGHT: approx. 0.3 pound.

ARMY ORD DWG: B134158.

BuORD DWG: 162407.

BRACKET, WIND VANE SIGHT, REAR ASSEMBLY

STOCK No. 1-B-5984-15

THE Rear Wind Vane Sight Bracket Assembly is similar to the Front Assembly but the clamp is made slightly larger to fit the rear portion of the barrel jacket of a caliber .30 machine gun.

The rear bracket mounts the Open Rear Ring Gun Sights Mark 6, Mark 8, Mark 9,

Mark 10 and Mark 12.

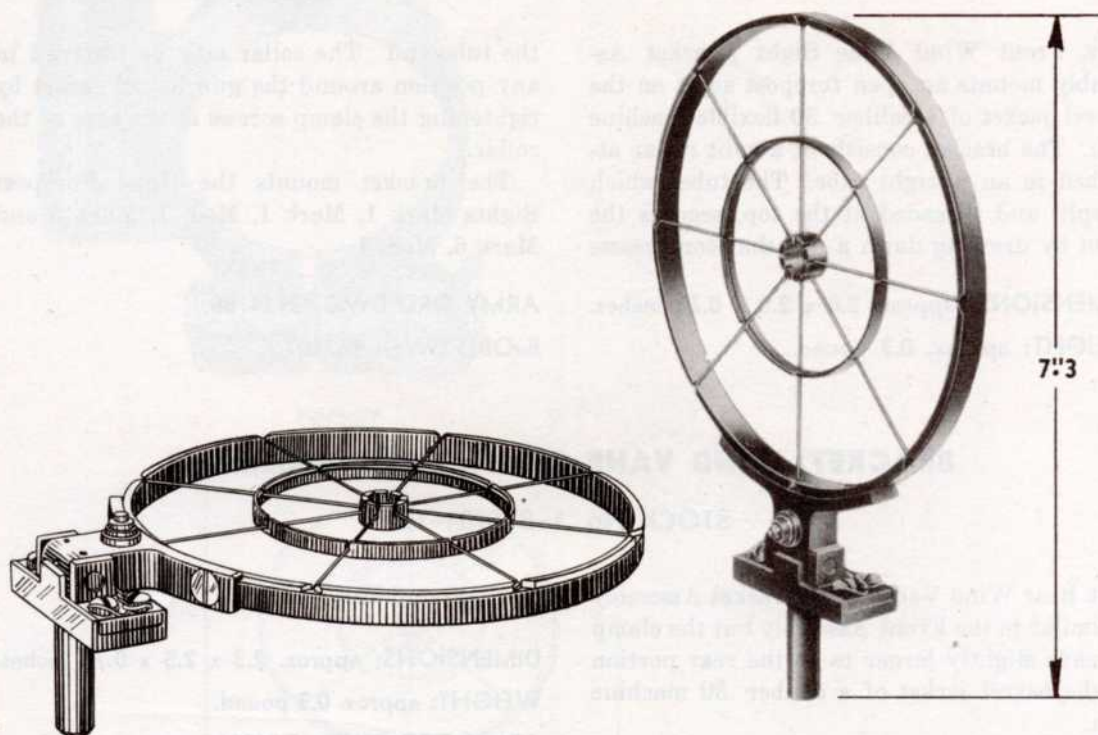
DIMENSIONS: approx. 2.3 x 2.5 x 0.75 inches.

WEIGHT: approx. 0.3 pound.

ARMY ORD DWG: C64066.

BuORD DWG: 204671.

SIGHT, OPEN REAR RING, MARK 6



SIGHT, OPEN REAR RING, MARK 6

STOCK No. 2-S-3101

THE Open Rear Ring Sight Mark 6 is used with the Fore Post Sight Mark 1 or Mark 1, Mod. 1 on caliber .30 flexibly mounted machine guns in SO3C and J2F airplanes. It is attached to the gun by the Rear Wind Vane Sight Bracket (Stock No. 1-B-5984-15).

The sight consists of an outer ring, a middle ring, and an inner ring or peep sight. The middle and inner rings are supported by wires which divide the sight into 45 degree sectors. The outer ring is mounted to the base post by a hinge which permits the sight, when not in use, to be folded parallel to the gun barrel.

With the sight set at a distance of 18 inches from the eye, the inner and outer rings cor-

respond to target speeds of approximately 100 and 200 knots respectively.

The only difference between the Mark 6 and the Mark 10 is that the Mark 10 is larger in diameter.

DIMENSIONS:

- Diameter of outer ring, approx. 5.0 inches.
- Diameter of middle ring, approx. 2.5 inches.
- Diameter of inner ring, approx. 0.5 inch.
- Height of central post, approx. 1.1 inches.
- Overall, approx. 5.0 x 7.3 x 0.8 inches.

WEIGHT: approx. 0.4 pound.

PUBLICATION: O.P. 263.

BuORD DWG: Gen. Arr. 189730.

SIGHT, OPEN REAR RING, MARK 8



SIGHT, OPEN REAR RING, MARK 8

STOCK No. 2-S-3103

THE Open Rear Ring Sight Mark 8 is used with the Fore Post Sight Mark 5. It is mounted to the caliber .30 machine gun by means of the Rear Wind Vane Sight Bracket (Stock No. 1-B-5984-15).

The sight consists of an outer ring mounted on a post, and a peep sight inner ring mounted on a slender continuation of the post. There are no dividing cross-wires on this sight.

The outer ring, when set at a distance of 23 inches from the eye, represents a target

speed of approximately 70 knots.

DIMENSIONS:

Diameter of outer ring, approx. 2.3 inches.

Diameter of inner ring, approx. 0.4 inch.

Height of central post, approx. 2.0 inches.

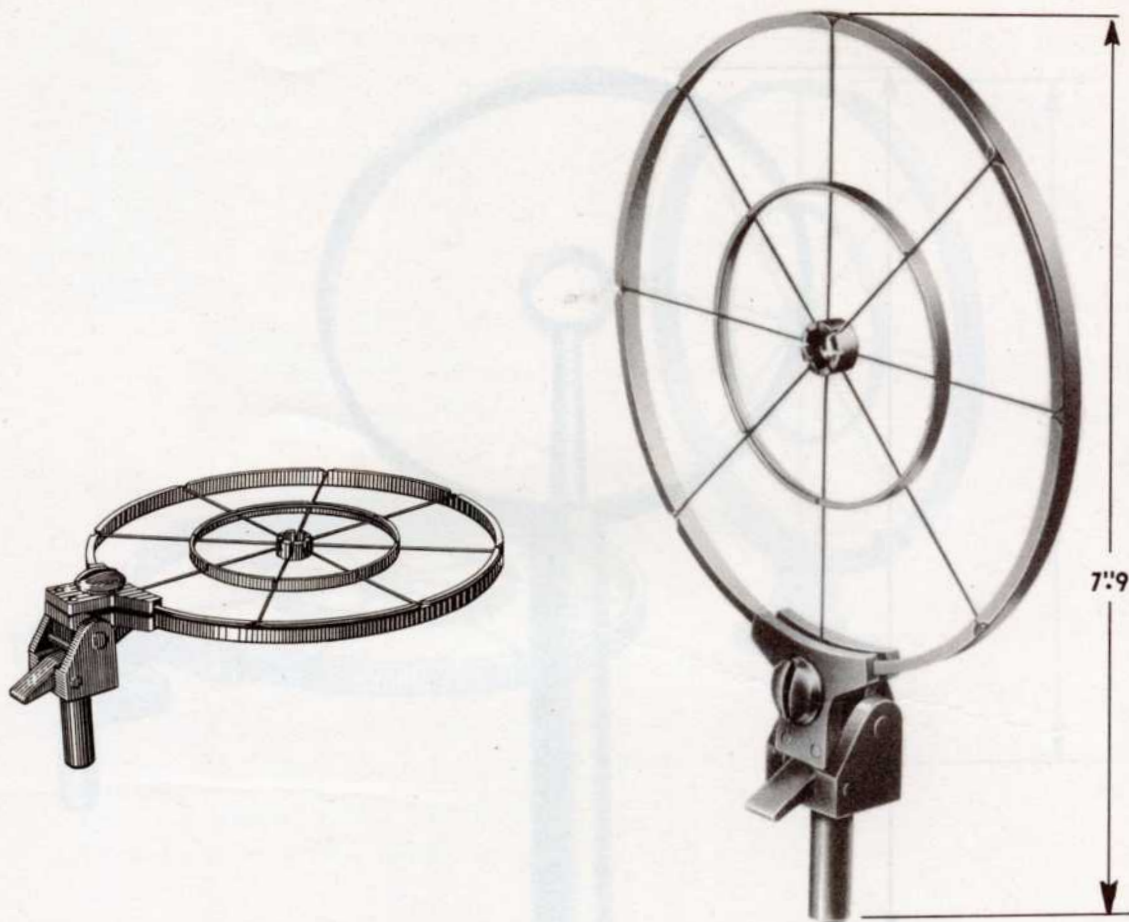
Overall, approx. 2.3 x 4.8 x 0.8 inches.

WEIGHT: approx 0.1 pound.

PUBLICATION: O.P. 263.

BuORD DWG: Gen. Arr. 204036.

SIGHT, OPEN REAR RING, MARK 10



SIGHT, OPEN REAR RING, MARK 10

STOCK No. 2-S-3105

THE Open Rear Ring Sight Mark 10 is used with the Fore Post Sight Mark 1 or the Fore Post Sight Mark 1, Mod. 1. It is attached to the caliber .30 machine gun by the Rear Wind Vane Sight Bracket (Stock No. 1-B-5984-15).

The sight consists of an outer ring, a middle ring and an inner ring or peep sight. The middle and inner rings are supported by wires which divide the sight into 45-degree sectors. The outer ring is mounted to the base post by a hinge which permits the sight, when not in use, to be folded parallel to the gun barrel.

With the sight set a distance of 20 inches from the eye, the outer and middle rings cor-

respond to target speeds of approximately 100 and 200 knots respectively.

The only difference between the Mark 10 and Mark 6 is that the Mark 10 is larger in diameter.

DIMENSIONS:

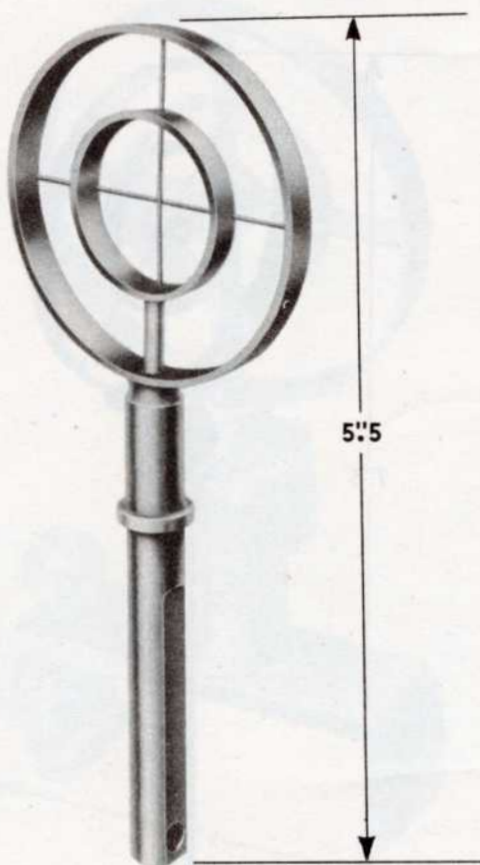
- Diameter of outer ring, approx. 5.5 inches.
- Diameter of middle ring, approx. 2.8 inches.
- Diameter of inner ring, approx. 0.5 inch.
- Overall, approx. 5.5 x 7.9 x 1.3 inches.

WEIGHT: approx. 0.4 pound.

PUBLICATION: O.P. 263.

BuORD DWGS: SK. 58279, Gen. Arr. 272644.

SIGHT, OPEN REAR RING, MARK 11



SIGHT, OPEN REAR RING, MARK 11

STOCK No. 2-S-3105-50

THE Open Rear Ring Sight Mark 11, is used with the Fore Post Sight Mark 1 or Mark 1, Mod. 1 on Gun Mount Adapters Mark 11, Mod. 2, or Mod. 3. The bracket for the sight is part of the adapter. These sights are used as alternates in place of the Illuminated Sight Mark 9 or Mark 9, Mod. 1 on flexible gun installations in SB2A, SB2C, and SBD airplanes or in the turret of the TBF and TBM airplanes.

The sight consists of 2 rings, mounted on the same central post and 2 cross-wires, one vertical and the other horizontal. The base of the post has flattened sides.

With the sight set at a distance of 16 inches from the eye, the inner and outer rings correspond to target speeds of approximately 50 and 100 knots respectively.

DIMENSIONS:

Diameter of outer ring, approx. 2.3 inches.

Diameter of inner ring, approx. 1.2 inches.

Height of central post, approx. 3.3 inches.

Overall, approx. 5.5 x 2.4 x 0.5 inches.

WEIGHT: approx. 0.2 pound.

MFR'S DWG: Bell Aircraft Corporation,
03-059-002.

BuORD DWG: 389087.

SIGHT, OPEN REAR RING, MARK 12, MOD. 1



SIGHT, OPEN REAR RING, MARK 12, MOD. 1

STOCK No. 2-S-3105-80

THE Open Rear Ring Sight Mark 12, Mod. 1 is used with the Open Fore Post Sight Mark 6, Mod. 1. The Rear Wind Vane Sight Bracket (Stock No. 1-B-5984-15) is used to mount the sight to the caliber .30 gun. A notch near the base of the sight post indicates the limit to which the post may be shortened.

The sight consists of an outer ring, a middle ring and an inner ring. These rings are concentric and supported by wires which divide the sight into 45-degree sectors. With the sight set at a distance of 20 inches from the eye, the middle and outer rings correspond to

target speeds of approximately 50 and 100 knots respectively.

Like its companion fore post sight, a spring arrangement locks the sight in any of 3 positions.

DIMENSIONS:

Diameter of outer ring, approx. 2.9 inches.

Diameter of middle ring, approx. 1.4 inches.

Diameter of inner ring, approx. 0.4 inch.

Overall, approx. 7.5 x 2.8 x 0.8 inches.

WEIGHT: approx. 0.3 pound.

BuORD DWG: Gen. Arr. 328864.

SIGHT, OPEN REAR RING, MARK 13



SIGHT, OPEN REAR RING, MARK 13

STOCK No. 2-S-3105-100

THE Open Rear Ring Sight Mark 13 is used with the Fore Post Sight Mark 7 to replace the modified combination of the Open Sights A-4 and B-10 on the caliber .30 machine gun in the tunnel location in the TBF and TBM airplanes. A bracket and clamp for mounting the sight on the receiver of a caliber .30 gun is an integral part of the sight and permits the raising and lowering of the sight post and rings one inch.

The sight has 3 concentric rings, each braced by 4 cross pieces having the same width and thickness as the rings.

With the sight set at a distance of 13 inches from the eye, the middle and outer rings correspond to target speeds of approximately 50 and 100 knots respectively.

DIMENSIONS:

Diameter of outer ring, approx. 1.9 inches.

Diameter of middle ring, approx. 1.0 inch.

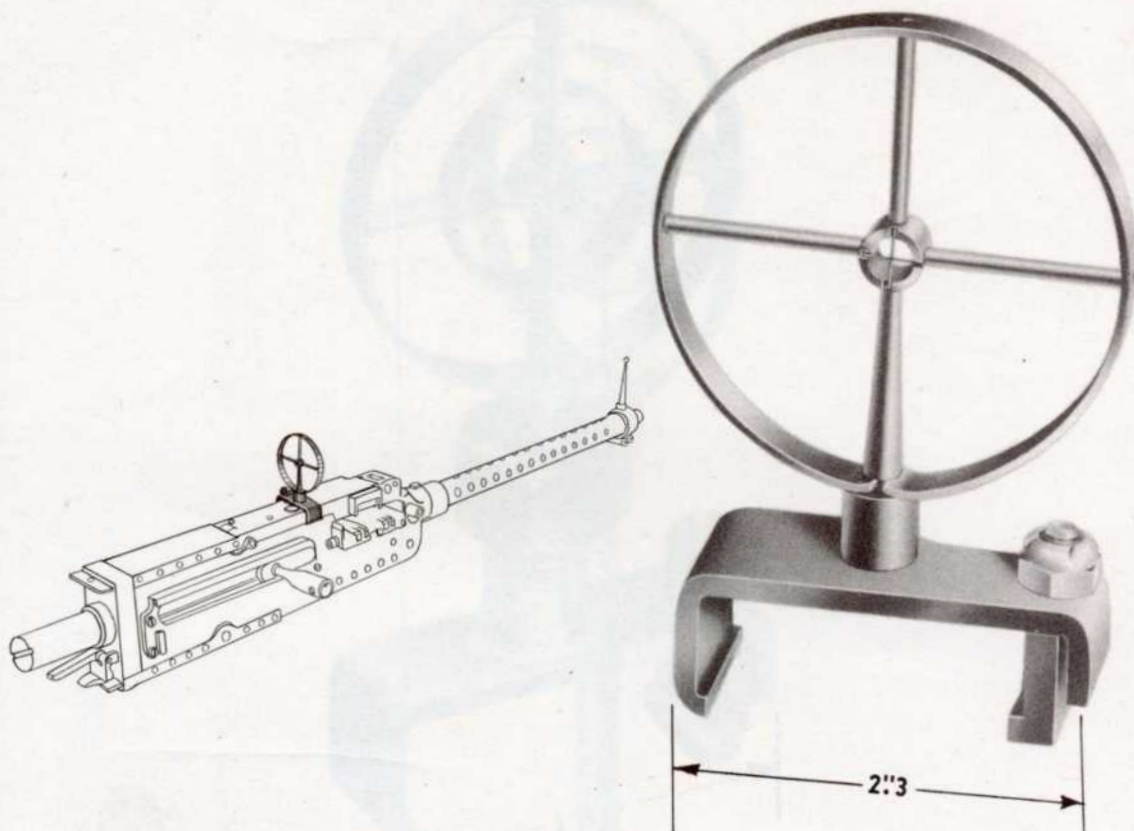
Diameter of inner ring, approx. 0.3 inch.

Overall, approx. 4.0 x 2.1 x 0.8 inches.

WEIGHT: approx. 0.2 pound.

BuORD DWG: Gen. Arr. 329522.

SIGHT, OPEN REAR RING, TYPE B-10



SIGHT, OPEN REAR RING, TYPE B-10

STOCK No. 2-S-3106

THE Open Rear Ring Sight Type B-10 is used with the Open Fore Post Sight Type A-4 on a flexibly mounted caliber .30 machine gun.

The sight is made of rust-proofed steel and has a dull finish to prevent reflection. It consists of 2 concentric rings and a supporting clamp. The outer ring is connected to a metal post mounted on the clamp. The inner ring or peep sight is supported from the larger ring, and contains 2 cross hairs which are used to align the bead on the post sight. The clamp, consisting of a horizontal bar with 2 hooked lugs, secures the sight to the cover plate of the machine gun.

With the sight set at a distance of 12.5 inches from the eye, the outer ring radius cor-

responds to a target speed of approximately 130 knots.

A modified version of this sight, with rings raised on an inserted post, was used on the tunnel gun installation of TBF and TBM airplanes pending availability of Open Rear Ring Sight Mark 13.

DIMENSIONS:

Diameter of outer ring, approx. 2.3 inches.

Diameter of small ring, approx. 0.3 inch.

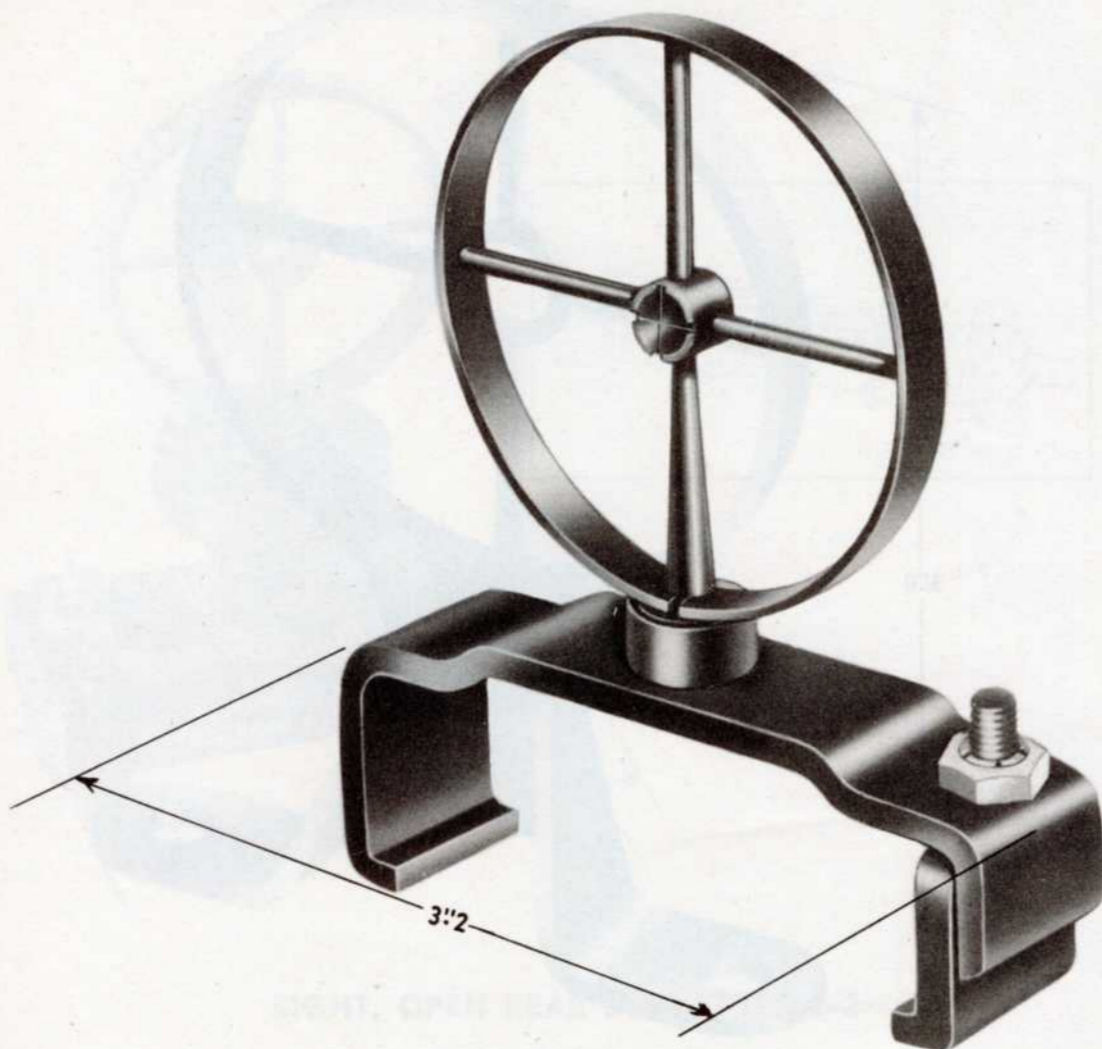
Overall, approx. 3.5 x 2.3 x 0.8 inches.

WEIGHT: approx. 0.2 pound.

AAF DWG: 37B3574.

BuORD DWG: Gen. Arr. 297061.

SIGHT, OPEN REAR RING, TYPE B-11



SIGHT, OPEN REAR RING, TYPE B-11

STOCK No. 2-S-3107

THE Open Rear Ring Sight Type B-11 is similar to the B-10 except for the clamp bracket which is slightly larger in order to fit on caliber .50, M2, BAM guns. This sight is used with the Open Fore Post Sight Type A-5. When set at a distance of 17.2 inches from the eye, the ring radius is equivalent to a target speed of approximately 100 knots.

A modified version of the B-11 has the rings raised and is used with the modified Open Fore Post Sight Type A-5 on some gun installations in PB4Y airplanes.

DIMENSIONS:

Inside diameter of large ring, approx. 2.3 inches.

Inside diameter of small ring, approx. 0.3 inches.

Overall, approx. 3.2 x 0.8 x 3.7 inches.

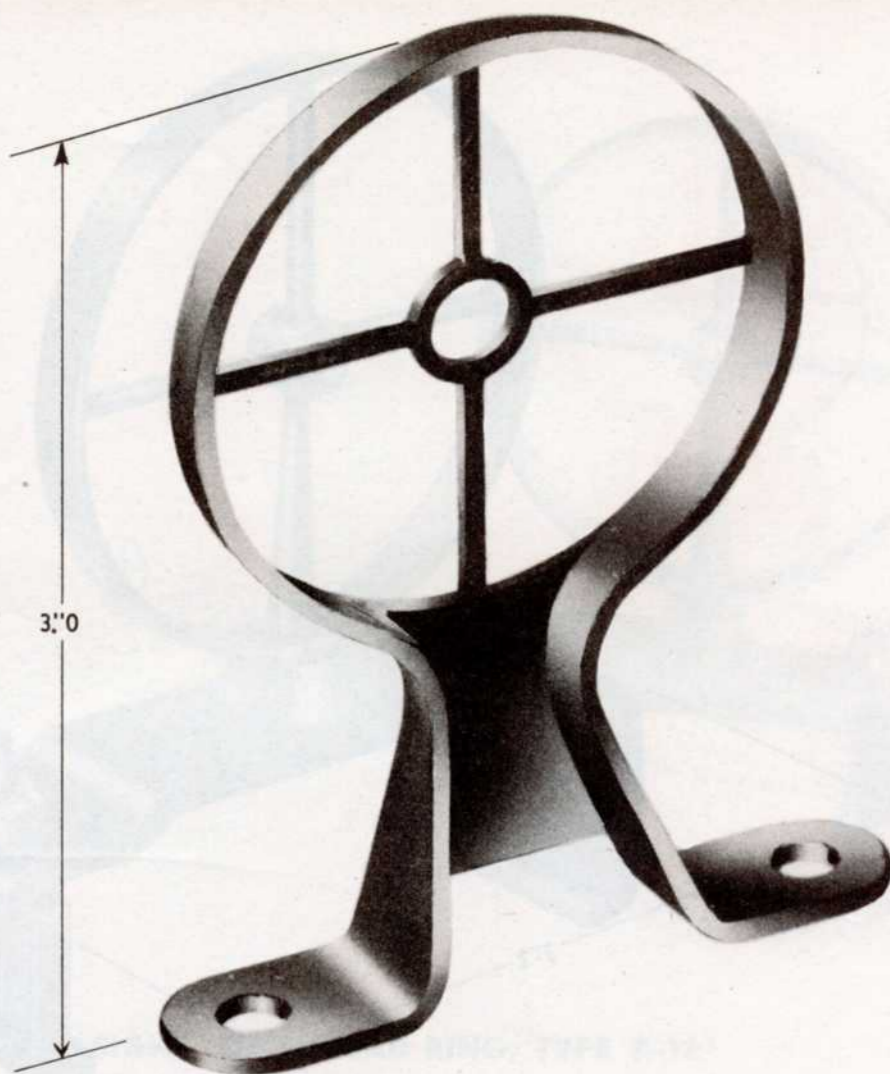
WEIGHT: approx. 0.3 pound.

AAF DWG: 37A5811.

PUBLICATION: O.P. 263.

BuORD DWG: Gen. Arr. 297057.

SIGHT, OPEN REAR RING, TYPE B-13



SIGHT, OPEN REAR RING, TYPE B-13

STOCK No. 2-S-3108

THE Open Rear Ring Sight Type B-13 is used on flexibly mounted caliber .50 machine guns with the Open Fore Post Sight Type A-11.

The sight is made from a rust-proofed steel stamping which has a dull finish to prevent reflection. The stamping forms a 2-holed mounting bracket, 2 concentric rings, and 4 quadrant dividing supports for the center ring.

When this sight is placed at a distance of 8 inches from the eye, the large ring radius is

equivalent to an angular value of approximately 110 mils or a target speed of approximately 160 knots.

DIMENSIONS:

Inside diameter of large ring, approx. 1.8 inches.

Inside diameter of small ring, approx. 0.3 inch.

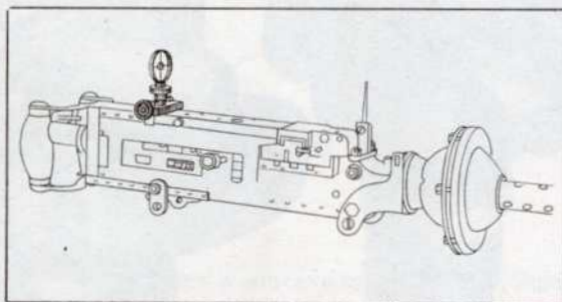
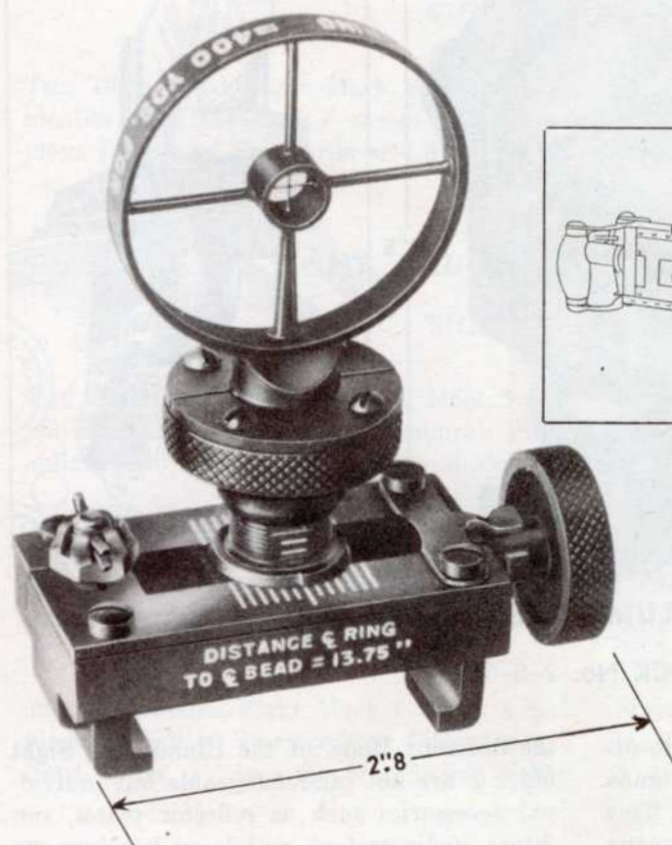
Overall, approx. 3.0 x 2.4 x 0.6 inches.

WEIGHT: approx. 0.1 pound.

PUBLICATION: AAF Tech. Order 11-35-13.

AAF DWG: 42B8318.

SIGHT, OPEN REAR RING, TYPE L-2



SIGHT, OPEN REAR RING, TYPE L-2

STOCK No. 2-S-3109

THE Open Rear Ring Sight Type L-2 is employed with the Open Fore Post Sight Type A-9 on caliber .30 machine guns flexibly mounted in ball and socket type mounts.

The sight is made from a rust-proofed steel which has a dull finish to prevent reflection. It consists of 2 concentric rings, an adjusting mechanism, and a base clamp. A metal post, mounting the larger ring, is connected to a bar on top of the base clamp. The smaller ring or center peep is supported from the larger ring and contains 2 cross hairs which are used to align with the bead of the post sight and the target. The clamp consists of a horizontal bar and 2 hooked lugs which secure the sight to the cover plate of the gun. Two

thumb wheels enable vertical and horizontal corrections to be applied.

When this sight is placed at a distance of 8 inches from the eye, the large ring radius is equivalent to an angular value of approximately 98 mils or a target speed of approximately 140 knots.

DIMENSIONS:

Inside diameter of large ring, approx. 1.6 inches.

Inside diameter of small ring, approx. 0.3 inch.

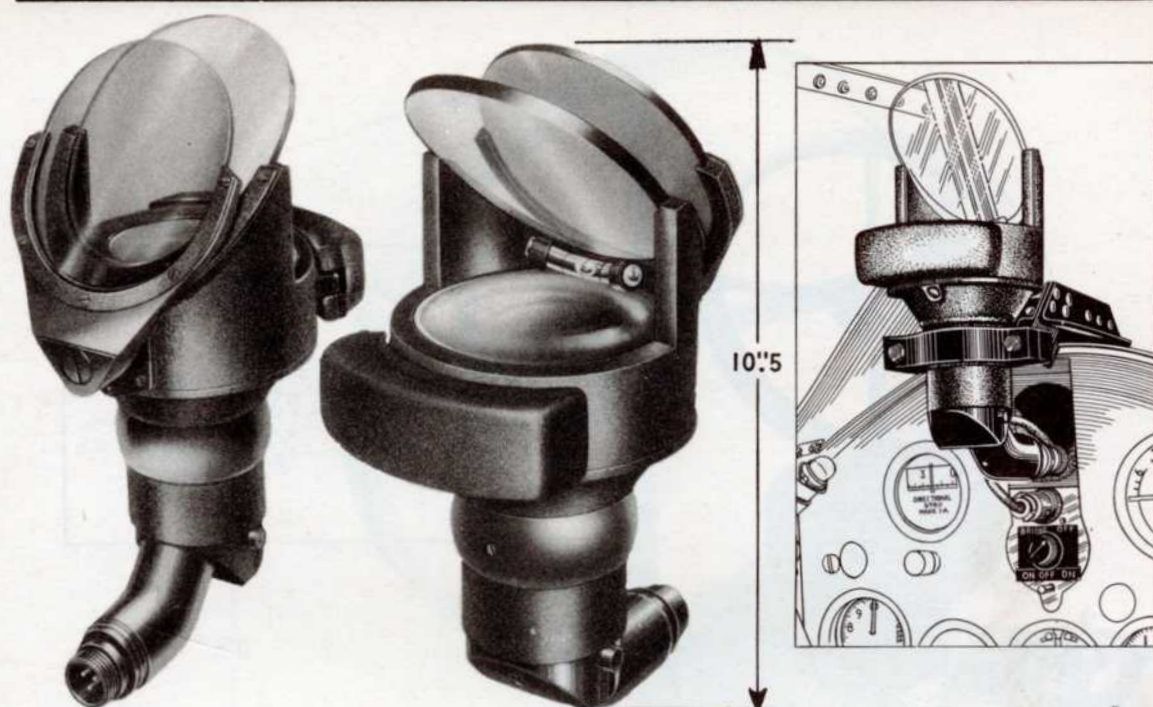
Overall, approx. 3.8 x 2.8 x 1.2 inches.

WEIGHT: approx. 0.4 pound.

PUBLICATION: AAF Tech. Order 11-35-7.

AAF DWG: 38D6273.

SIGHT, ILLUMINATED, MARK 8 AND MODS.



SIGHT, ILLUMINATED, MARK 8

STOCK No. 2-S-3114

THE Illuminated Sight Mark 8 is used to direct the line of sight of fixed machine guns or gun cameras by aiming the airplane. This sight is secured to the cowl of the airplane so that a Reflector Plate (Stock No. 2-P-3605) at the top of the sight body is in the line of the pilot's normal forward vision. A lamp, furnished as a separate item, is mounted in the base and sends light through a reticle so that the reticle image is projected through an optical system onto the reflector plate. Thus, when the pilot looks through the plate he sees the image of the reticle superimposed upon the target. A Neutral Sun Filter (Stock No. 2-F-189) mounted on a pivot just forward of the reflecting plate, may be swung out of the line of sight when the sky background does not require its use.

Located at the junction of the reflector plate and sight body is a liquid-filled Inclinator Vial (Stock No. 2-V-900), with glass ball. This shows the pilot, while sighting, if the airplane is skidding or slipping.

For installation purposes, all modifications of the Sight Mark 8 are interchangeable as complete assemblies. The optical elements of

the different Mods. of the Illuminated Sight Mark 8 are not interchangeable but individual accessories such as reflector plates, sun filters, inclinometers, and lamp housings are completely interchangeable in all sights.

The Illuminated Sight Mark 8 using a flat metal reticle (Stock No. 2-R-603), is manufactured by Bell and Howell and employs Bausch and Lomb or Pittsburgh Plate Glass optics.

Stock numbers for sights using adjustable reflectors will be found elsewhere in this book under Reflectors, Adjustable, for Illuminated Sights Mark 8.

DIMENSIONS: approx. 10.5 x 6.5 x 4.1 inches.

WEIGHT: approx. 3.5 pounds.

VOLTAGE: 12- or 24-volt DC.

LAMP: (12-volt) Mazda No. 1652 IF, S-8, 21/21 candlepower (Stock No. 17-L-6733-35); (24-volt) Mazda No. 890, GB-11 OS, 21/21 candlepower (Stock No. 17-L-6734-35).

PUBLICATIONS: O.P. 803; O.C.L. V-19-42, O.T.I. FV-4-43; FV-12-43.

BuORD DWG: SK. 94290, Gen. Arr. 238544.

SIGHT, ILLUMINATED, MARK 8 AND MODS. (CONT'D)

SIGHT, ILLUMINATED, MARK 8, MOD. 1

STOCK No. 2-S-3114-10

THE Illuminated Sight Mark 8, Mod. 1 is identical with the Mark 8 except that it employs Bureau of Standards or Libby-Owens-

Ford optics. It uses a flat metal reticle (Stock No. 2-R-603).

SIGHT, ILLUMINATED, MARK 8, MOD. 2

STOCK No. 2-S-3114-20

THE Illuminated Sight Mark 8, Mod. 2 employs Bausch and Lomb or Pittsburgh Plate optics. It differs from the Sight Mark 8 in

that it uses a concave metal reticle (Stock No. 2-R-600). Flat and concave reticles are not interchangeable.

SIGHT, ILLUMINATED, MARK 8, MOD. 3

STOCK No. 2-S-3114-30

THE Illuminated Sight Mark 8, Mod. 3 employs Bureau of Standards or Libby-Owens-Ford optics, as does the Illuminated Sight

Mark 8, Mod. 1, but uses a concave metal reticle (Stock No. 2-R-600) like the Sight Mark 8, Mod. 2.

SIGHT, ILLUMINATED, MARK 8, MOD. 4

STOCK No. 2-S-3114-40

THE Illuminated Sight Mark 8, Mod. 4 employs Bausch and Lomb or Pittsburgh Plate optics and differs from Illuminated Sight Mark 8, Mod. 2 in the dimensions of the op-

tical system. It has optics of small diameter in contrast to the large diameter optics used in the Mark 8, Mod. 2. The sight also employs a concave metal reticle (Stock No. 2-R-600).

SIGHT, ILLUMINATED, MARK 8 AND MODS. (CONT'D)

SIGHT, ILLUMINATED, MARK 8, MOD. 5

STOCK No. 2-S-3114-50

THE Illuminated Sight Mark 8, Mod. 5 employs Bureau of Standards or Libby-Owens-Ford optics of small diameter, differing from the Illuminated Sight Mark 8, Mod. 3 in the

dimensions of the optics. The sight also employs a concave metal reticle (Stock No. 2-R-600).

SIGHT, ILLUMINATED, MARK 8, MOD. 6

STOCK No. 2-S-3114-54; 2-S-3114-55 (WITHOUT REFLECTOR PLATE ASSEMBLY FOR F4U INSTALLATION).

THE Illuminated Sight Mark 8, Mod. 6 is manufactured by the American Cystoscope Makers, Inc. and uses Bureau of Standards or Libby-Owens-Ford optics. The Mod. 6, which is similar to the Mark 8, Mod. 2, is furnished either with the sight head or without it. When used in the raised cabin version of the F4U

airplane, the frame which carries the reflector plate and sun filter is not installed. Therefore, only the sight body is furnished. When installed in these airplanes, the windshield is used as the reflector plate.

The sight uses a concave metal reticle (Stock No. 2-R-600).

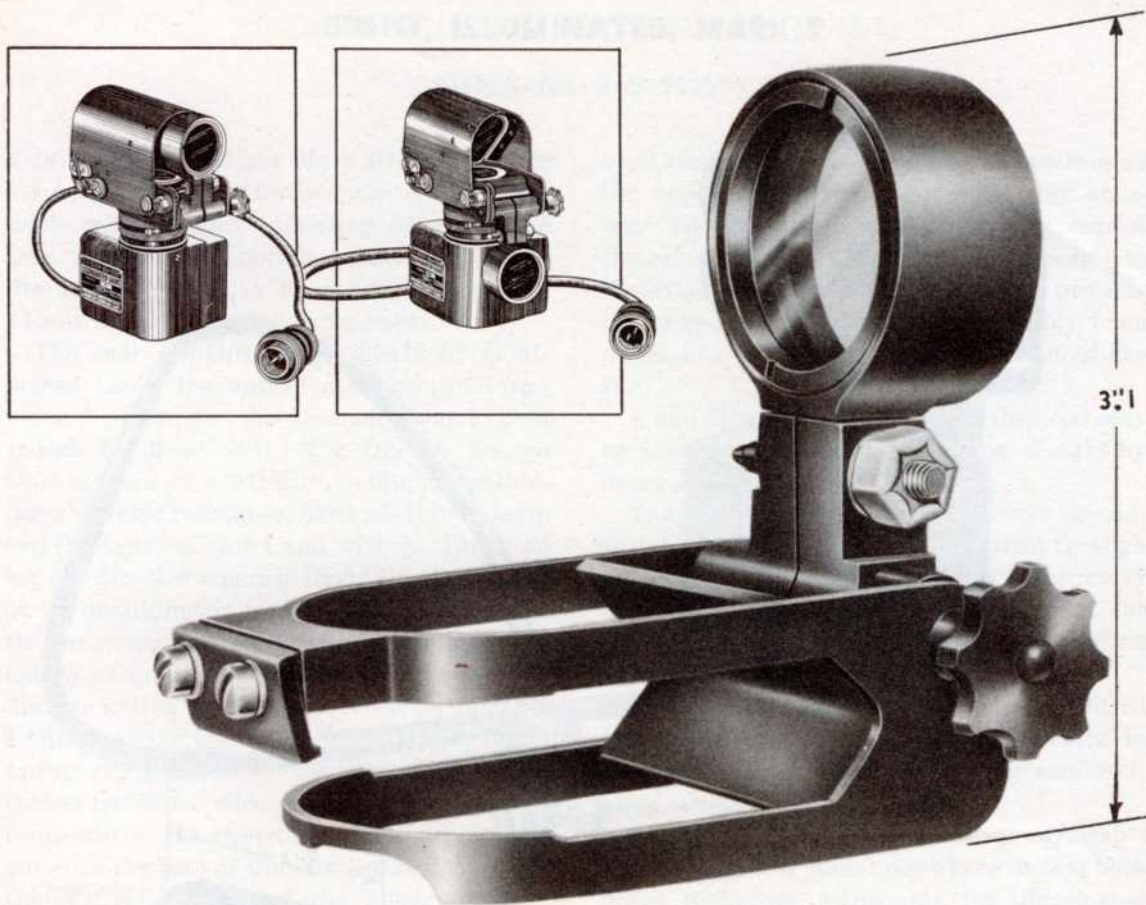
SIGHT, ILLUMINATED, MARK 8, MOD. 7

STOCK No. 2-S-3114-60

THE Illuminated Sight Mark 8, Mod. 7 is manufactured by the Kollmorgan Optical Company and uses optics of the same size as

those used in the Mark 8, Mod. 2 sight. The sight uses a concave metal reticle (Stock No. 2-R-600).

SIGHT, AUXILIARY ATTACHMENT, ILLUMINATED SIGHTS, MARK 9 AND MODS.



SIGHT, AUXILIARY ATTACHMENT, ILLUMINATED SIGHTS, MARK 9 AND MODS.

STOCK No. 2-S-3380

THE Auxiliary Attachment for the Illuminated Sight Mark 9 and Mods. is an optical sight that may be used as a standby unit in case of power failure. The attachment is secured to the hood base on the side nearest the operator in such a manner that it does not interfere with the regular mounting bracket.

It consists of a mount, a small retaining bar with 2 screws, a laminated polaroid glass plate held in a metal collar, and a thumb screw to raise or lower the optical element. When the glass is in the line of sight, a series of colored rings are visible as concentric circles and serve as the reticle pattern. Regardless of eye position, the inner ring has a radius of ap-

proximately 35 mils; the second and third, of 60 and 84 mils respectively. The rings, therefore, may be used as deflection rings for estimating the proper lead while firing. They are always in focus no matter what the target distance may be.

To place the auxiliary in the line of sight, or to remove it, the thumb screw is pulled out and turned. This is accomplished without loss of boresight.

DIMENSIONS: approx. 3.4 x 2.6 x 3.1 inches.

WEIGHT: approx. 0.5 pound.

PUBLICATION: O.T.I. FV-10-43.

BuORD DWG: Gen. Arr. 330405.

SIGHT, ILLUMINATED, MARK 9 AND MODS.



SIGHT, ILLUMINATED, MARK 9

STOCK No. 2-S-3115

THE Illuminated Sight Mark 9, designed for use in turrets or on flexible gun mounts, is a small compact unit consisting of a bakelite case, a cylindrical middle section containing the optical system, a hood assembly, and a 24-volt DC dimmer switch assembly.

The case (BuOrd Dwg. 300472-5) is attached below the optical assembly and provides a recess for the Dimmer Switch Unit (Stock No. 2-S-7540). The Dimmer Switch Unit consists of a bakelite moulding containing a variable resistance, fixed resistance, lamp socket, electrical outlet and wiring. The lamp is provided as a separate item. On the outside of the moulding is a small knob with which the resistance can be varied, changing the intensity of the light for day or night use. The dimmer switch may be removed after pushing a button on the bottom of the case, thus facilitating replacement of the lamp. A 2-foot, rubber-insulated wire with a 2-pole plug is connected to the electrical circuit through an outlet in the base of the dimmer switch.

CAUTION: Because of the construction of the socket, it is possible to insert the old type Mazda No. 1664 IF lamp in the wrong position. This may result in burning out the fixed resistance in the switch. Care must be taken to insert this lamp so that the brighter of the 2 filaments lights up when the dimmer switch is in the "DAY" position. Do not turn the switch to the "NIGHT" position unless it is certain that the lamp is inserted properly.

Above the main case is the cylindrical middle section that acts both as a housing for the optical system and as a mounting for the Hood Assembly (Stock No. 2-H-1475). This assembly comprises a metal hood, hood base, reflector plate, boresighting adjustment, and sun filter. The metal hood is attached to the

hood base by 2 bolts and the base mounts on the upper end of the optical assembly housing. The hood serves 2 purposes: It carries the reflector plate, set at a 45-degree angle to the axis of the optical system, and it protects the reflector plate and optical assembly from mechanical damage and from the rays of the sun.

A sun filter located in front of the hood may be positioned in or out of the line of sight by operating a thumb wheel.

The reflector plate and hood cover are adjustable. This allows them to be tilted through a small angle for boresighting in elevation or depression. Rotation of the hood about the optical assembly permits azimuth boresighting adjustments.

Latest sights use a flat metal reticle (BuOrd Dwg. 300476-6, Rev. D) which is located in the optical assembly. Earlier types employed glass reticles.

Stock numbers for sights using adjustable reflectors will be found elsewhere in this book under Reflectors, Adjustable, for Illuminated Sights Mark 9.

DIMENSIONS:

Case, approx. 2.5 x 3.0 x 2.0 inches.

Tubular section, approx. 2.0 x 1.8 x 1.8 inches.

Dimmer switch, approx. 3.0 x 3.2 x 2.6 inches.

Hood, approx. 2.0 x 2.7 x 3.4 inches.

Overall, approx. 6.4 x 3.5 x 3.5 inches.

WEIGHT: approx. 1.5 pounds.

VOLTAGE: 24-volt DC.

LAMP: Mazda No. 846, S-8 IF, 21/6 candlepower, 24-volt Stock No. 17-L-6733-10].

PUBLICATION: O.P. 863, O.H.I. FI-43, and O.T.I. FV-2-43.

BuORD DWG: SK. 90736, Gen. Arr. 300481.

SIGHT, ILLUMINATED, MARK 9 AND MODS. (CONT'D)

SIGHT, ILLUMINATED, MARK 9, MOD. 1

STOCK No. 2-S-3115-25

THE Illuminated Sight Mark 9, Mod. 1 is identical to the Mark 9 except that its Dimmer Switch Assembly (Stock No. 2-S-7535) operates on 12 volts and uses a 12-volt Lamp, Mazda No. 1176, S-8 IF, $2\frac{1}{6}$ candlepower

(Stock No. 17-L-6732-50). The same caution is required in inserting this lamp as when using the old style lamp referred to in the Illuminated Sight Mark 9 description.

SIGHT, ILLUMINATED, MARK 9, MOD. 2 (24-VOLT)

STOCK No. 2-S-3115-30

THE Illuminated Sight Mark 9, Mod. 2, except for a difference in the optical system, is the same as the Mark 9. The optical system of the Mod. 2 gives almost complete color correction and greatly reduces parallax errors, especially on the outer (70-mil) aiming ring.

The standard reticle furnished with the Mod. 2 provides the gunner with a reticle pattern consisting of a center "pipper" and 35- and 70-mil radius aiming rings. The reticle is not interchangeable with the stand-

ard reticle employed in the Mark 9 and Mark 9, Mod. 1. When the Mod. 2 is used with the Adjustable Reflector for Illuminated Sight Mark 9 (Stock No. 2-R-433) a reticle (Dwg No. 393646) having 50- and 100-mil radius rings should be employed.

Illuminated Sights Mark 9, Mod. 2 and Mark 9 are interchangeable as a whole; major sub-assemblies (hood, lens barrel, dimmer switch and case group assemblies) are likewise interchangeable.

SIGHT, ILLUMINATED MARK 9, MOD. 3 (12-VOLT)

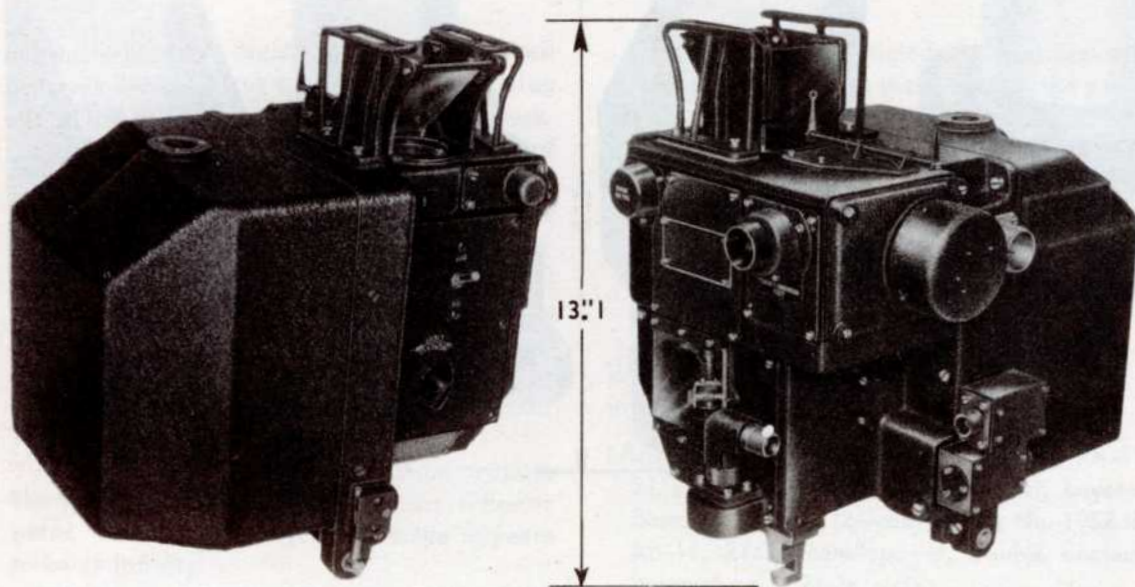
STOCK No. 2-S-3115-35

THE Illuminated Sight Mark 9, Mod. 3 uses the same optical arrangement as the Mark 9, Mod. 2. Its other physical characteristics,

however, except for the optical system change, are identical to the Illuminated Sight Mark 9, Mod. 1.

OPERATING VOLTAGE: 12 volts DC.

SIGHT, GUN, AUTOMATIC COMPENSATING, SPERRY, TYPE K-4



SIGHT, GUN, AUTOMATIC COMPENSATING, SPERRY, TYPE K-4

STOCK No. 2-S-3370

THE Automatic Compensating Gun Sight Type K-4 is an instrument that will compute the amount of deflection necessary for a gunner to hit a moving target. The sight is rigidly mounted in the Lower Turrets Model Sperry 250SH-1, 1A, and 2 used on PB4Y type aircraft.

The sight consists of an optical system combining into a single unit an automatic computing mechanism, and a range finder. The optical system is used to locate the target in space. The computing mechanism solves for prediction and ballistic deflections of the projectile and automatically transmits these solutions to the optical system. This causes the line of sight to be offset from the gun bore in proportion to the calculated deflections.

The range finder determines the straight line distance between the gunner and the target. This distance is used in the computing

mechanism as one of the functions required for the prediction and ballistic solutions.

A ring and bead sight, which is folded when not in use, is provided in case of power supply failure.

The Automatic Compensating Gun Sight Type K-4 is procured from the Army under Air Service Command Stock No. 59007 19910.

DIMENSIONS: approx. 13.1 x 13.0 x 10.4 inches.

WEIGHT: approx. 25.0 pounds.

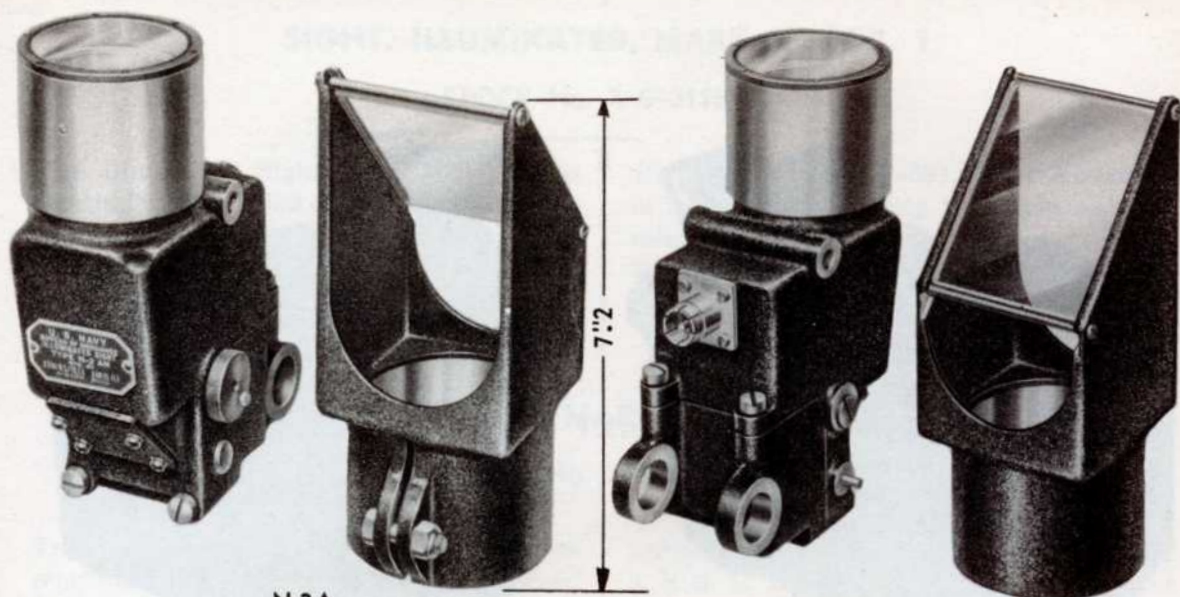
VOLTAGE: 24 volts DC.

LAMP: Mazda No. 1327 12-16 volts, 32CP, RP-11, Single Contact Prefocused Base.

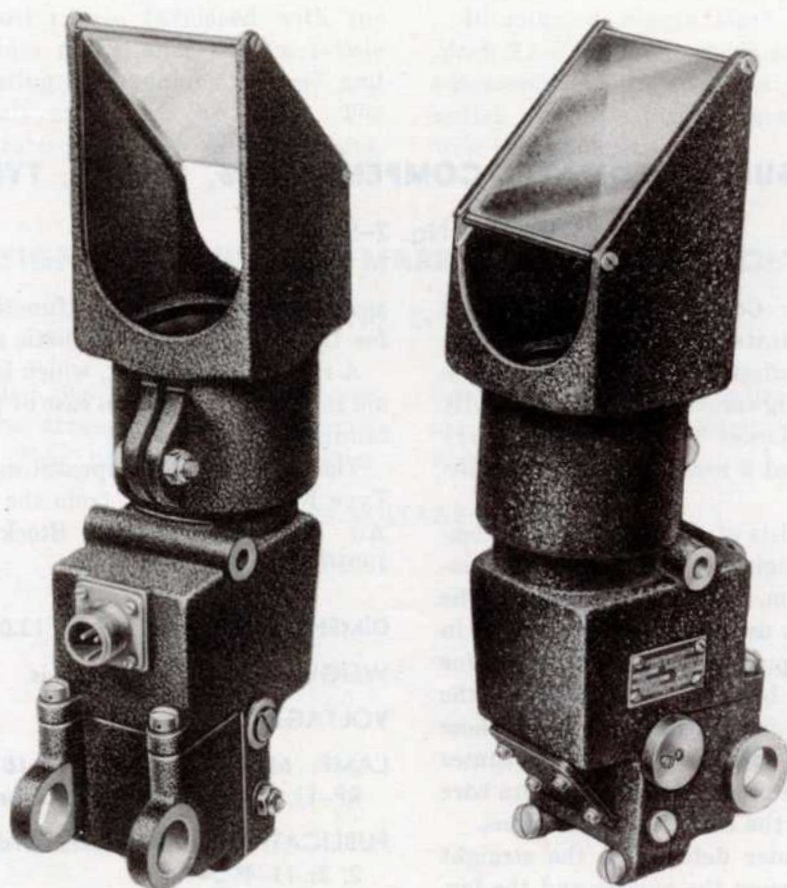
PUBLICATIONS: AAF Tech. Order 11-35A-1, 2, 3; 11-45C-1.

MFR'S DWG: Speery Gyroscope Co. 646636-A.

SIGHT, ILLUMINATED, TYPE N-3A AND N-3B



N-3A



N-3 B

SIGHT, ILLUMINATED, TYPE N-3A AND N-3B

SIGHT, ILLUMINATED, TYPE N-3A

STOCK No. 2-S-3117

THE Illuminated Sight Type N-3A is used to sight fixed guns or gun cameras by aiming the entire airplane. It is mounted in the cockpit above the instrument panel in the line of the pilot's normal forward vision.

The sight consists of 2 main housings, the sight body, and the sight head. The body contains a lamp, and lamp socket, a flat metal reticle (Stock No. 2-R-606), a lens, and the electrical connector. The head is designated by the Army as Image Reflector Support AAF DWG. 41D4892. It incorporates the reflector plate (Stock No. 2-P-3615).

When operating the sight, the lamp projects the pattern of the reticle onto the reflector plate. To the pilot's eye, the image appears to be at infinity.

The lamp contains 2 filaments; if one filament fails to light, reversing the toggle switch in the cockpit will bring the other filament into use.

The sight uses a single-wire electrical circuit with an electrical connector of the push-on type. The receptacle portion is AAF DWG. 39A2389 and the contact pin is AAF DWG. 38A1782.

DIMENSIONS:

Sight body, approx. 7.5 x 3.5 x 5.5 inches.

Head, approx. 7.2 x 3.5 x 5.5 inches.

Overall, approx. 12.3 x 3.5 x 5.5 inches.

WEIGHT: approx. 3.5 pounds.

VOLTAGE: 12- or 24-volt DC.

LAMPS: (12-volt) Mazda No. 1120 IF, RP-11, 21/21 candlepower, double contact, bayonet base, 12-16 volts; (24-volt) Mazda No. 1052 IF, RP-11, 21/21 candlepower, double contact, bayonet base, 24-28 volts.

PUBLICATIONS: TM 1-495, AAF Tech. Order 11-35-5, and O.C.L. V-28-42.

AAF DWG: 41G6436.

SIGHT, ILLUMINATED, TYPE N-3B

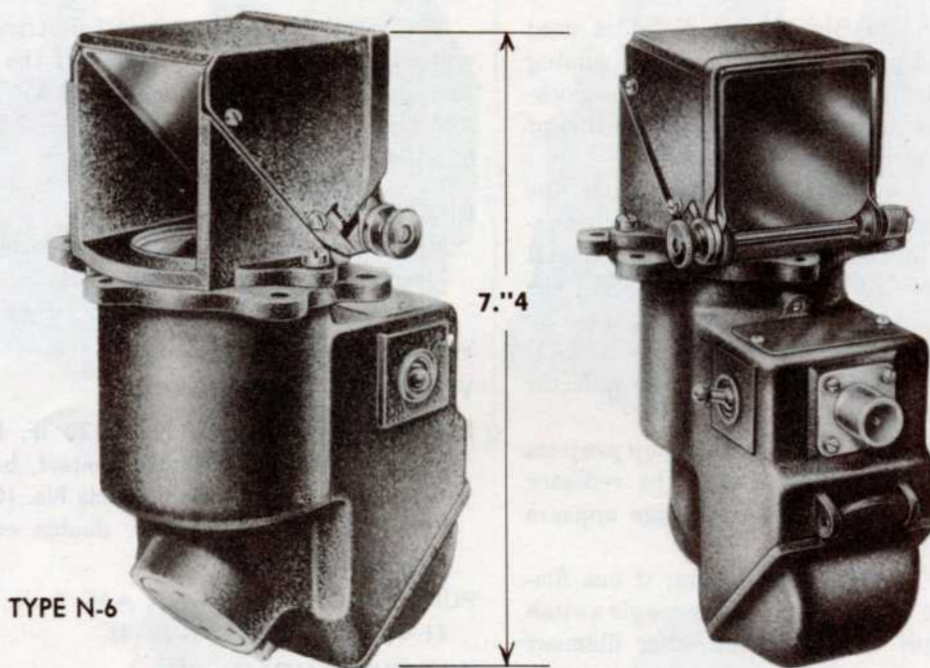
STOCK No. 2-S-3372

THE Illuminated Sight Type N-3B is the same as the Type N-3A except that it has a 2-wire electrical system and uses a screw-on type

Electrical Connector AN-3102-12S-3P in place of the push-on type.

AAF DWG: 42G20092.

SIGHT, ILLUMINATED FLEXIBLE GUN, TYPE N-6



SIGHT, ILLUMINATED FLEXIBLE GUN, TYPE N-6

STOCK No. 2-S-3373

THE Illuminated Flexible Gun Sight Type N-6 is usually mounted in and directs the fire of a machine gun turret. The sight which utilizes a single wire electrical circuit, consists of a main housing and a removable hood or reflector support. The housing contains a lamp and lamp socket, a reticle, a filter, a mirror, a lens and a toggle switch. The image reflector support attached to the top of the main housing includes a reflector plate and a sun screen. This screen may be placed in either one of 2 positions by pulling out and turning a knurled thumb wheel. The purpose of the lamp is to project an image of the reticle onto the reflector plate. The lamp used in this sight contains 2 filaments; if one fila-

ment does not light, the gunner reverses the toggle switch, bringing the other filament into use.

DIMENSIONS: approx. 7.4 x 4.9 x 3.9 inches.

WEIGHT: approx. 2.1 pounds.

VOLTAGE: 12- to 24-volt DC.

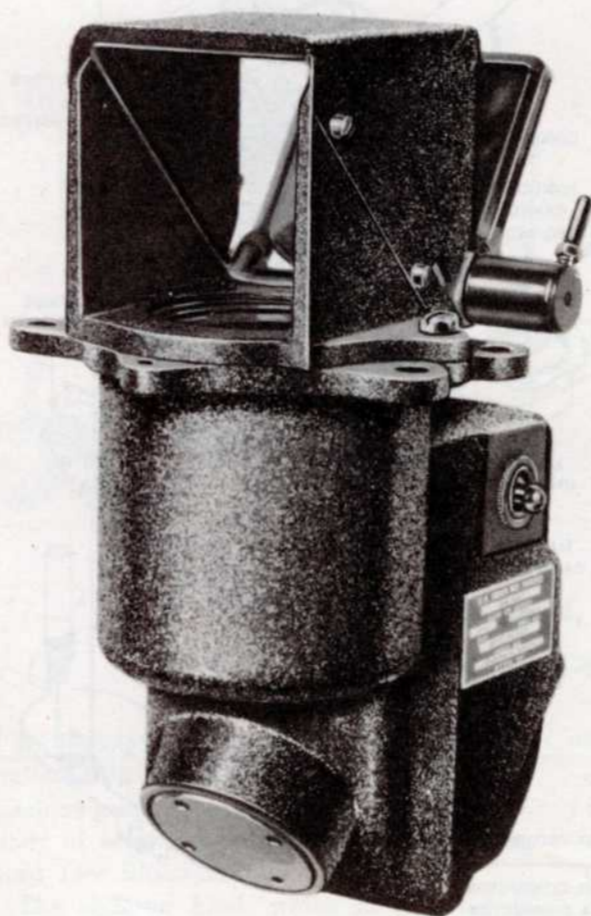
ELECTRICAL CONNECTOR: AN3102-10S-2P.

LAMPS: (12-volt) Trade No. 1120 IF, 12-16 volt 21/21 candlepower RP-11 double contact bayonet base; (24-volt) Trade No. 1052 IF, 28 volts 21/21 candlepower RP-11 double contact bayonet base.

PUBLICATION: AAF Tech. Order 11-35-12.

AAF DWG: 41D9625.

SIGHT, ILLUMINATED, FLEXIBLE GUN, TYPE N-6A



TYPE N-6A

SIGHT, ILLUMINATED FLEXIBLE GUN, TYPE N-6A

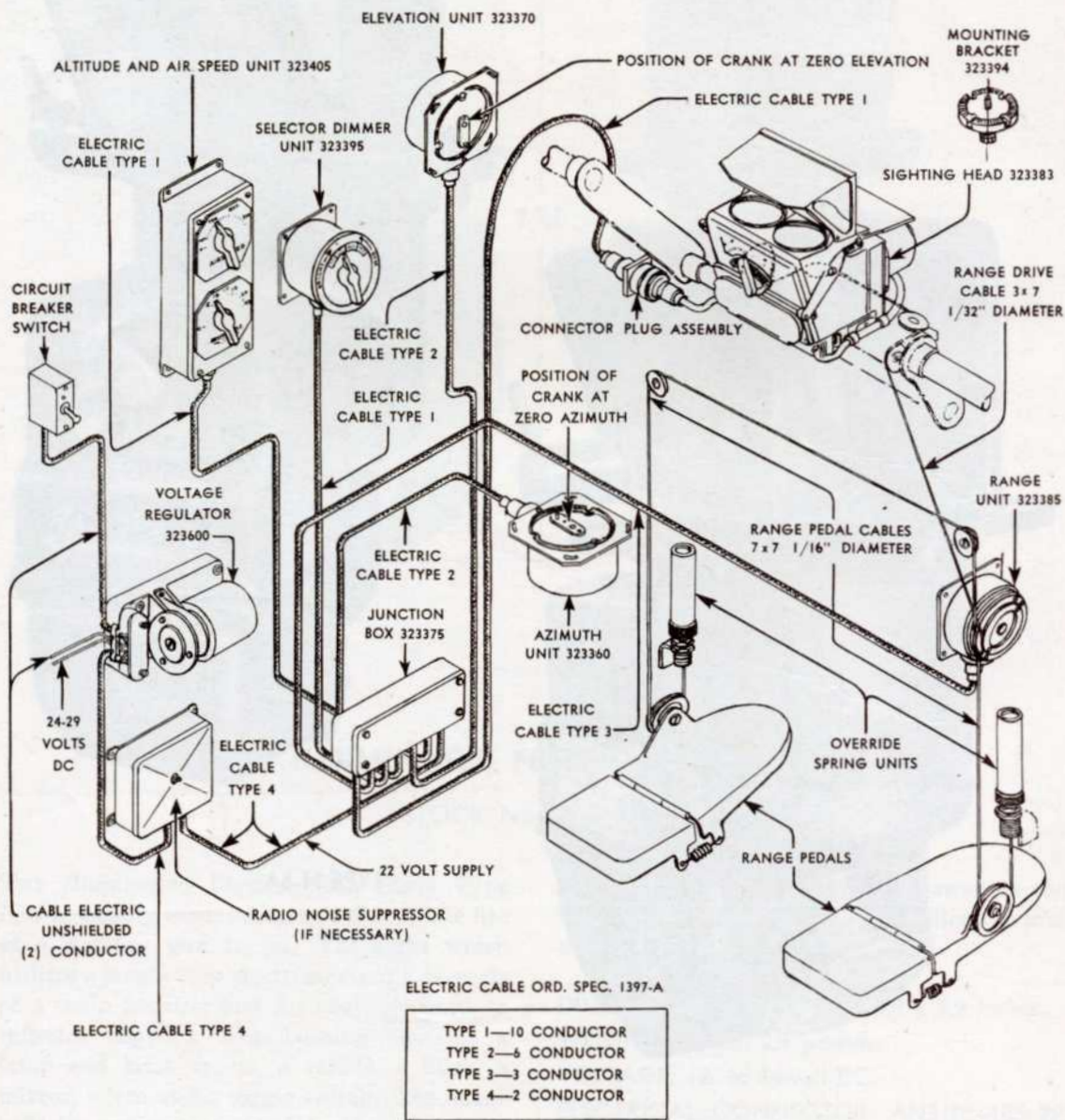
STOCK No. 2-S-3373-10

THE Illuminated Flexible Gun Sight Type N-6A is identical to the Illuminated Sight

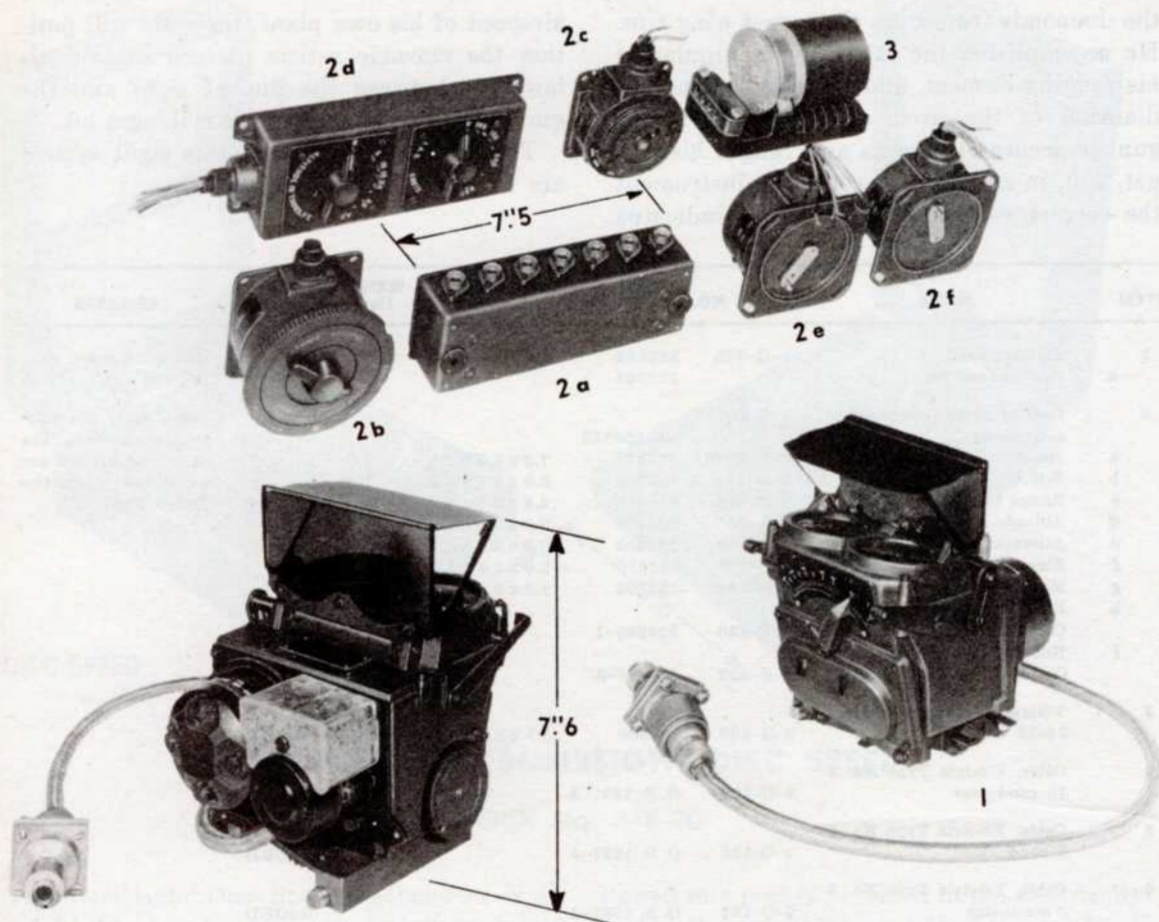
Type N-6 except that the sun screen mechanism is different, and a different reticle is used.

AAF DWG: 42FI4292.

SIGHT, GUN, MARK 18



SIGHT, GUN, MARK 18



SIGHT, GUN, MARK 18

STOCK No. 2-S-3089-125

THE Gunsight Mark 18 is designed for installation in aircraft turrets using caliber .50 machine guns. The mechanism consists essentially of several control units and a sighting head (see illustration).

The sighting head, which is mounted to move with the guns in azimuth and elevation, combines 2 independent sighting systems—one fixed and the other lead computing.

The target is viewed by the gunner through the Sighting Head reflector plate, in which are reflected 2 reticle patterns projected to infinity. When the target is framed within either reticle pattern, the pattern appears to the gunner as superimposed upon the target. The fixed reticle pattern, seen on the left side,

consists of a circle and a center cross which establishes a line of sight which is boresighted to the guns. The movable reticle pattern, seen on the right side, is the lead computer image. The movable pattern consists of 6 radially disposed diamond-shaped dots with a center dot. The diameter of this circle of dots is variable.

The gunner sets into the sight the wing span of the enemy plane by means of a lever on the sighting head. He then sights the enemy plane through the movable reticle pattern and by movement of the turret in azimuth and elevation, tracks the target. His objectives are to keep the reticle dot centered on the target and to keep the inside points of

SIGHT, GUN, MARK 18 (CONT'D)

the diamonds framed on the target wing tips. He accomplishes the latter by manipulating his ranging element, and thereby varying the diameter of the circle of diamonds. If the gunner accurately tracks and ranges his target, and, in addition, sets into the instrument the correct values of altitude and indicated

airspeed of his own plane, the sight will position the movable reticle pattern so that allowances between the line of sight and the gun bore axis are correct for making a hit.

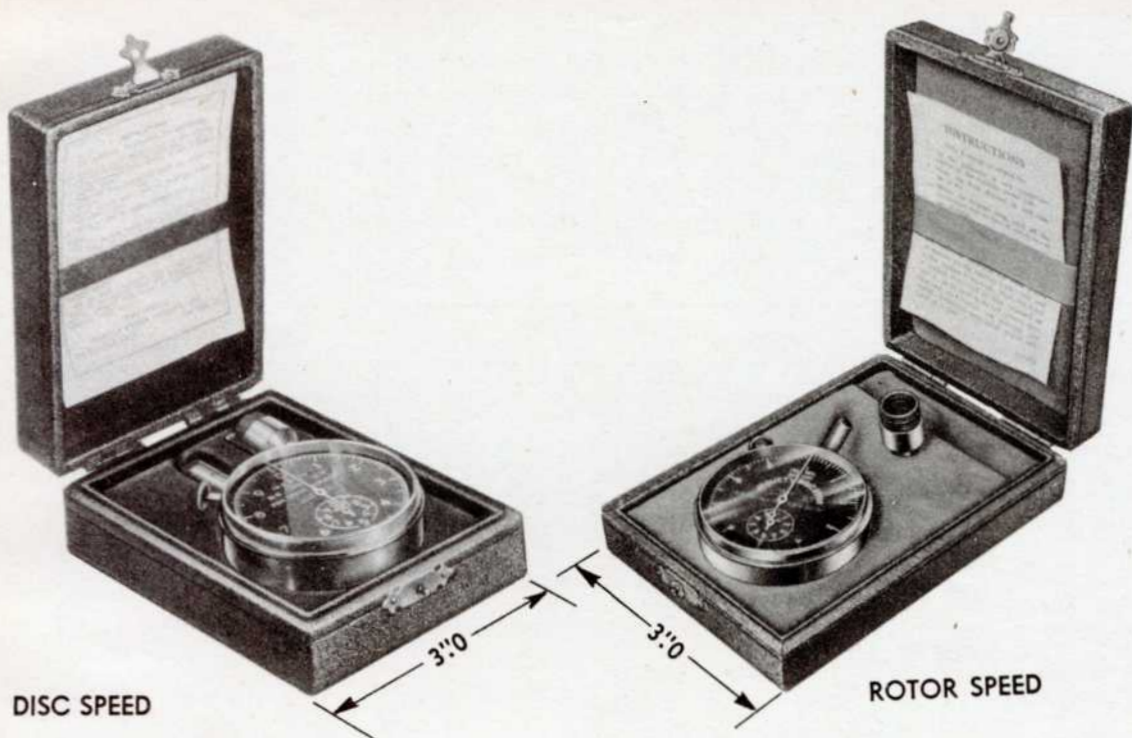
The units that make up this sight system are listed in the following table:

ITEM	NAME	STOCK NO.	BuORD DWG.	DIMENSIONS (inches)	WEIGHT (lbs.)	PROCURE- MENT	REMARKS
1	Sighting head	2-H-975	323383	5.7 x 7.6 x 6.6	7.5	BuORD	Protective cover ship-
a	Protective cover		323384				ped with sighting head.
2	Control units (composed of a-i below)	2-C-3625	SK 120312				These units are ship-
a	Junction box	2-B-2680	323375	7.5 x 2.9 x 2.1	1.0		ped in one box. The
b	Selector Dimmer Unit	2-D-125	323395	3.5 x 2.7 x 4.2	2.5		cable end fittings are
c	Range Unit	2-R-275	323385	4.8 x 3.3 x 1.9	2.5	BuORD	enclosed with the
d	Altitude and Airspeed Unit	2-A-50	323405	9.6 x 3.4 x 2.2	4.0		Range Unit.
e	Azimuth Unit	2-A-700	323360	5.0 x 2.4 x 3.8	2.9		
f	Elevation Unit	2-E-410	323370	5.0 x 1.9 x 3.8	2.5		
g	Mounting Bracket	2-B-2860	323394	1.8 x 2.4 x 2.4	0.2		
h	End Fittings Range Drive Cable	2-E-420	323389-1				
i	End Fittings Range Pedal Cable	2-E-422	323389-2				
3	Voltage Regulator Mark 1 24-29 volts	2-R-460	323600	5.7 x 3.0 x 3.6	2.5	BuORD	
4	Cable, Electric Type No. 1 10 conductor	2-C-135	O. S. 1397-A			BuORD	
5	Cable, Electric Type No. 2 6 conductor	2-C-136	O. S. 1397-A			BuORD	
6	Cable, Electric Type No. 3 3 conductor	2-C-137	O. S. 1397-A			BuORD	
7	Cable, Electric Type No. 4 2 conductor	2-C-138	O. S. 1397-A			BuORD	
8	Cable, Stainless Steel (Range Drive Cable)	2-C-200		3x7 cable 1/32-inch diameter		BuORD	Furnished in bulk.
9	Cable, Stainless Steel (Range Pedal Cable)	2-C-201		7 x 7 cable 1/16-inch diameter		BuORD	Furnished in bulk.
10	Lamps, Electric, 13.5 CP, 22-volt, single support Fila- ment, Mazda No. 480	17-L-6731				BuORD	This lamp may be of either G.E. or Westing- house Manufacture.
11	Radio Interference Suppressor (If necessary)					BuAER	
12	Circuit Breaker Switch (Sight Switch)					BuAER	
13	Override Spring Units					BuAER	
14	Range Pedals					BuAER	
15	Cable, Electric Unshielded, 2 conductor					BuAER	

MAXIMUM POWER REQUIREMENT: 72.5 watts.

PUBLICATIONS: O.P. 1043, O.C.L. FV-12-43.

TACHOMETER, BOMBSIGHT DISC AND ROTOR SPEED



TACHOMETER, BOMBSIGHT DISC SPEED

STOCK No. 2-T-20

THE Bombsight Disc Speed Tachometer is a hand-held chronometric instrument used by bombardiers and in bombsight repair shops to check bombsight disc speed. It is supplied in a leather case with a soft rubber convex drive tip, an instruction sheet and a calibration sheet. The markings on the dial face are phosphorescent.

One tachometer is normally supplied with each bombsight. When not in use, it may be

stowed in a pocket provided in the electrically heated Bombsight Blanket Mark 1, and Mark 1, Mod. 1.

DIMENSIONS (case): approx. 3.0 x 4.2 x 1.3 inches.

WEIGHT: approx. 1.0 pound.

DIAL SPEED RANGE: 0 to 1000 rpm.

MFR'S DWG: Jaeger Watch Co. 4050.

TACHOMETER, BOMBSIGHT ROTOR SPEED

STOCK No. 2-T-25

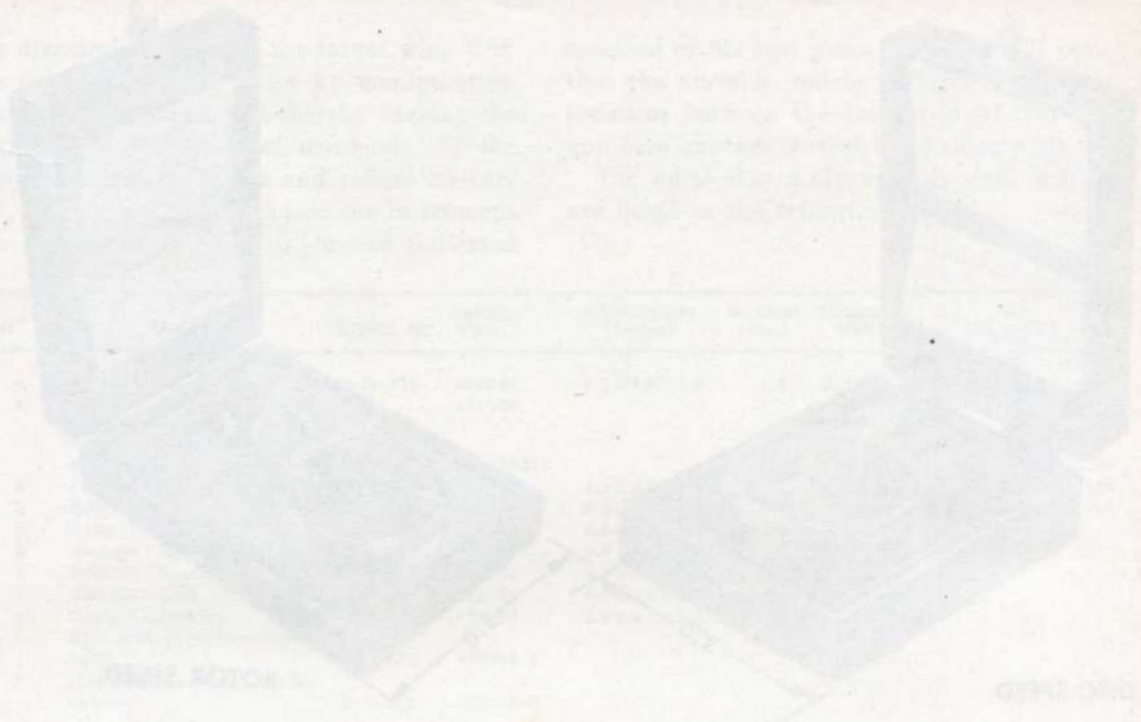
THE Bombsight Rotor Speed Tachometer is a hand-held chronometric instrument used in bombsight overhaul shops to check the speed of gyro rotors in bombsights. It is supplied

in a leather case with a soft rubber drive tip and an instruction sheet. It is similar to the Bombsight Disc Speed Tachometer but has a greater dial speed range.

DIMENSIONS (case): approx. 3.0 x 4.2 x 1.3 inches.

WEIGHT: approx. 1.0 pound.

DIAL SPEED RANGE: 0 to 10,000 rpm.



TACHOMETER, BOMBIGHT DISC SPEED

STOCK NO. 5-1-32

The Bombight disc speed tachometer is a hand-held, non-instrumental device used to measure the speed of rotating objects. It is supplied in two models: Model 5-1-32 and Model 5-1-33. The model 5-1-32 is the standard model and the model 5-1-33 is the model with a built-in battery.

DIMENSIONS: length 3.5 x 4.5 x 1.5
weight 1.0 pound

DIAL SPEED RANGE: 0 to 1000 rpm

MFR. O.W. Sargent-Walsh Co. 1961

The Bombight disc speed tachometer is a hand-held, non-instrumental device used to measure the speed of rotating objects. It is supplied in two models: Model 5-1-32 and Model 5-1-33. The model 5-1-32 is the standard model and the model 5-1-33 is the model with a built-in battery.

DIMENSIONS: length 3.5 x 4.5 x 1.5
weight 1.0 pound

DIAL SPEED RANGE: 0 to 1000 rpm

MFR. O.W. Sargent-Walsh Co. 1961

TACHOMETER, BOMBIGHT ROTOR SPEED

STOCK NO. 5-1-33

The Bombight rotor speed tachometer is a hand-held, non-instrumental device used to measure the speed of rotating objects. It is supplied in two models: Model 5-1-32 and Model 5-1-33. The model 5-1-32 is the standard model and the model 5-1-33 is the model with a built-in battery.

DIMENSIONS: length 3.5 x 4.5 x 1.5
weight 1.0 pound

DIAL SPEED RANGE: 0 to 1000 rpm

MFR. O.W. Sargent-Walsh Co. 1961

The Bombight rotor speed tachometer is a hand-held, non-instrumental device used to measure the speed of rotating objects. It is supplied in two models: Model 5-1-32 and Model 5-1-33. The model 5-1-32 is the standard model and the model 5-1-33 is the model with a built-in battery.

DIMENSIONS: length 3.5 x 4.5 x 1.5
weight 1.0 pound

DIAL SPEED RANGE: 0 to 1000 rpm

MFR. O.W. Sargent-Walsh Co. 1961

PYROTECHNIC EQUIPMENT

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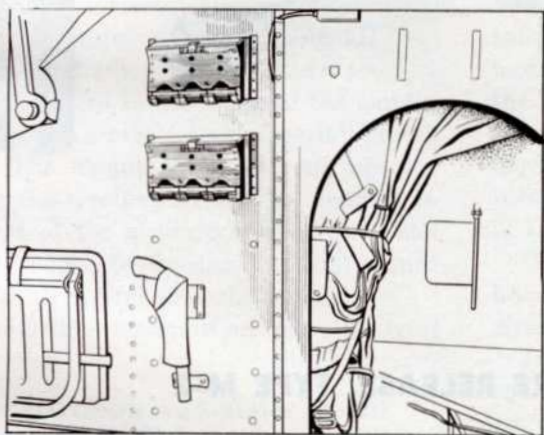
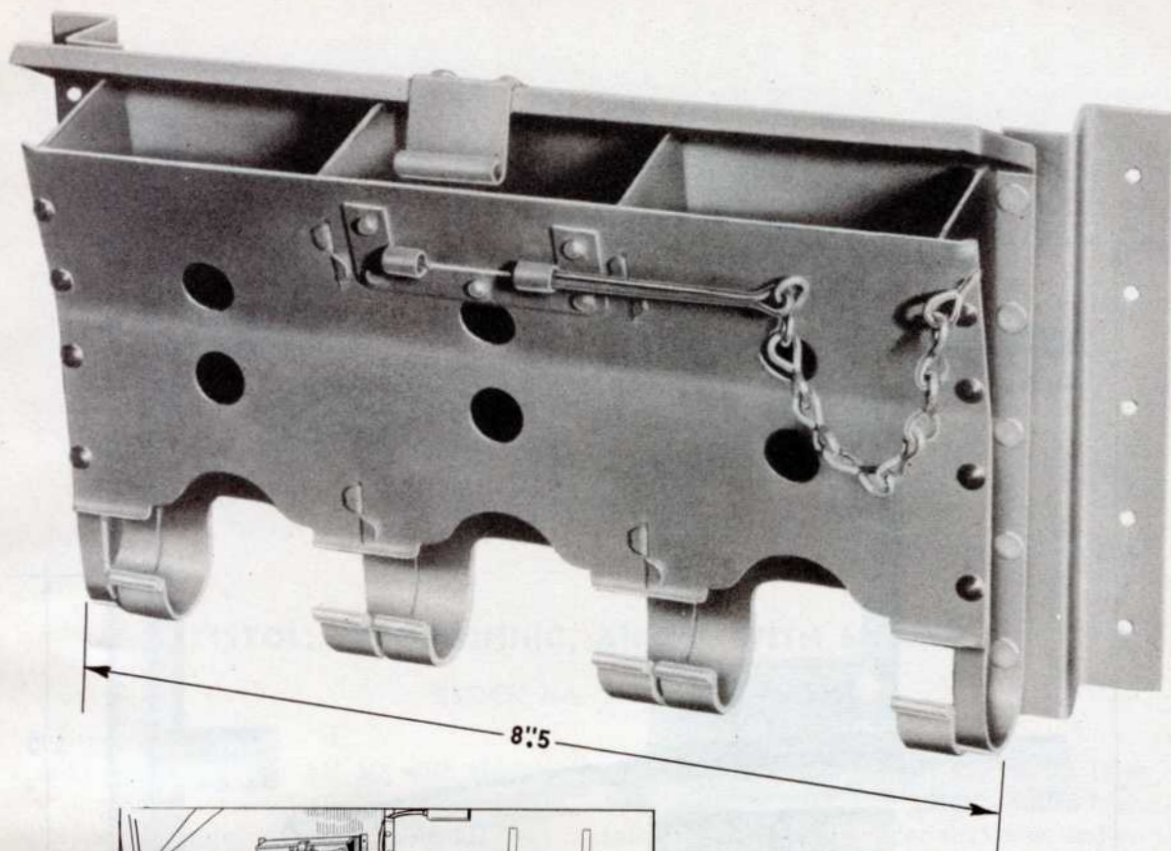
CONTAINER, SIGNAL FLARE

HANDLE, FLARE RELEASE

PISTOL, PYROTECHNIC

NOTES

CONTAINER, VERY'S SIGNAL CARTRIDGE, MARK 2, MOD. 1



CONTAINER, VERY'S SIGNAL CARTRIDGE, MARK 2, MOD. 1

STOCK No. 2-C-3578

THE Very's Signal Container Mark 2, Mod. 1 holds Very's signal cartridges. It is a metal container having 3 compartments, each of which holds 5 cartridges of a specific color. A hinged cover plate secured by a chain-held cotter pin is on the top of the container. At the bottom of each compartment are J-shaped

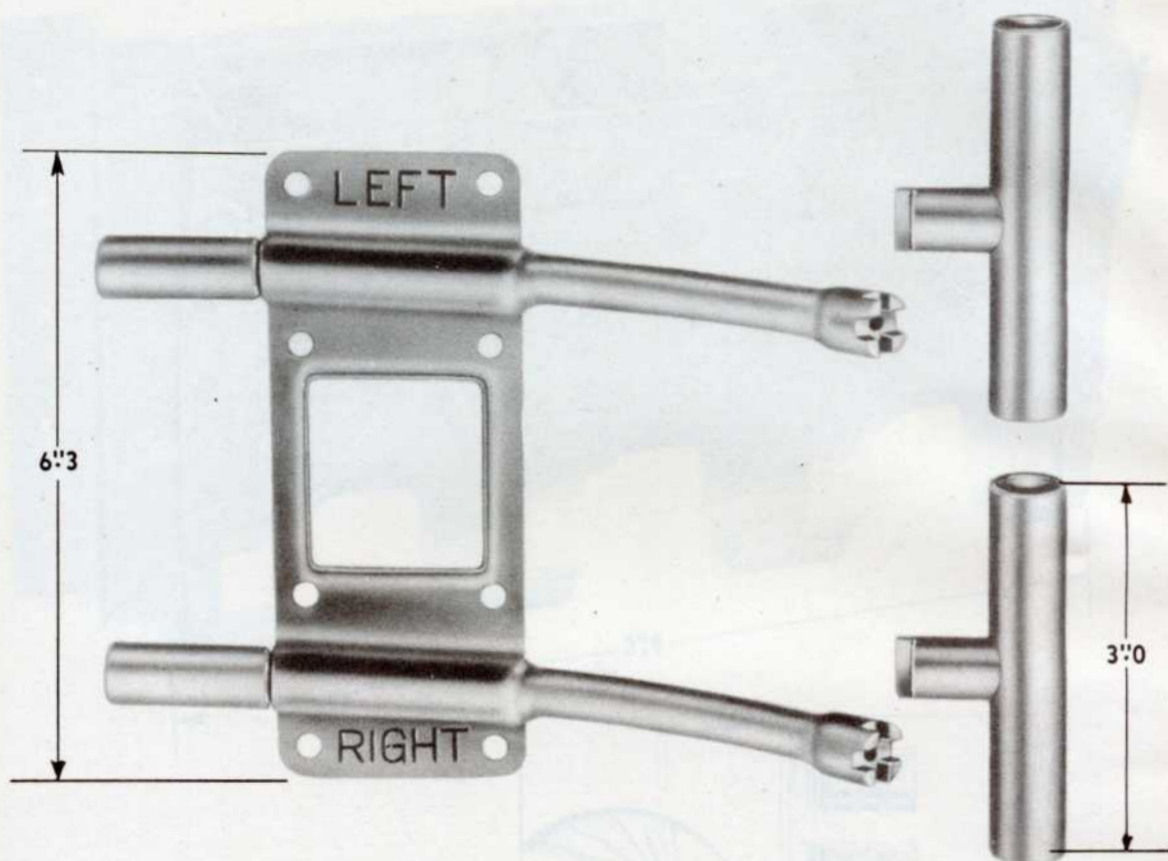
retainers which permit easy extraction of the cartridges.

DIMENSIONS: approx. 8.5 x 5.0 x 1.3 inches.

WEIGHT: approx. 0.5 pound.

BuORD DWG: Gen. Arr. 202655.

HANDLE, FLARE RELEASE, TYPE M-2



HANDLE, FLARE RELEASE, TYPE M-2

STOCK No. 2-H-595

THE Flare Release Handle Type M-2 is a remote control handle for releasing illuminating flares. Mounted in a convenient position in the cockpit, it consists of 2 metal tubes, each 5 inches long, secured to an aluminum mounting bracket. Two T-shaped handles are attached to cables that pass through the tubes to the flare rack. The handles are seated at the end of each tube by coiled springs in the tubes. In the tube ends, slots at right angles to each other are provided so that after a re-

lease, the T-grip may be rotated 90 degrees to indicate to the operator that the flare has been released. This permits the pilot to select quickly an unreleased flare in case of emergency.

DIMENSIONS: approx. 6.3 x 7.8 x 3.0 inches.

WEIGHT: approx. 0.9 pound.

PUBLICATION: O.P. 562.

BuORD DWG: Gen. Arr. 120457.

PISTOL, PYROTECHNIC, AN-M8, WITH MOUNT



PISTOL, PYROTECHNIC, AN-M8, WITH MOUNT

STOCK No. 2-P-3499

THE Pyrotechnic Pistol AN-M8 with Mount, is a single-shot, breech-loading, double-action pistol, used to project pyrotechnic signals from an airplane in flight. The pistol has a seamless tube barrel hinged to the frame of the handle, and released by a breech lock to permit breech loading. The mount has 4 coil springs for absorbing the recoil shock, and is mounted in the cockpit of the aircraft so that the pistol is fired through the fuselage. A gun mount latch locks the pistol into the mount.

The following ammunition may be used with this pistol:

Two Star Cartridge AN-M28 to AN-M33
AN-M37 to AN-M42, Mark 3, Mod. 3
Mark 4, and M53 to M58.

Single Star Cartridge M34 to M36, AN-M43 to AN-M45, and M61.

Red Star Parachute Signal M11.

1½-inch Cartridge Slick Marker Mark 1.

British 1½-inch Two Star and Single Star Cartridge.

Obsolete Signals M10, M14, M15, M16.

In operation, the pistol is ordinarily locked in the mount. To open the breech for loading, the breech lock lever is pushed forward and up. After loading and closing the breech, the pistol is cocked and fired by a continuous pull on the trigger. When it is necessary to remove

the pistol from the mount, the mount latch lever on the barrel of the pistol is pulled back, the pistol is turned counter-clockwise, and removed. In replacing the pistol in the mount, the pistol is inserted in the mount sleeve and turned clockwise to lock it in position. The mount is provided with a cover to prevent the inrush of air when the pistol is not inserted in the mount.

Where installation of the mount has not been made, the pistol can be carried in the aircraft and hand-fired.

The Pyrotechnic Pistol AN-M8 is standard equipment in all combat aircraft, and replaced Pyrotechnic Pistol M-2.

DIMENSIONS:

Pistol, approx 8.2 x 8.3 x 1.8 inches.

Mount, approx. 3.3 x 3.8 x 3.8 inches.

WEIGHT:

Pistol, approx. 2.2 pounds.

Mount, approx. 1.2 pounds.

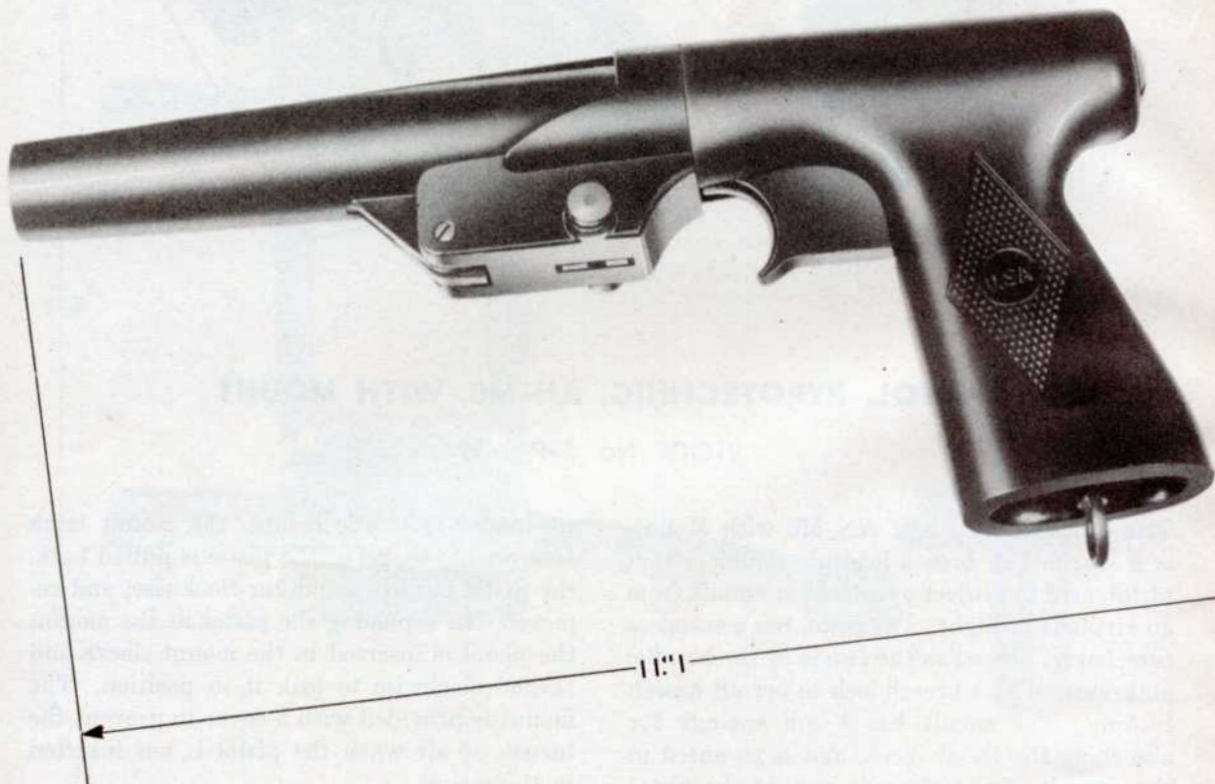
PUBLICATIONS: O.C.L. V-35-42, War Dept.
T.M. No. 9-290, and Army Ord SNL. B-33.

AAF DWG: H42B10666.

ARMY ORD DWG: 42-44.

BuORD DWG: Installation 247642.

PISTOL, VERY'S SIGNAL MARK 5



PISTOL, VERY'S SIGNAL MARK 5

STOCK No. 2-P-3510

THE Very's Signal Pistol Mark 5 is a single-shot, breech-loading pyrotechnic pistol, which fires the Very's Signal Cartridge Mark 2. It has a plastic handle and was designed to use a minimum of critical materials.

This pistol replaces the Very's Signal Pistol Mark 3 in all future issue, and is being furnished only for use by surface vessels, the Civil

Air Patrol, and to Naval Air Stations in connection with primary or intermediate night flying training.

DIMENSIONS: approx. 11.1 x 5.0 x 1.6 inches.

WEIGHT: approx. 1.5 pounds

BuORD DWG: Gen. Arr. 242692.

TRAP and SKEET EQUIPMENT

TRAP AND SKEET EQUIPMENT

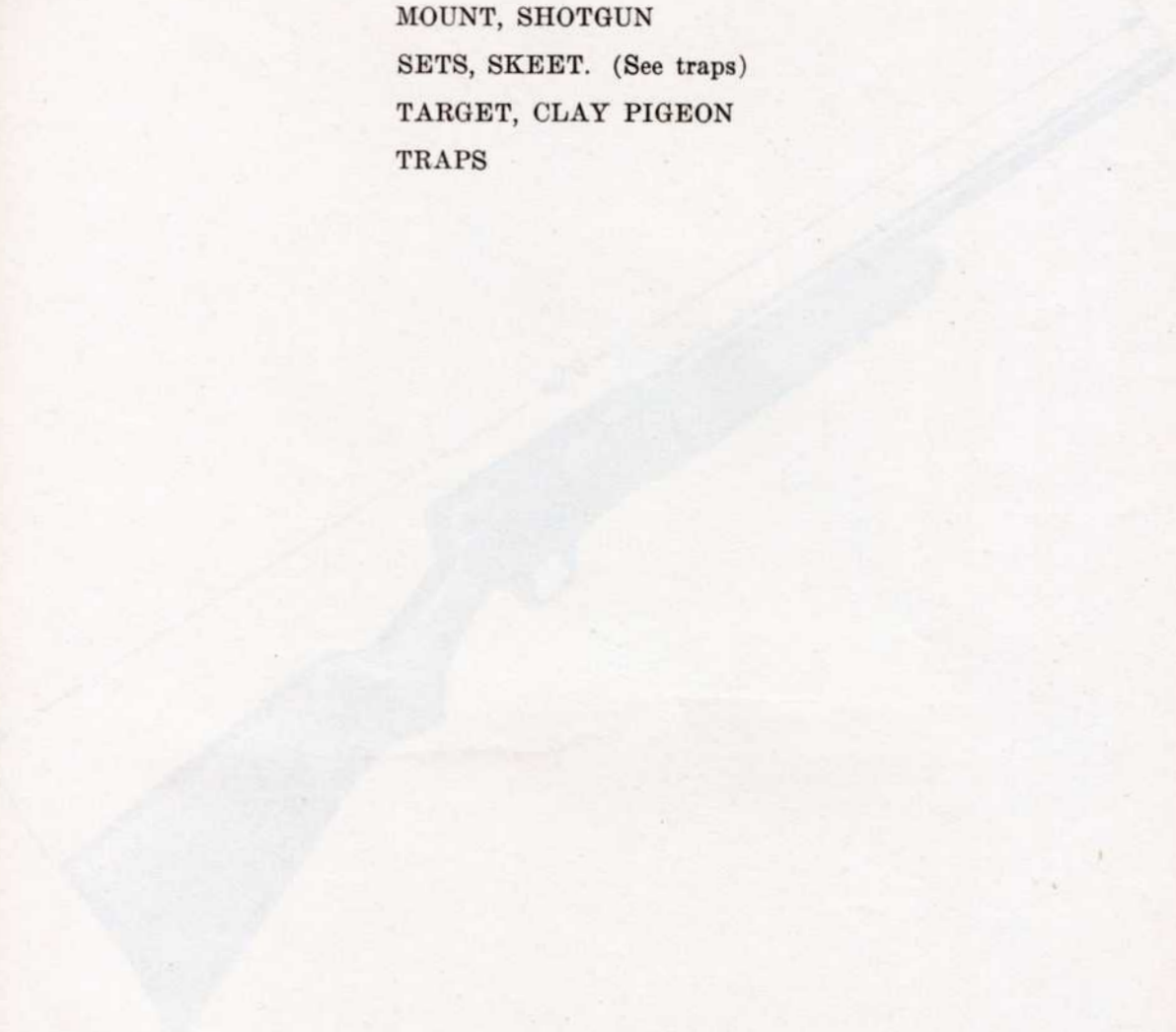
GUNS, SHOT

MOUNT, SHOTGUN

SETS, SKEET. (See traps)

TARGET, CLAY PIGEON

TRAPS



GUN, SHOT 12-GAUGE 28-INCH BARREL AUTO-LOADING, REMINGTON-
UNION MODEL 11, 5 SHOTS, WITH NEW IMPROVED CYLINDER

STOCK NO. 7 G-4115 (Without Calls or Decoration)
1-5-1276 (Without Calls or Decoration)

This new loading shotgun is one of the
most powerful and reliable with the 12-
gauge. Remington-Union Model 11 is
a short cylinder in the center of the
shot barrel. It is the only one of its
kind in the world. It is the only one
which allows the shooter to shoot

in the center of the barrel. It is the
only one of its kind. It is the only one
which allows the shooter to shoot

The Remington-Union Model 11 is the
most powerful and reliable of all shot-
guns. It is the only one of its kind.
It is the only one which allows the

**GUN, SHOT, 12-GAUGE, 26-INCH BARREL AUTO-LOADING,
REMINGTON, MODEL 11**



**GUN, SHOT, 12-GAUGE, 26-INCH BARREL AUTO-LOADING, REMINGTON,
MODEL 11, 5 SHOT, WITH NEW IMPROVED CYLINDER**

STOCK Nos. 2-G-1275 (Without Cutts Compensator);
2-G-1276 (Without Cutts Compensator)

THE Auto-Loading Shotgun is used on trap and skeet ranges in connection with the Aviation Free Gunnery Training Program for training gunners in the fundamentals of hitting moving targets. It differs from the 3-shot "Sportsman" model, in that it has a longer magazine which allows for 5 shots. This gun

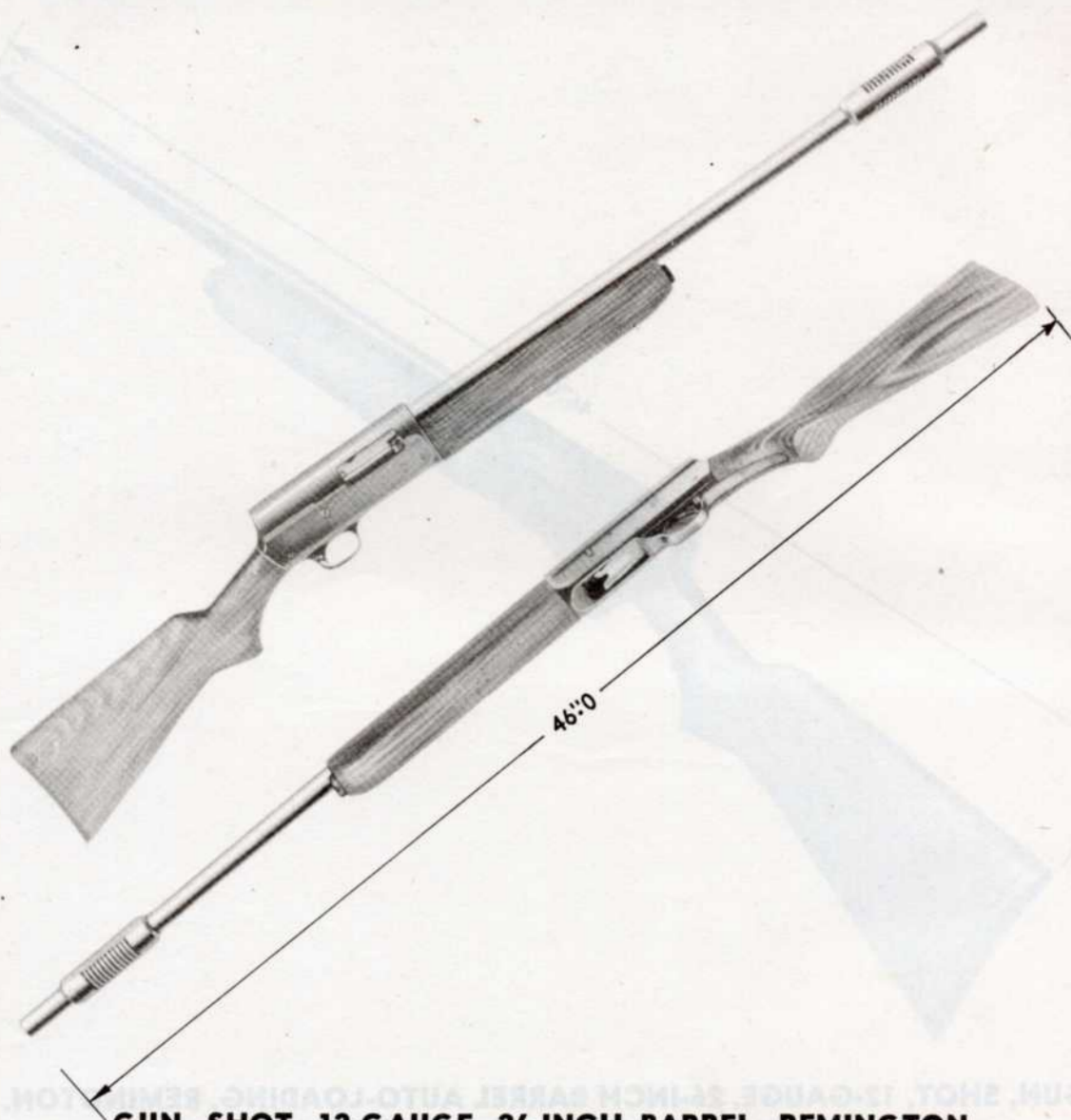
is furnished with a 26-inch barrel, a bored, improved cylinder (modified choke) and with or without a Cutts compensator.

This shotgun is a standard commercial product and is furnished to Naval Air Gunnery Schools, to certain Naval Air Stations, and to Naval Air Technical Training Centers.

DIMENSIONS (length): approx. 46.0 inches.

WEIGHT: approx. 8.5 pounds.

GUN, SHOT, 12-GUAGE, 26-INCH BARREL REMINGTON SPORTSMAN AUTO LOADING



GUN, SHOT, 12-GUAGE, 26-INCH BARREL, REMINGTON SPORTSMAN AUTO LOADING

STOCK No. 2-G-1290

THE 3-shot Auto-Loading Shotgun is used on trap and skeet ranges in connection with the Aviation Free Gunnery Training Program for training gunners in the fundamentals of hitting moving targets. This gun is furnished with a 26-inch barrel, a bored, improved cylinder (modified choke) and with a Cutts compensator.

With the stock, the gun is used as a part

of the Flexible Shotgun Mount, complete with Modified Shotgun (Stock No. 2-M-490).

This shotgun is a standard commercial product and is furnished to Naval Air Gunnery Schools, to certain Naval Air Stations, and to Naval Air Technical Training Centers.

DIMENSIONS (length): approx. 46.0 inches.

WEIGHT: approx. 8.3 pounds.

MOUNT, SHOTGUN, FLEXIBLE, COMPLETE WITH MODIFIED REMINGTON SPORTSMAN SHOTGUN



MOUNT, SHOTGUN, FLEXIBLE, COMPLETE WITH MODIFIED REMINGTON SPORTSMAN SHOTGUN

STOCK No. 2-M-490

THE Flexible Shotgun Mount, complete with modified shotgun, is used in connection with the Aviation Free Gunnery Training Program, to instruct gunners in the technique of handling machine guns and hitting moving targets. It consists of a tubular metal operator's stand, the center post of which supports a flexible shotgun mount adapter, and the modified auto-loading shotgun. The shotgun is equipped with machine gun sights, and the stock has been replaced with a machine gun type double spade grip, the trigger of which

is linked to the shotgun trigger for firing.

The Remington Auto-Loading 12-Gauge "Sportsman" Shotgun, (Stock No. 2-G-1290), supersedes the Remington Pump Action 12-Gauge Model 31 Shotgun, (Stock No. 2-G-1280), originally used with this equipment.

DIMENSIONS:

Base, approx. 40.0 x 56.5 inches.

Height of tubular structure, approx. 41.0 inches.

WEIGHT (shipping): approx. 170 pounds.

TARGET, CLAY PIGEON



TARGET, CLAY PIGEON

STOCK No. 2-T-35

THE Clay Pigeon Target is a dish-shaped object that is thrown into the air as a target for gunnery practice. The pigeon is ejected from skeet sets or traps.

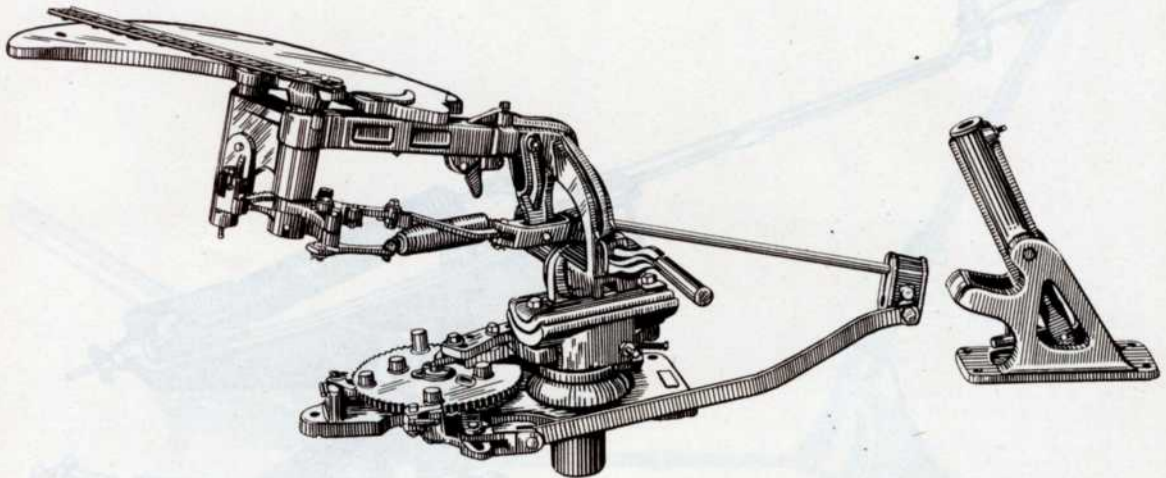
The target is a standard commercial product supplied to those activities conducting Aviation Free Gunnery Training.

DIMENSIONS: approx. 4.3 x 4.3 x 1.0 inches.

WEIGHT: approx. 0.2 pound.

PUBLICATION: O.C.L. V-41-42.

TRAP, SINGLE, REMINGTON, MODEL 41, AUTO-ANGLING



TRAP, SINGLE, REMINGTON, MODEL 41, AUTO-ANGLING

STOCK No. 2-T-1342

THE Auto-Angling Trap Model 41 projects clay pigeon targets into the air for training aviation gunners to shoot at moving targets.

The trap may be installed and set to project the targets away from or toward the gunner, at high or low altitudes, and at automatically varying sight angles.

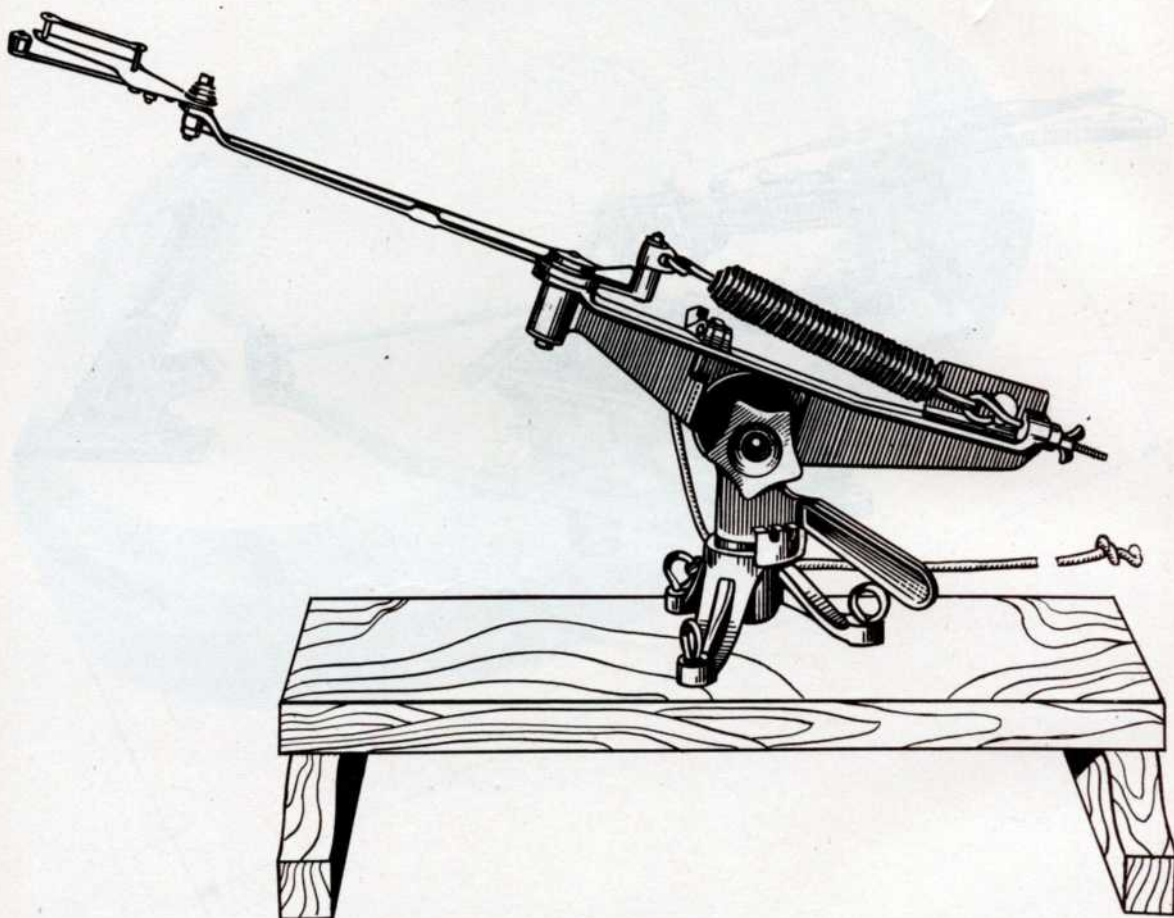
This trap is furnished complete with a pull stand. It is cocked by pushing forward on the pull lever which is then brought back to neutral position from which a further backward movement releases the target. This trap dif-

fers from the Western auto-angling trap and skeet traps, in that the throwing arm sweeps the target into the air from a large, flat, smooth plate.

The trap which is a standard commercial product is furnished to Naval Air Gunnery Schools and to designated Naval Air Stations and Naval Air Technical Training Centers for use in connection with Aviation Free Gunnery Training.

WEIGHT (shipping): approx. 225 pounds.

TRAP, SINGLE, WESTERN PRACTICE



TRAP, SINGLE, WESTERN PRACTICE

STOCK No. 2-T-1344

THE Single Western Practice Trap projects clay pigeon targets into the air for training aviation gunners to shoot at moving targets.

The trap may be adjusted to project the targets in any direction at high or low altitudes, but it cannot be set to project targets at automatically varying sight angles.

Since this trap is of light construction and easily portable, it is used aboard CV's and

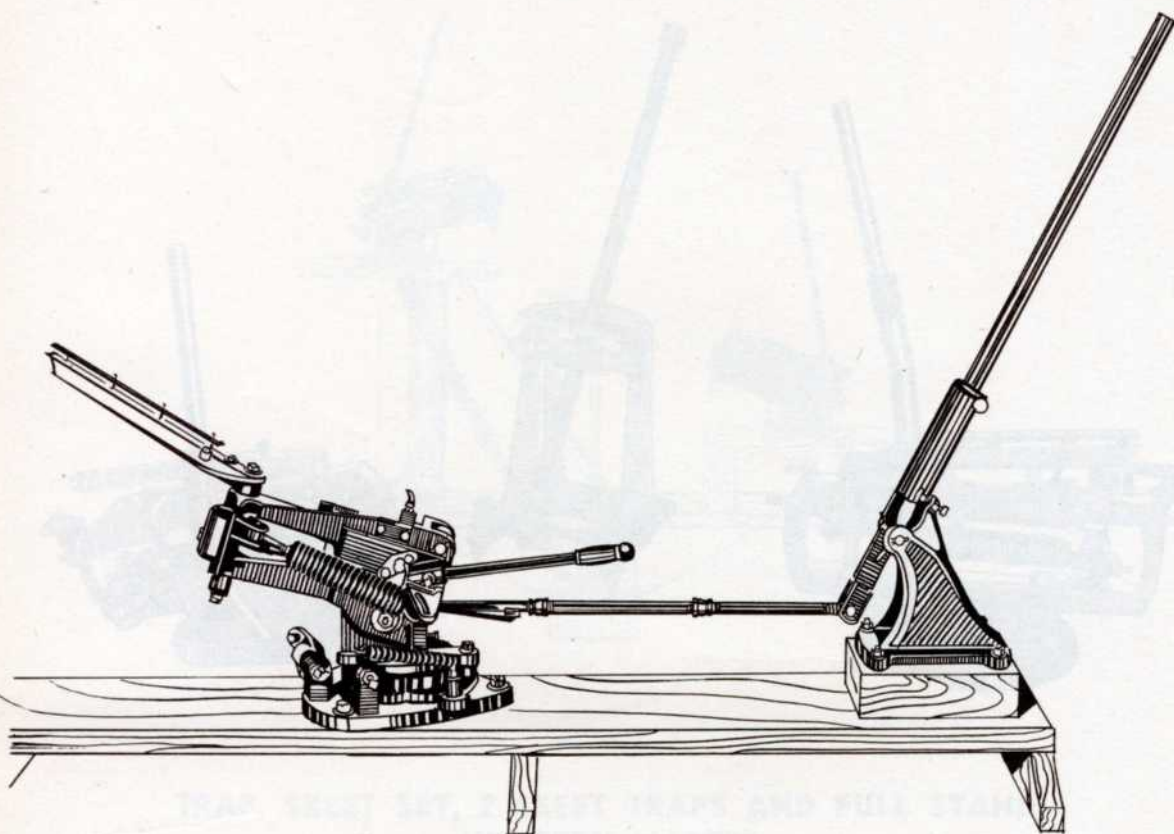
CVE's. It may also be used in place of the rugged and more versatile auto-angling traps when the latter are not available.

DIMENSIONS (Packed one trap to a fibre carton):
approx. 21.5 x 10.0 x 12.5 inches.

WEIGHT (shipping): approx. 20.0 pounds.

MFR'S DWG: Western Model V-1505A.

TRAP, SINGLE, WESTERN WHITE FLYER, AUTO ANGLING



TRAP, SINGLE, WESTERN WHITE FLYER, AUTO ANGLING

STOCK No. 2-T-1345

THE Western White Flyer Single Auto Angling Trap projects into the air clay pigeon targets used in training aviation gunners to shoot at moving targets. The trap may be installed and set to project the targets away from or toward the gunner, at high or low altitudes, and at automatically varying sight angles. It is furnished complete with pull stand and is similar in action to the Remington auto angling trap.

This trap is a standard commercial prod-

uct. It is furnished to Naval Air Gunnery Schools, and to certain Naval Air Stations and Aviation Free Gunnery Training.

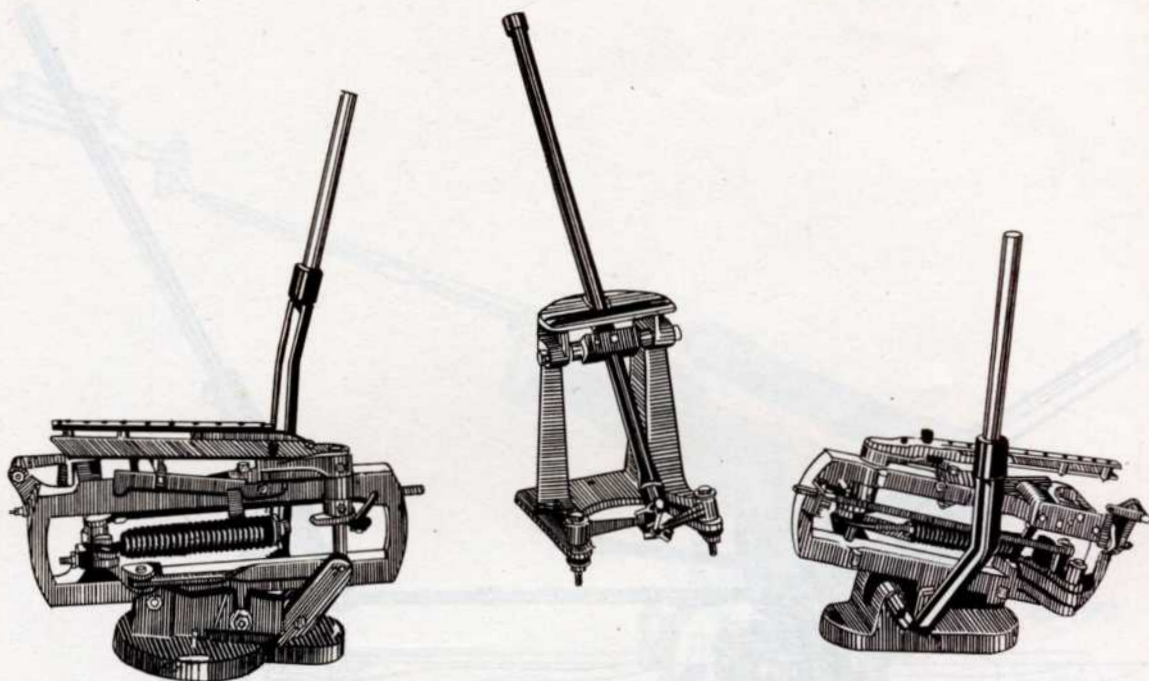
DIMENSIONS (Packed one trap to a wood case):
approx. 33.5 x 18.5 x 16.8 inches.

WEIGHT (Shipping): approx. 176 pounds.

PUBLICATION: Western Trap and Skeet Equipment Manual.

MFR'S DWG: Western Cartridge Co., V-1517A.

TRAP, SKEET SET, 2 SKEET TRAPS AND PULL STAND, REMINGTON WONDER



TRAP, SKEET SET, 2 SKEET TRAPS AND PULL STAND, REMINGTON WONDER

STOCK No. 2-T-1348

THE Remington Wonder Skeet Set Trap projects clay pigeon targets into the air for training aviation gunners to shoot at moving targets. The set consists of 2 Remington Wonder traps, and one pull stand, together with the accessories necessary for installation on a skeet range. The 2 traps are mounted in trap houses, one on each side of the range, the left being in a high altitude position and the right in a low altitude position. The single lever pull stand is placed at the rear center of the range and is connected to the 2 traps by wire cables.

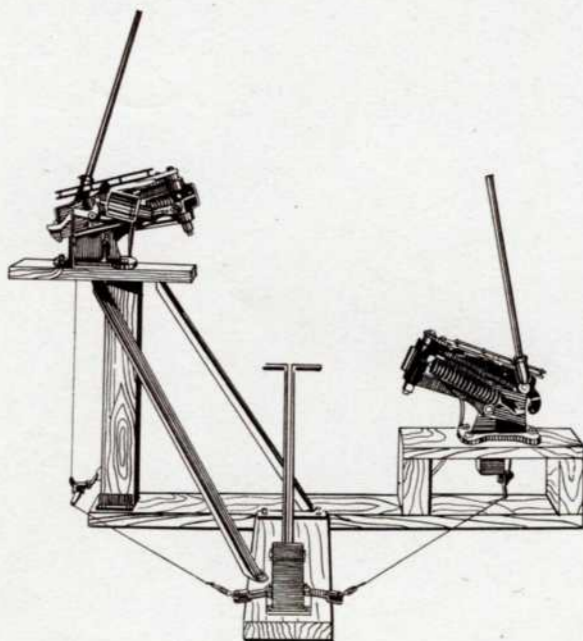
In operation, the trap operator in either trap house places the clay pigeon target on the

projector and pulls the cocking lever to cock the main spring. The pull stand operator may then release the targets by moving the pull stand lever to the left to release the high altitude target, and to the right to release the low altitude target. A rear movement of the lever releases both targets simultaneously.

This skeet set is a standard commercial product furnished to Naval Air Gunnery Schools and to designated Naval Air Stations and Naval Air Technical Training Centers for use in connection with Aviation Free Gunnery Training.

WEIGHT: approx. 239 pounds.

TRAP, SKEET SET, WESTERN MASTER



TRAP, SKEET SET, 2 SKEET TRAPS AND PULL STAND, WESTERN MASTER

STOCK No. 2-T-1349

THE Western Master Skeet Set Trap projects clay pigeon targets into the air to help train aviation gunners to shoot at moving targets.

The set consists of 2 Western Master traps and one pull stand, together with the accessories necessary for installation on a skeet range. The 2 traps are mounted in trap houses, one on either side of the range, the left being in a high altitude position and the right in a low altitude position. The double lever pull stand is placed at the rear center of the range and is connected to the 2 traps by means of wire cables.

In operation, the trap boy in either trap house places the clay pigeon target on the projector. Then, by pulling the cocking lever, he cocks the main spring. The pull stand operator may then release the targets by moving the

left lever to release the high altitude target, and the right lever the low altitude target. By operating both levers at the same time, he can release both targets simultaneously.

This skeet set is a standard commercial product and is furnished to Naval Air Gunnery Schools and to certain Naval Air Stations and Naval Air Technical Training Centers for use in connection with Aviation Free Gunnery Training.

DIMENSIONS (Packed one set [2 traps] in wood case): approx. 43.5 x 30.5 x 14.5 inches.

WEIGHT (shipping): approx. 197.0 pounds.

PUBLICATION: Western Trap and Skeet Equipment Manual.

MFR'S DWG: Western Cartridge Co., V-1506A.

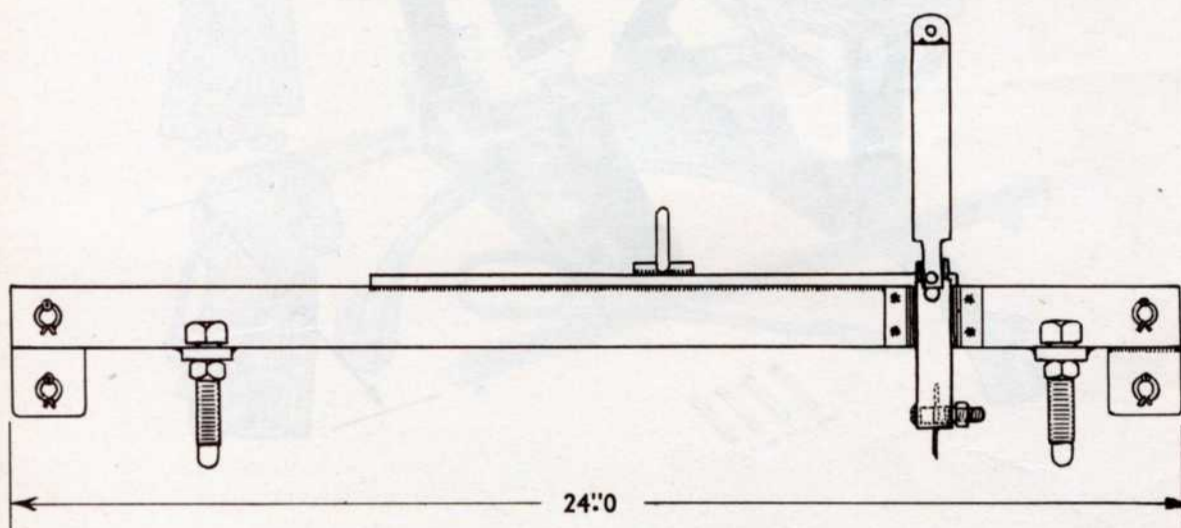
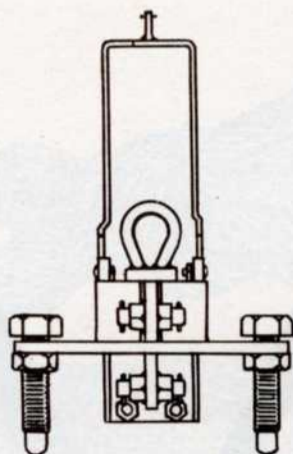
BOMB and TORPEDO EQUIPMENT

BOMB AND TORPEDO EQUIPMENT

ADAPTER, BOMB RACK
ADAPTER, BOMB SKID
ATTACHMENT, HOISTING
BANDS, HOISTING
BOXES, SWITCH
CARRIERS, BOMB
CONTAINERS, BOMB
CONTROLS, BOMB ARMING
DISTRIBUTOR, STATION
FORK, STEADYING
HANDLES, BOMB ARMING AND RELEASE
HOISTS, BOMB
INTERVALOMETERS
RACKS, BOMB
RELEASES, BOMB RACK
SELECTOR UNIT, BOMB RACK
SHACKLES, BOMB
SKIDS, BOMB
SOLENOIDS, BOMB RACK
TOOL KIT, BOMB
TRUCK, BOMB AND TORPEDO
TRUCK, LIFT
WRENCHES
WHEEL, TRACK LAYING

NOTES

ADAPTER, BOMB RACK, MARK 1



ADAPTER, BOMB RACK, MARK 1

STOCK No. 3-A-42

THE Bomb Rack Adapter Mark 1 is used to attach a Bomb Rack Mark 43, Mod. 1 or Mod. 2 to a single hook Bomb Rack Mark 41, and Mods. or Mark 50, and Mods. The adapter consists of a steel bar with 2 holes at each end for attachment of the Bomb Rack Mark 43, 2 pairs of bolts against which the ends of the steadying forks bear, a single suspension lug

on top, and a clamp bar that fits over the aft end of Bomb Rack Mark 41, and Mods. or Mark 50, and Mods.

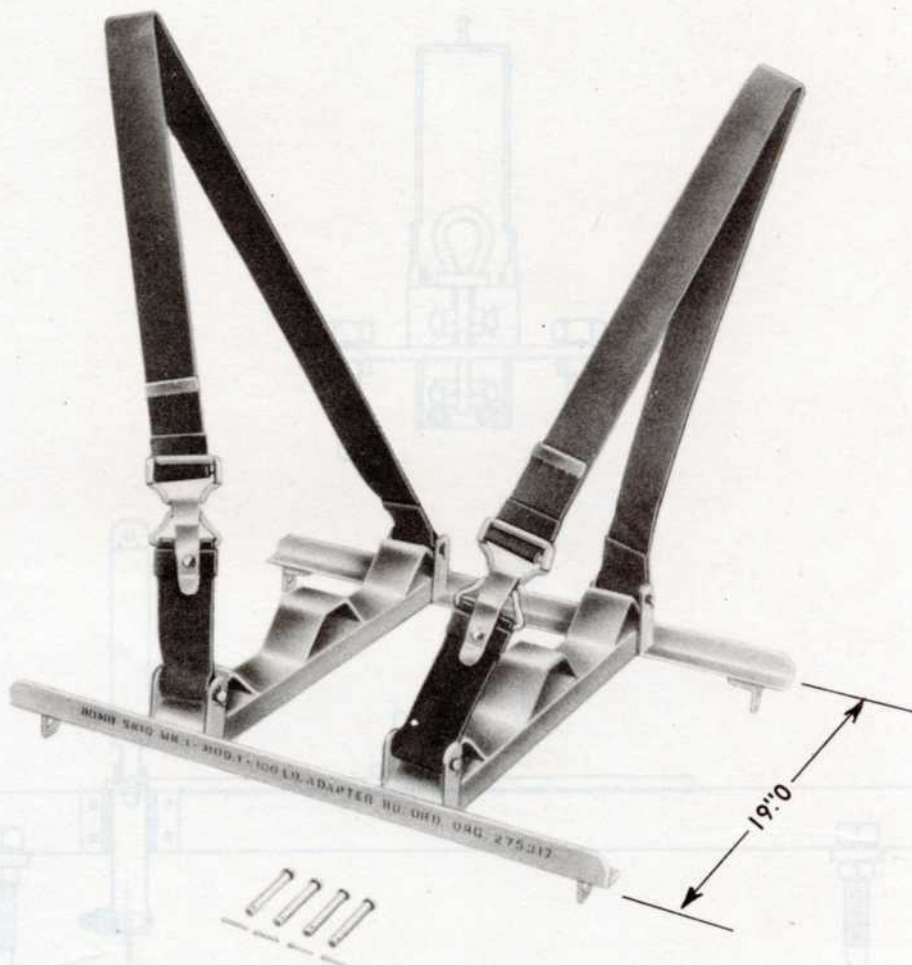
DIMENSIONS: approx. 24.0 x 8.3 x 5.8 inches.

WEIGHT: approx. 5.5 pounds.

PUBLICATION: O.T.I. V-38-43.

BuORD DWGS: SK. 91001, Gen. Arr. 328825.

ADAPTER, BOMB SKID, MARK 1, MOD. 1



ADAPTER, BOMB SKID, MARK 1, MOD. 1

STOCK No. 3-A-50

THE Bomb Skid Adapter Mark 1, Mod. 1 is a steel tray-like frame which, placed on top of Bomb Skid Mark 1, Mod. 1, changes the capacity of the skid from one large bomb to three 100-pound bombs. Two bombs are carried in cradle supports side by side fore-and-aft of the adapter and skid, and the third bomb is placed on top. The load is then secured by a pair of web hold-down straps, which are tightened with snap-lever buckles.

The adapter is fastened to the skid by the skid hold-down strap pins. After the straps

and pins have been removed, the adapter is set on the skid, so the pins pass through the 4 flanges of the adapter as they are replaced in the hold-down brackets.

The adapter is included in aircraft carrier allowance lists.

DIMENSIONS: approx. 24.0 x 19.0 x 7.0 inches.

WEIGHT: approx. 12.0 pounds.

PUBLICATION: O.P. 1073.

BuORD DWGS: SK. 90591 Sheet 3, Gen. Arr. 275317.

ATTACHMENT, HOISTING, FOR BOMB RACKS, MARK 41 AND MODS. AND MARK 50 AND MODS.



ATTACHMENT, HOISTING, FOR BOMB RACKS, MARK 41 AND MODS. AND MARK 50 AND MODS.

STOCK No. 3-A-625

THE Hoisting Attachment for Bomb Racks Mark 41 and Mods. and Mark 50 and Mods. is used for hoisting a 325-pound depth bomb or a 100-pound bomb. None of these racks is equipped for using a bomb hoist, and this attachment provides an easier means of loading than manual lifting of the bomb or depth charge.

The attachment consists of 2 brackets, ropes, and slings for a 100-pound bomb, and a cradle for a 325-pound depth bomb. The brackets

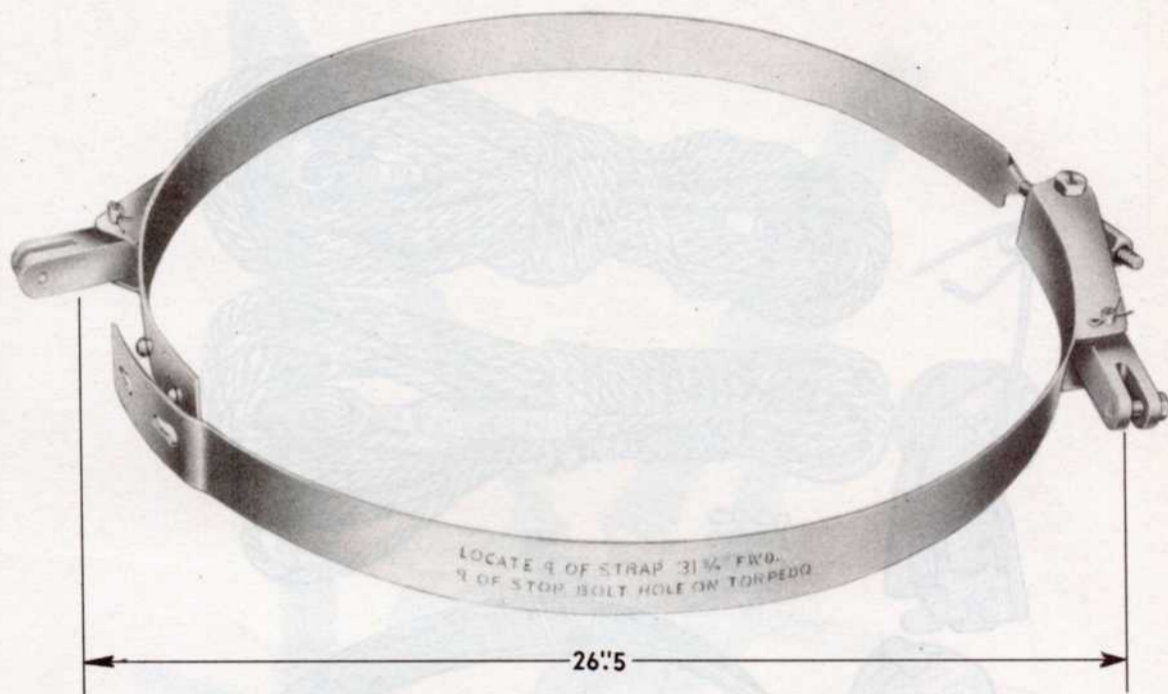
have a grooved pulley at one end and slots at the other. In operation, they are bolted to each end of the bomb rack and the ropes are passed over the pulleys. One end of each rope is attached at the bomb, and the other end is held by the operator. Pulling on the ropes raises the bomb to the rack.

WEIGHT: approx. 15.3 pounds.

PUBLICATION: O.C.L. V-8-42.

BuORD DWG: Gen. Arr. 333213.

BAND, TORPEDO HOISTING, MARK 1 AND MOD.



BAND, TORPEDO HOISTING, MARK 1

STOCK No. 3-B-245

THE Torpedo Hoisting Band Mark 1 is a double-sectioned circular steel strap used to hoist aircraft torpedoes of the Mark 13 type into position on airplanes. The sections are fastened together by a take-up bolt and nut at one end and by 2 clip rivets and locking slots at the other end. Two clevises with hoisting brackets are provided.

The band is placed around the torpedo with the hoisting brackets on each side. After the take-up nut is tightened, the torpedo is hoisted

into position by 2 bomb hoists. The band is then removed by unscrewing the take-up nut and separating the band at the locking slots.

Mark 1 is being replaced by the improved Mark 1, Mod. 2.

DIMENSIONS (assembled): approx. 26.5 x 23.0 x 1.8 inches.

WEIGHT: approx. 7.0 pounds.

CAPACITY: One 2200-pound torpedo.

BuORD DWG: Gen. Arr. 300468.

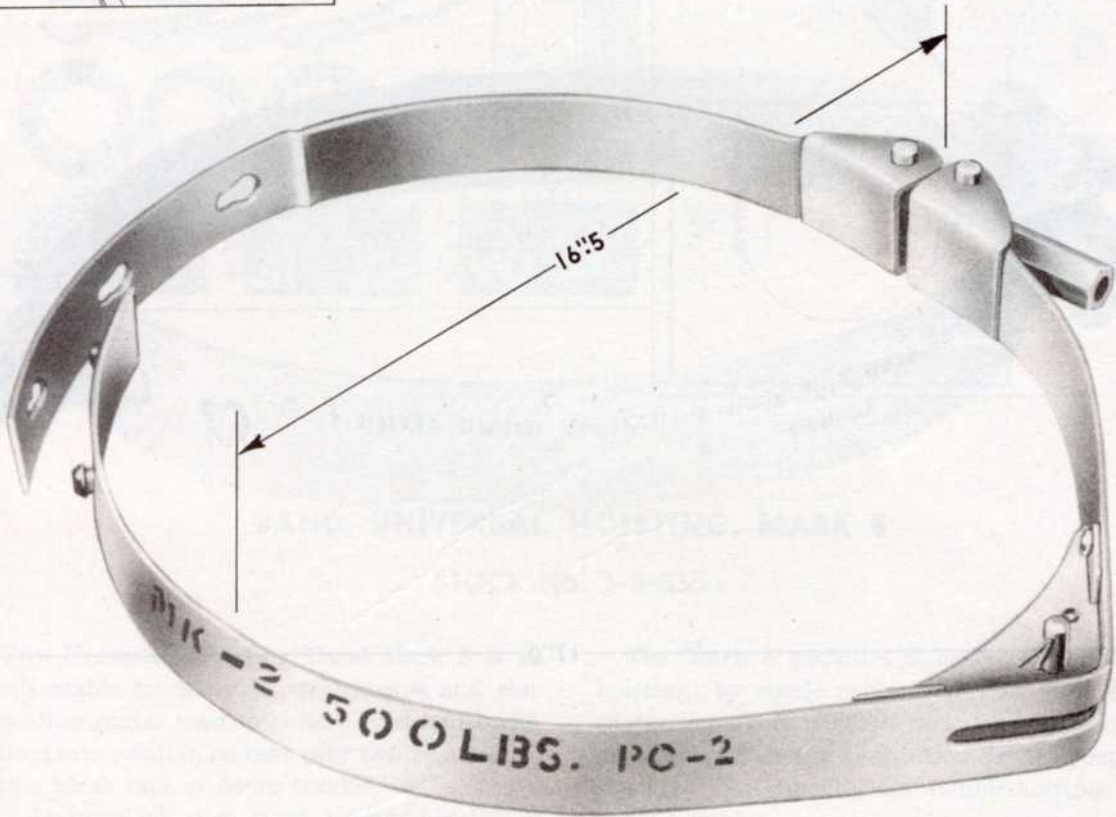
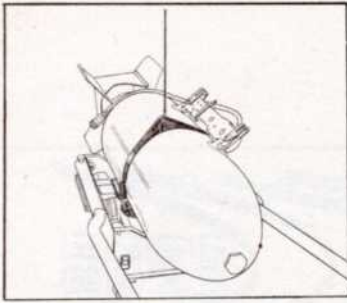
BAND, TORPEDO HOISTING, MARK 1, MOD. 2

STOCK No. 3-B-245-60

THE Torpedo Hoisting Band Mark 1, Mod. 2 is like Mark 1, except that it is made from carbon steel and has fewer welded joints. No

welded joint supports any of the load. Mark 1, Mod. 2 replaces and is interchangeable with the Mark 1 hoisting band.

BAND, HOISTING, MARK 2



BAND, HOISTING, MARK 2

STOCK No. 3-B-246

THE Hoisting Band Mark 2 is used to hoist bombs 14 to 15 inches in diameter, weighing up to 500 pounds. The band is a double-sectioned circular steel strap. The sections are fastened together by an adjustable take-up bolt at one end and clip rivets and locking slots at the other.

DIMENSIONS (assembled): approx. 16.5 x 16.5 x 2.25 inches.

WEIGHT: approx. 5.3 pounds.

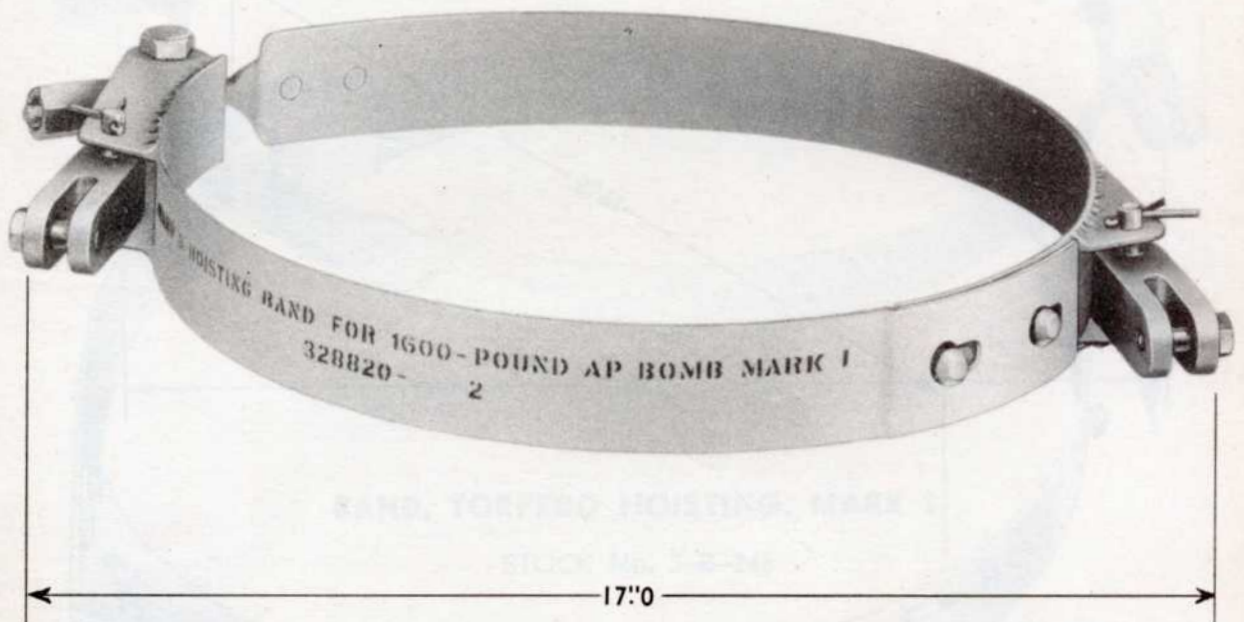
The Mark 2 has a suspension pin instead of 2 clevises and brackets as used on the Mark 1. Bomb Hoist Mark 7, Mod. 1 is used with this band.

Hoisting Band Mark 2 will be replaced by the Universal Hoisting Band Mark 8.

CAPACITY: One 500-pound bomb.

BuORD DWG: Gen. Arr. 328932.

BAND, HOISTING, MARK 6



BAND, HOISTING, MARK 6

STOCK No. 3-B-250

THE Hoisting Band Mark 6 is used to hoist an Armor Piercing Bomb Mark 1 or AN-Mark 1 weighing 1600 pounds. The band is similar in construction to the Hoisting Band Mark 1.

The Universal Hoisting Band Mark 8 may be used in place of the Mark 6.

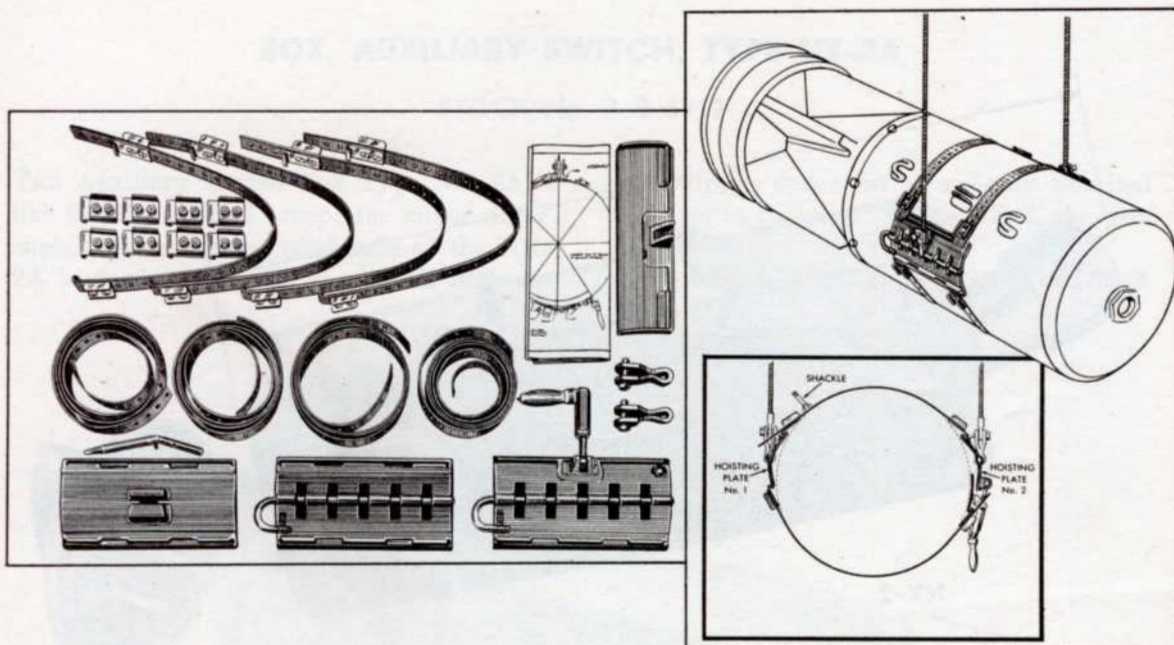
DIMENSIONS (assembled): approx. 17.0 x 14.2 x 1.8 inches.

WEIGHT: approx. 4.0 pounds.

CAPACITY: One 1600-pound bomb.

BuORD DWG: Gen. Arr. 328820.

BAND, UNIVERSAL HOISTING, MARK 8



BAND, UNIVERSAL HOISTING, MARK 8

STOCK No. 3-B-255

THE Universal Hoisting Band Mark 8 is an adjustable assembly of steel straps and connecting plates used to hoist bombs and torpedoes into position so that they can be attached to a bomb rack or bomb shackle.

As supplied, each Mark 8 outfit consists of 1 hoisting plate with take-up mechanism; 1 take-up plate; 2 hoisting plate assemblies; and four 6-foot lengths and four 2-foot lengths of perforated steel straps (32 feet). The assembly is converted into a double-band assembly by combining take-up and hoisting plates with the proper straps and connector fittings. The double-band assembly is used to hoist Navy, Army or AN standard bombs, torpedoes, mines, etc., ranging in diameter from 8 to 48 inches.

One Mark 8 assembly should normally be kept ready for use with each diameter of bomb regularly handled. It need not be completely disassembled when removed from the bomb.

The Mark 8 provides 2 basic methods of hoisting: by single cable or double cable for suspension from a bomb rack, and by single or double cable for suspension from a bomb shackle. The capacity for double-hoisting is 4,000 pounds.

A special plate is now supplied to be used in place of the hoisting plate when 500-pound to 1000-pound bombs are to be hoisted into PBV, SBD and TBF type airplanes. This plate is flattened on top, to give the additional clearance required for these airplanes.

DIMENSIONS (shipping carton): approx. 12.5 x 8.4 x 6.8 inches.

WEIGHT: approx. 23.0 pounds.

CAPACITY:

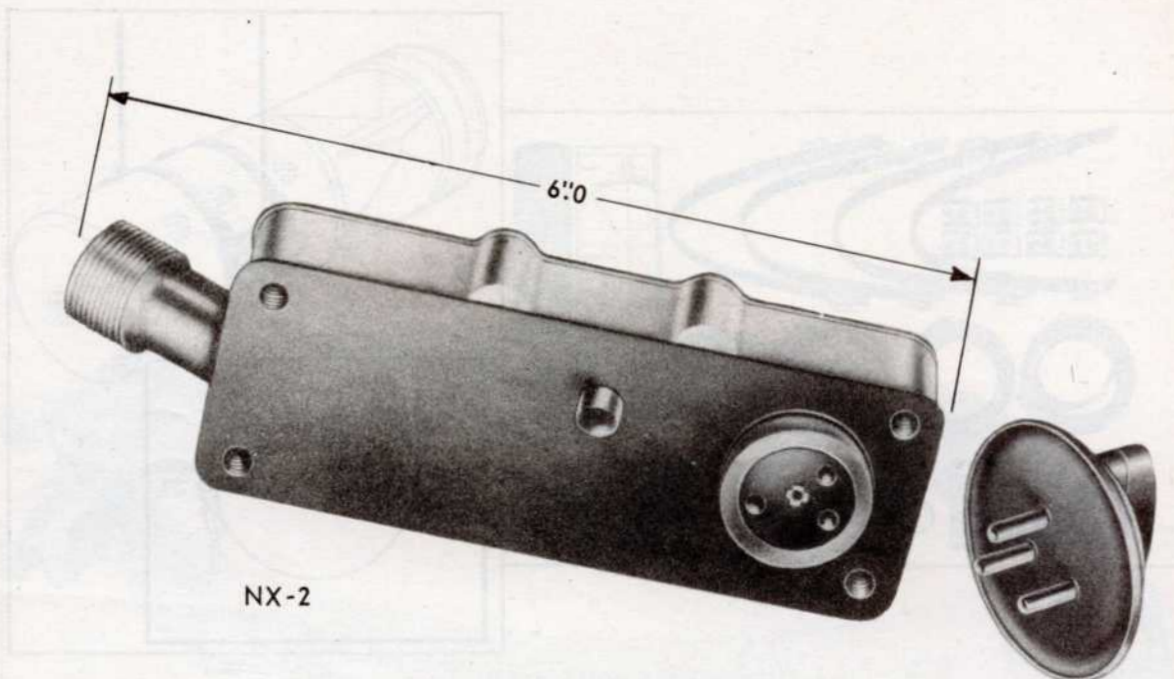
Single-hoisting, approx. 2000 pounds.

Double-hoisting, approx. 4000 pounds.

PUBLICATION: O.T.I. A1-43.

BuORD DWG: Gen. Arr. 329748.

BOXES, AUXILIARY SWITCH, TYPES NX-2, NX-2A, AX-2, AX-5



BOX, AUXILIARY SWITCH, TYPE NX-2

STOCK No. 3-B-1910

THE Auxiliary Switch Box Type NX-2 supplies a permanent outlet for electric power to the Bomb Shackle Release Type N-2 or Bomb Rack Release Type A-2. The switch box also transfers the releasing impulse to the next station when the release mechanism is detached.

The switch box is moisture-proof and made of die-cast aluminum. On one end of the box is an AN Standard 3/8-inch male conduit fitting cast integrally with the box at a 30-degree angle. The face of the plate is screwed on. The back plate is protected by rubber sheeting cemented to the plate. A 3-socket receptacle is attached to the back of the box.

The push-button control of a spring-loaded, self-closing switch extends through the back. When the bomb rack or shackle release is in place, this push button is depressed so that current flows through the release. When the

release is removed, the push button springs back to its normal position, shorting the circuit and permitting the impulse to by-pass that station.

Two Auxiliary Switch Boxes Type NX-2 are bolted to the airplane structure for each Bomb Shackle Release Type N-2. These boxes are used for both right and left hand releases. Only one box is used with each Bomb Rack Release Type A-2.

The Type NX-2 has 2 internal wires, already in place, leading from the plug to the wiring posts. A third wire, for the pilot's indicator light, must be put in when the box is installed.

DIMENSIONS: approx. 2.5 x 2.0 x 6.0 inches.

WEIGHT: approx. 0.3 pound.

PUBLICATION: O.P. 1077.

BuORD DWG: SK. 90873, Gen. Arr. 328082.

BOXES, AUXILIARY SWITCH, TYPES NX-2, NX-2A, AX-2, AX-5 (CONT'D)

BOX, AUXILIARY SWITCH, TYPE NX-2A

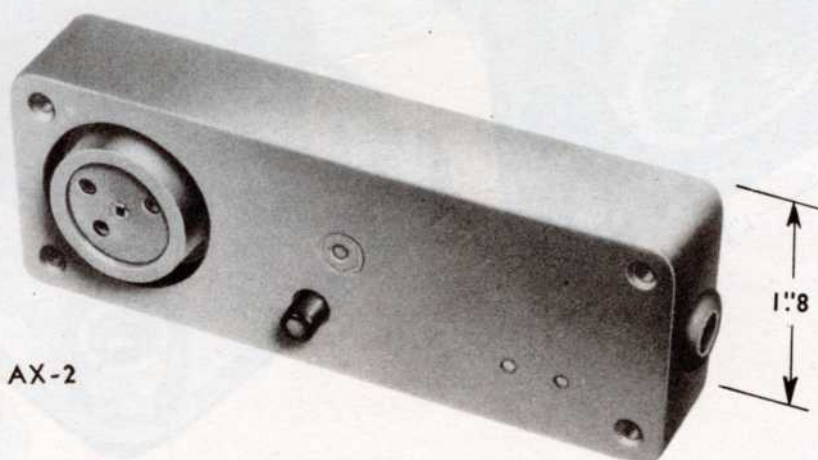
STOCK No. 3-B-1912

THE Auxiliary Switch Box Type NX-2A is like the Type NX-2 except for minor differences. The connector receptacle of the NX-2A is firmly fixed, and the pilot's indicator

light wire is connected to a 3-way terminal and then to the plug. In the NX-2, the wire leads directly to the receptacle.

The Type NX-2A replaces the Type NX-2.

BuORD DWG: SK. 91393, Gen. Arr. 330870.



BOX, AUXILIARY SWITCH, TYPE AX-2

STOCK No. 3-B-1905

THE Auxiliary Switch Box Type AX-2 is similar in operation to the Type NX-2, but differs slightly in construction. The Type AX-2 has a rubber grommet with an inside diameter of 1/4-inch in place of the 3/8-inch male conduit fitting as used on the NX-2. The Type AX-2 has no internal wires. Wires must

be put in when the box is installed. The box of the AX-2 is of light construction and is not moisture-proof.

DIMENSIONS: approx. 4.9 x 1.8 x 1.0 inches.

WEIGHT: approx. 0.3 pound.

MFR'S DWG: P. R. Mallory Co., B-134002.

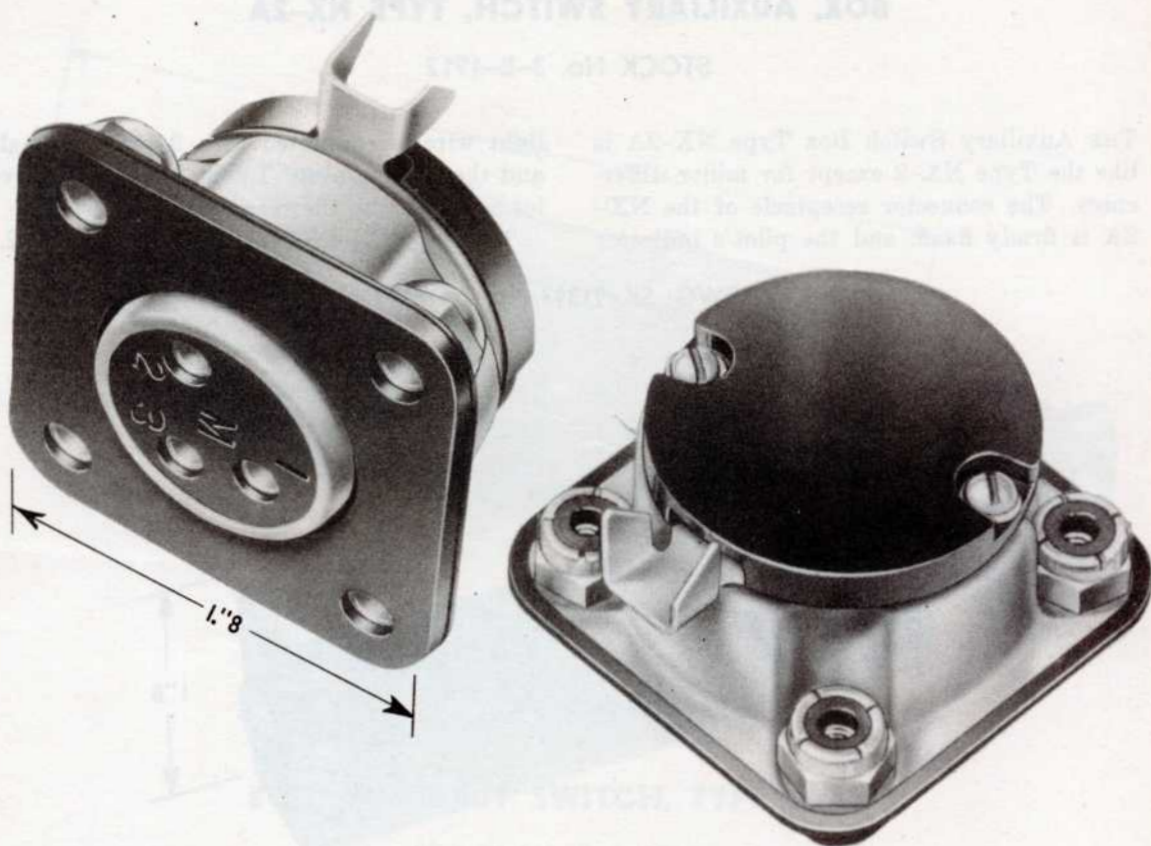
BOX, AUXILIARY SWITCH, TYPE AX-5

STOCK No. 3-B-1907

THE Auxiliary Switch Box Type AX-5 has interconnecting wires between the socket and

solder lug terminals. In all other respects, it is identical to Type AX-2.

BOX, AUXILIARY SWITCH, AN-MARK 1



BOX, AUXILIARY SWITCH, AN-MARK 1

STOCK No. 3-B-1901

THE Auxiliary Switch Box AN-Mark 1 serves as a permanently mounted electrical outlet for Bomb Shackle Releases Type N-2 and similar bomb release mechanisms. The principal parts are a zinc plated steel housing, 3 sets of contacts, 3 contact springs, a 3-prong female electrical receptacle, a retainer, a cover, and 4 lock nuts for mounting purposes. The box is sealed to protect against entrance of moisture.

By means of this box, a bomb shackle release mechanism may be quickly connected in or removed from the bomb release system. When attached to the bomb shackle release mechanism, the switch box, following release

of a bomb, permits succeeding electrical release impulses to continue on to the next bomb station. When the bomb shackle release is removed from the circuit, the switch contacts in the box close, allowing release impulses to be transferred to succeeding bomb stations.

The AN-Mark 1 is identical with the Bomb Release Receptacle Type A-1 except that the latter does not contain the moisture-repelling rubber gaskets provided in the AN-Mark 1.

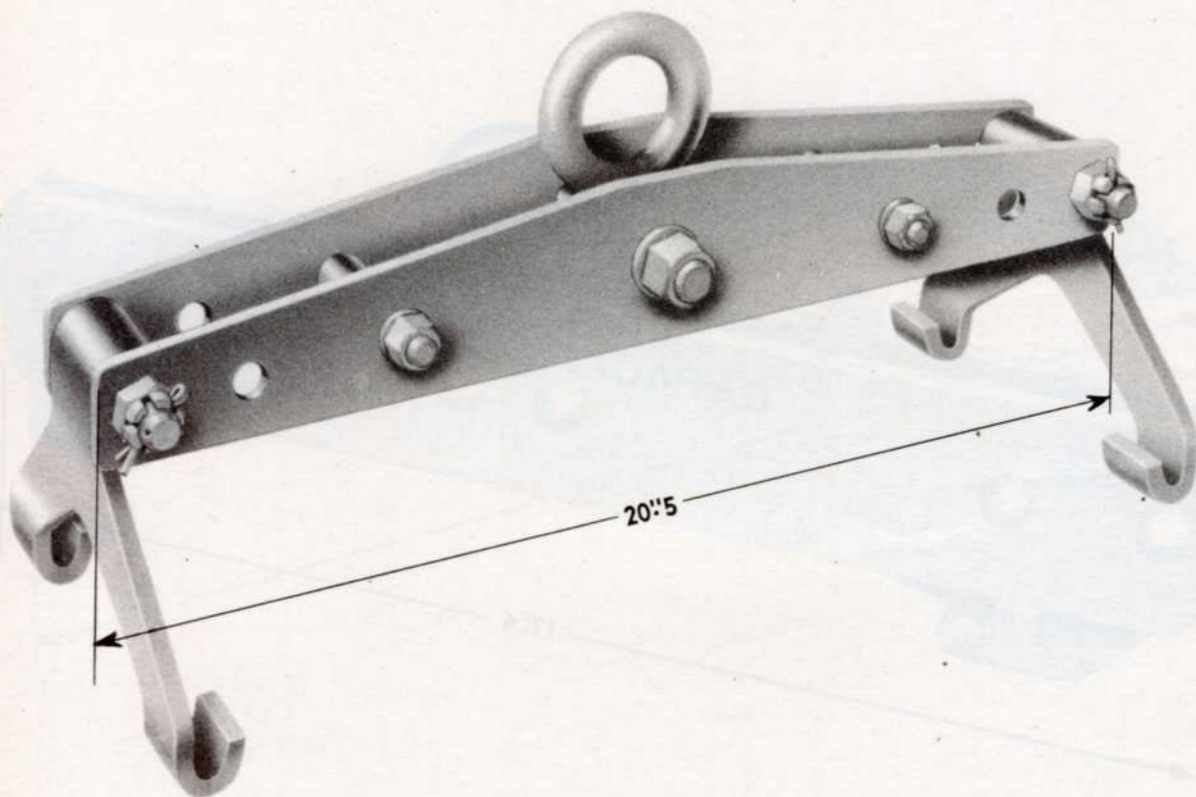
DIMENSIONS: approx. 1.8 x 1.9 x 1.0 inches.

WEIGHT: approx. 0.1 pound.

PUBLICATION: O.P. 1077.

BuORD DWGS: SK. 108801, Outline 388366.

CARRIER, BOMB, MARK 3, MOD. 1



CARRIER, BOMB, MARK 3, MOD. 1

STOCK No. 3-C-760-5

THE Bomb Carrier Mark 3, Mod. 1 is used to lift and carry crated bombs weighing up to 1000 pounds. The center lifting eye is bolted between a pair of side plates separated by spacers. Double-pronged carrying hooks are hinged to the ends of the plates. These hooks catch the end rims of the crated bombs and may be adjusted to bombs of various lengths. Slings may be attached to the hooks for sus-

pending uncrationed bombs, etc.

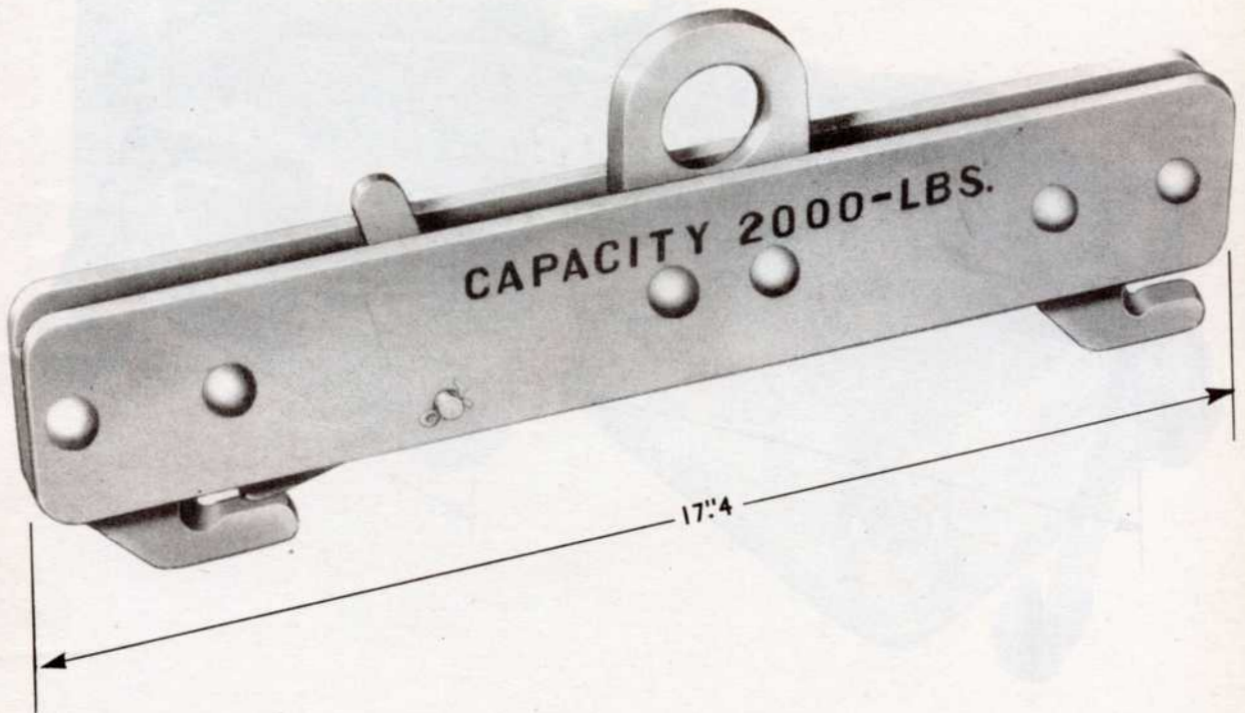
The Mark 3, Mod. 1 carrier replaces the Mark 5. It is of similar design but has twice the load capacity of the Mark 5.

DIMENSIONS: approx. 20.5 x 9.75 x 7.5 inches.

WEIGHT: approx. 18.0 pounds.

BuORD DWG: Gen. Arr. 199165.

CARRIER, BOMB, MARK 4



CARRIER, BOMB, MARK 4

STOCK No. 3-C-761

THE Bomb Carrier Mark 4 is used to lift and carry uncrated bombs weighing up to 2000 pounds. The center lifting eye is bolted between a pair of side plates, having a rigid hook at each end. These hooks, spaced 14 inches center to center, slide into the suspension lugs of the bomb. A spring-retained latch prevents one hook from slipping out of the

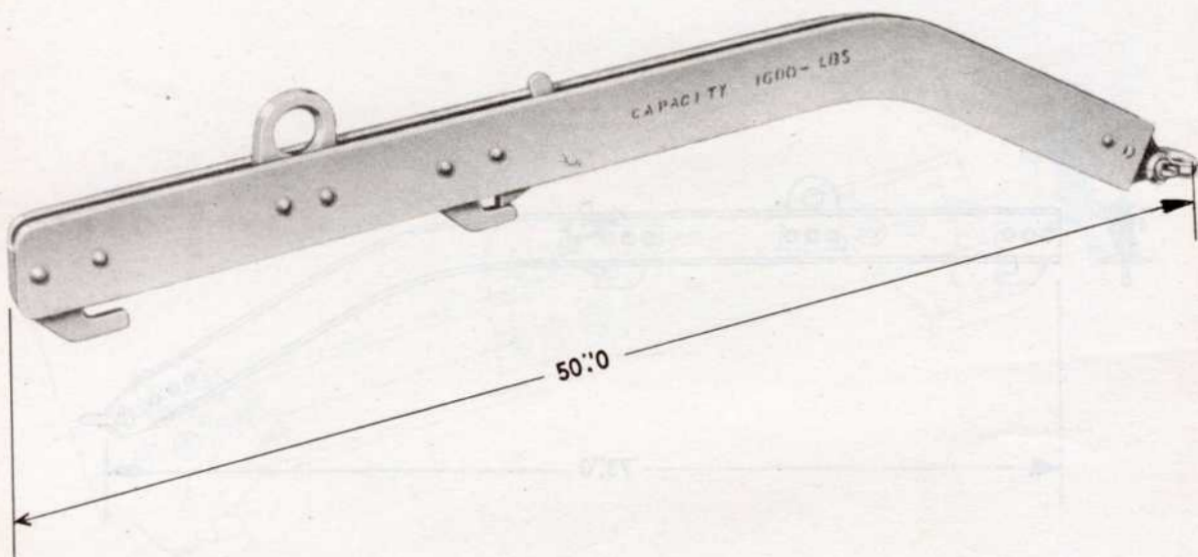
bomb lug, and holds the bomb in place until pressure on the upper extension releases the latch.

DIMENSIONS: approx. 17.4 x 6.5 x 1.6 inches.

WEIGHT: approx. 11.8 pounds.

BuORD DWG: Gen. Arr. 301015.

CARRIER, BOMB, MARK 6



CARRIER, BOMB, MARK 6

STOCK No. 3-C-763

THE Bomb Carrier Mark 6 is a beam used to lift and carry bombs that have 2 suspension lugs spaced 14 inches center to center. The capacity of the carrier is 1600 pounds. One end of the beam is bent at a 30-degree angle to conform to the shape of the nose end of the bombs.

Riveted between the side plates of the carrier are 2 carrying hooks, 14 inches apart, and 2 lifting eyes. The center lifting eye is half-way between the carrying hooks and is used

for horizontal lifting. The second lifting eye is at the bent end of the shackle and is used for vertical lifting.

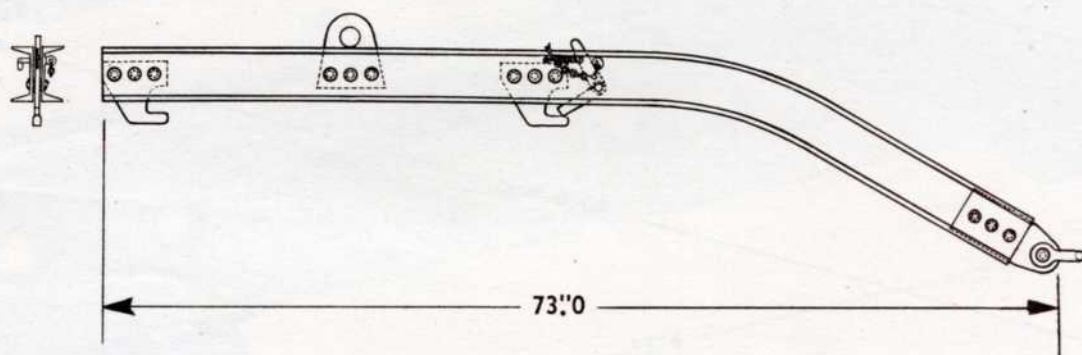
A spring-retained latch keeps the inside hook from slipping out of the bomb lug. The bomb is held in place until the latch is released by pressure on the upper extension.

DIMENSIONS: approx. 50.0 x 12.0 x 1.6 inches.

WEIGHT: approx. 40.0 pounds.

BuORD DWG: Gen. Arr. 388238.

CARRIER, BOMB, MARK 7



CARRIER, BOMB, MARK 7

STOCK No. 3-C-764

THE Bomb Carrier Mark 7 is used to lift and carry bombs that have 2 suspension lugs spaced 30 inches center to center. The capacity of the carrier is 4000 pounds. Two rigid carrying hooks are riveted 30 inches apart between 2 channels placed back to back. The center lifting lug for horizontal carrying is riveted midway between the hooks. For vertical carrying, the shackle end of the carrier is bent 30 degrees to conform to the shape

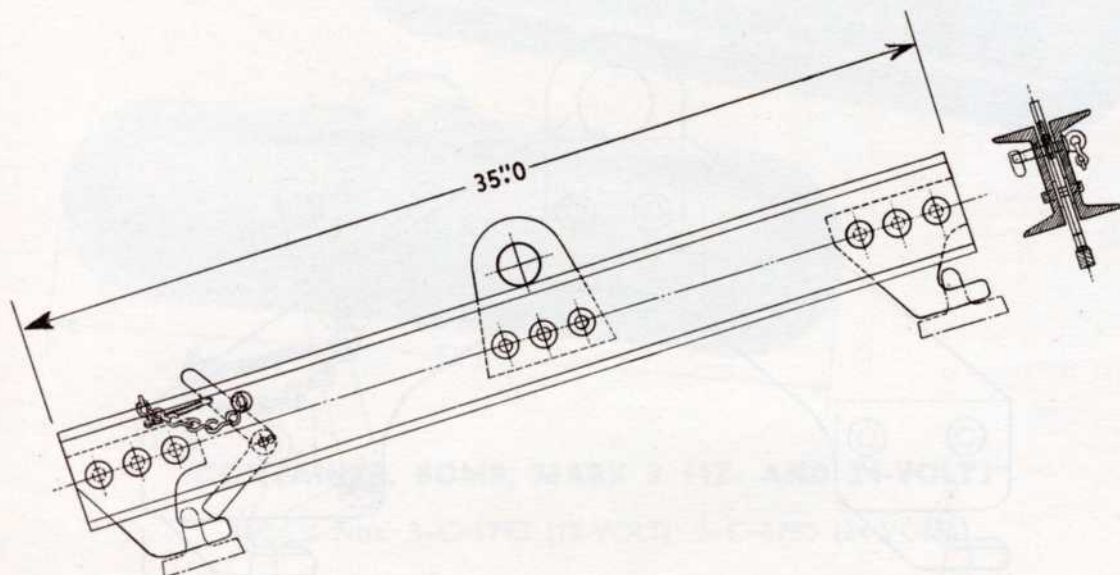
of the nose end of bombs to be carried. A spring-retained latch, which keeps one of the hooks from slipping out of the bomb lug, holds the carrier in place until the latch is released by pressure on its upper extension.

DIMENSIONS: approx. 73.0 x 19.5 x 3.9 inches.

WEIGHT: approx. 90.0 pounds.

BuORD DWG: Gen. Arr. 388241.

CARRIER, BOMB, MARK 8



CARRIER, BOMB, MARK 8

STOCK No. 3-C-765

THE Bomb Carrier Mark 8 is a heavy type of carrier used to lift and carry bombs having 2 suspension lugs spaced 30 inches center to center. The carrier, the capacity of which is 4000 pounds, is similar to the Mark 7 except that it is not equipped for vertical carrying. Two carrying hooks spaced 30 inches center to center are riveted between 2 channels placed back to back. A lifting eye is riveted midway

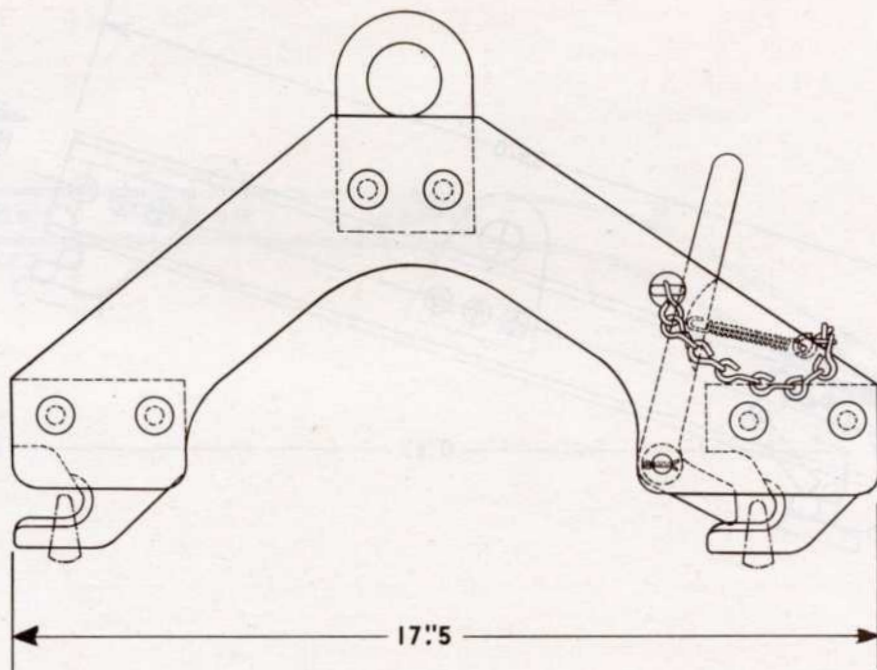
between the hooks. A spring-retained latch keeps one of the hooks from slipping out of the bomb lug so that the carrier is held in place until the latch is released by pressure on its upper extension.

DIMENSIONS: approx. 35.0 x 8.3 x 3.9 inches.

WEIGHT: approx. 45.0 pounds.

BuORD DWG: Gen. Arr. 388521.

CARRIER, BOMB, MARK 9



CARRIER, BOMB, MARK 9

STOCK No. 3-C-766

THE Bomb Carrier Mark 9 is used to lift and carry uncrated bombs equipped with suspension lugs spaced 14 inches between centers. It has a capacity of 1600 pounds. The Mark 9 is similar to the Mark 4 but is arched in the center. The center eye is raised about $4\frac{3}{4}$ inches to provide clearance in the middle of the beam for installing a trunnion band while the carrier is in place on the bomb. A spring-retained latch is provided as on other rigid

hook carriers.

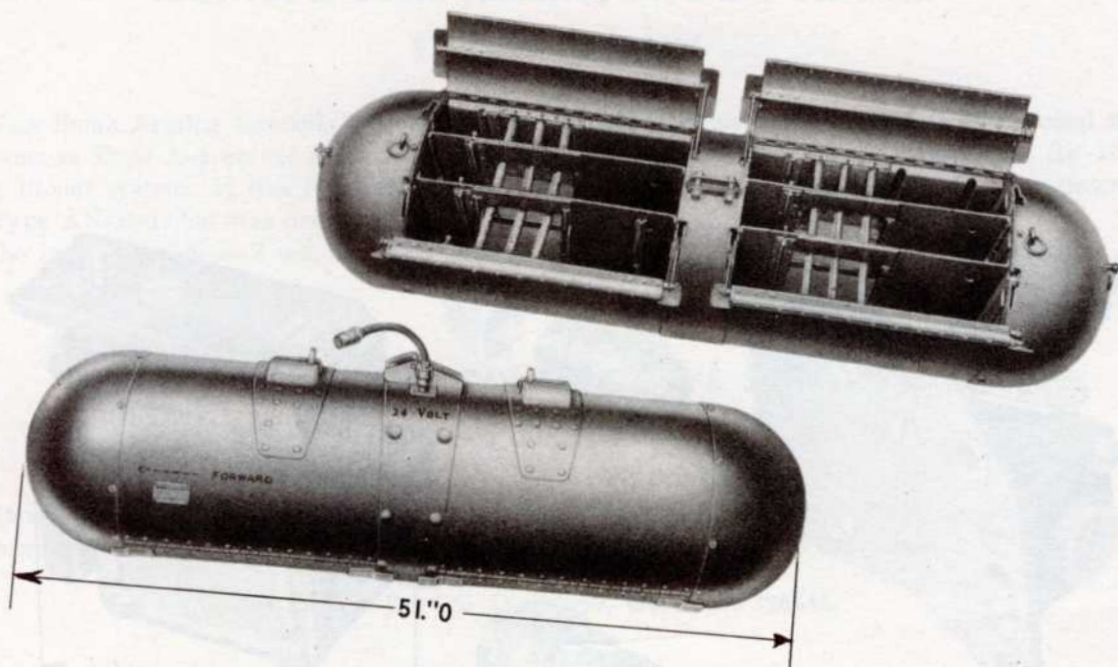
The Mark 9 is now used in place of the Mark 4 in magazines of aircraft carriers, where space between the top of the stowed bombs and the overheads is limited.

DIMENSIONS: approx. 17.5 x 11.1 x 2.0 inches.

WEIGHT: approx. 20.0 pounds.

BuORD DWG: Gen. Arr. 388523.

CONTAINER, BOMB, MARK 3 AND MOD.



CONTAINER, BOMB, MARK 3 (12- AND 24-VOLT)

STOCK Nos. 3-C-1793 (12-VOLT); 3-C-1795 (24-VOLT)

THE Bomb Container Mark 3 carries and expels twenty 3-inch Antiaircraft Bombs Mark 34. The cylindrical container is divided into 2 equal compartments, each of which is divided vertically into 3 sections. The outboard sections carry 3 bombs each and the center sections, 4 bombs each. Four doors on the bottom of each container are unlatched by solenoids and the bombs are ejected by springs.

The Bomb Container Mark 3 is placed on Bomb Racks Mark 41 or Mark 50 and Mods. like a bomb, with the forward end toward the

nose of the airplane. When the container is carried on the Bomb Rack Mark 41, an electrical lead, terminating near the container, is required.

The container may be used in either glide or horizontal bombing against formations of aircraft. It is designed to withstand a pullout of 5 Gs and will eject bombs in dives at all angles.

DIMENSIONS: approx. 51.0 x 15.0 x 15.0 inches.

WEIGHT: approx. 45 pounds.

BuORD DWGS: SK. 90957, Gen. Arr. 328433.

CONTAINER, BOMB, MARK 3, MOD. 1 (12- AND 24-VOLT)

STOCK Nos. 3-C-1797 (12-VOLT) 3-C-1799 (24-VOLT)

THE Bomb Container Mark 3, Mod. 1 is the same as the Mark 3 except that it has fittings on the top so that it may be attached to Bomb Racks Mark 35 and 51 and Mods. as well as to Marks 41 and 50 and Mods.

PUBLICATIONS: O.T.I. V-34-43, O.C.L. V-45-42.

BuORD DWG: Gen. Arr. 330848.

CONTROL, BOMB ARMING, TYPES A-1, B-1, SF-4, SF-10



CONTROL, BOMB ARMING, TYPE A-1 (24-VOLT)

STOCK No. 3-C-1805

THE Bomb Arming Control Type A-1 allows selective arming of bombs. It was formerly known as Type AN-A-1 but was destandardized when the improved AN-A-2 was adopted. It is an electrically-operated locking device that retains or releases one fuze-arming wire of the bomb as the latter is released from the airplane so that the bomb drops with the fuze in either an armed or safe condition as desired.

The control is mounted on the bomb rack or shackle or on the adjacent structure of the airplane. It may also be mounted on the horizontal beam of a British universal bomb carrier, by a slide assembly which is part of the bomb arming control. The power connection

is made through an electrical connector receptacle AN-3102-10S-2P or AN-10066-10S-2P. Gaskets and sealing compound are provided at joints and openings in the aluminum case of the control to guard against entrance of moisture.

This control is identical to the Bomb Fuzing Control Box Type SF-4 except for the name plate.

DIMENSIONS: approx. 3.3 x 3.0 x 1.5 inches.

WEIGHT: approx. 0.6 pound.

PUBLICATIONS: O.P. 1084, AAF Tech. Order 11-5-33.

BuORD DWGS: SK. 108774, Gen. Arr. 376032.

CONTROL, BOMB ARMING, TYPES A-1, B-1, SF-4, SF-10

CONTROL, BOMB ARMING, TYPE B-1 (12-VOLT)

STOCK No. 3-C-1807

THE Bomb Arming Control Type B-1 is the same as Type A-1 except that it operates on a 12-volt system. It was formerly known as Type AN-B-1, but was destandardized when the improved AN-B-2 was adopted. Except

for the name plate, Type B-1 is identical to the Bomb Fuzing Control Box Type SF-10. Types B-1, SF-10, and AN-B-1 are interchangeable.

BuORD DWGS: SK. 108775, Gen. Arr. 376032.

BOX, BOMB FUZING CONTROL, TYPE SF-4 (24-VOLT)

STOCK No. 3-B-1970

BOMB Fuzing Control Box Type SF-4 is the former name for the Bomb Arming Control

Type A-1. The only difference between the 2 devices is in the nameplate.

BuORD DWGS: SK. 90959, Gen. Arr. 328446.

BOX, BOMB FUZING CONTROL, TYPE SF-10 (12-VOLT)

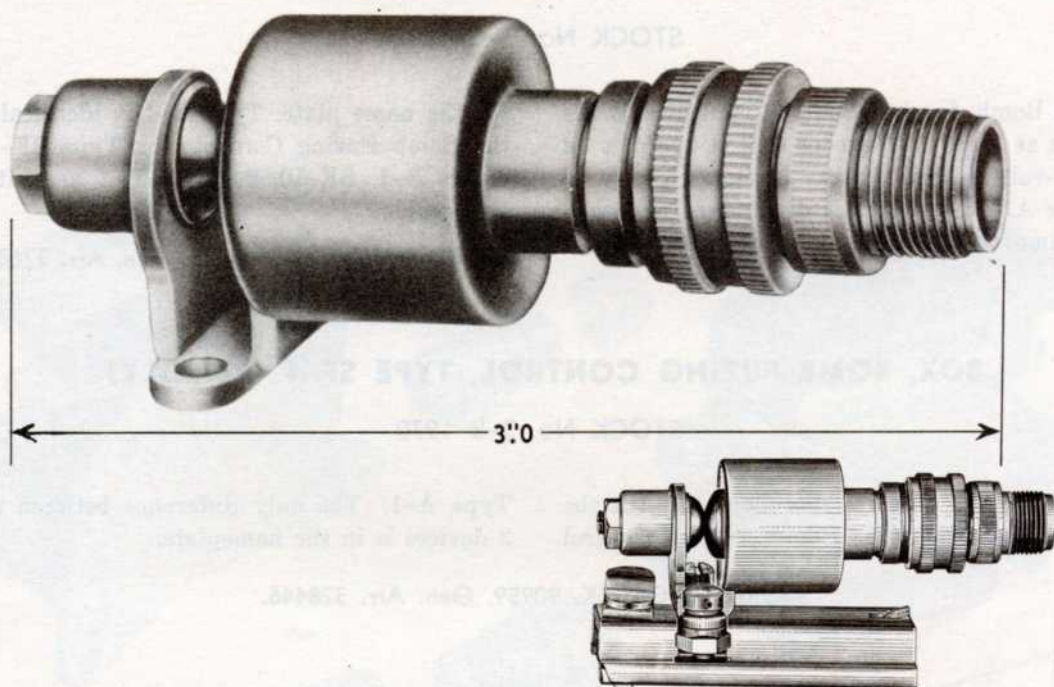
STOCK No. 3-B-1977

BOMB Fuzing Control Box Type SF-10 is the former name for the Bomb Arming Control Type B-1. The only difference between the 2 devices is in the nameplate. The unit is con-

structed the same as the Bomb Arming Control Type A-1 or the Bomb Fuzing Control Box Type SF-4 but uses a 12-volt solenoid.

BuORD DWGS: SK. 90960, Gen. Arr. 328446.

CONTROL, BOMB ARMING, TYPE AN-A-2 AND AN-B-2



CONTROL, BOMB ARMING, TYPE AN-A-2 (24-VOLT)

STOCK No. 3-C-1806

THE Bomb Arming Control Type AN-A-2 permits selective arming of bombs. It is a cylindrical dust-tight, moisture-proof, cadmium-plated unit containing a solenoid and plunger, and a spring-loaded movable retainer. This retainer is held in contact with a fixed base to hold the swivel loop or plate of the fuze arming wire.

The control is mounted on the bomb shackle or bomb rack or on the adjacent structure of the airplane. When used on an airplane equipped with slide mounting rails, the unit must be equipped with a Bomb Arming Control Mount AAF Type A-1.

Power Connection is made through an electrical connector receptacle AND-10066-10S-2P and an electrical connector plug AN3106-10S-2S.

Latest models are now equipped with 2 mounting legs instead of one as depicted.

DIMENSIONS: approx. 3.0 x 1.2 x 1.2 inches.

WEIGHT: approx. 0.3 pound.

PUBLICATIONS: O.P. 1084, AAF Tech. Order 11-5-47.

BuORD DWG: Outline 388383.

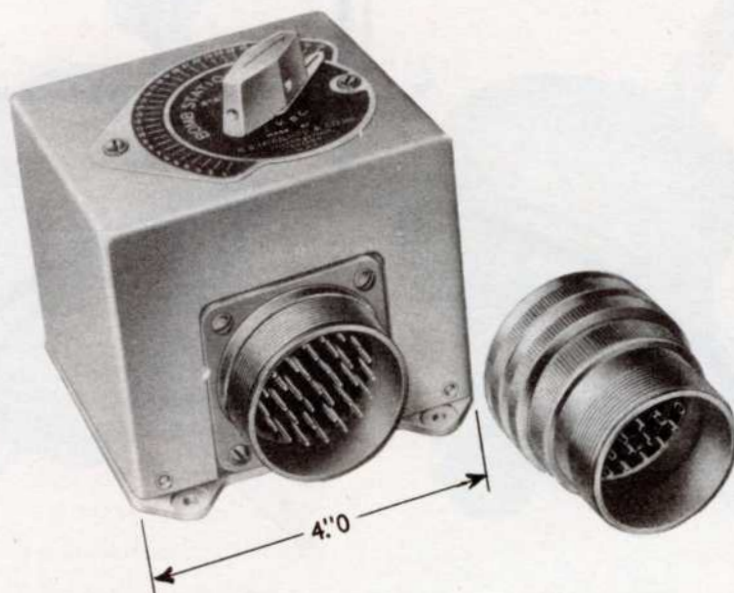
CONTROL, BOMB ARMING, TYPE AN-B-2 (12-VOLT)

STOCK No. 3-C-1808

THE Bomb Arming Control Type AN-B-2 is

the same as Type AN-A-2 except it operates on 12-volt current.

DISTRIBUTOR, STATION, TYPE SD-1



DISTRIBUTOR, STATION, TYPE SD-1

STOCK No. 3-D-685

THE Station Distributor Type SD-1 (Army-Navy Nomenclature: Bomb Station Distributor AN-A-2) is a relay-actuated stepping switch that distributes electrical impulses from a single-wire intervalometer or bomb release switch to the selected bomb station or stations in a bomb release system. The distributor is housed in an aluminum alloy box with a knob-pointer and dial on top and a male electrical connector receptacle, AN-3102-36-15P on the side. The unit operates on a 24-volt circuit and is used primarily in airplanes in which bombs are stowed horizontally or carried under the wings.

The impulses are distributed by setting the knob to any one of 32 positions. Each pointer position corresponds to a bomb station. Train release may be made of any group in numerical sequence, or, of all connected stations, by setting the knob-pointer to the numbered position on the dial corresponding to the first

station in the desired train release.

Used together, the station distributor and the single-wire intervalometer are similar in operation to the combination of a multi-wire intervalometer and a bombardier's jack panel. In case of a hang-up on one bomb station, the distributor makes it possible to release subsequent bomb stations.

The Station Distributor Type SD-1 is operated with Bomb Rack Release Type A-2 or Bomb Shackle Release Type N-2 or equivalent releasing mechanism. It may also be used to operate releasing solenoids in bomb shackles of the Mark 3 and Mark 4 types, and releasing solenoids in electrically-operated Bomb Racks.

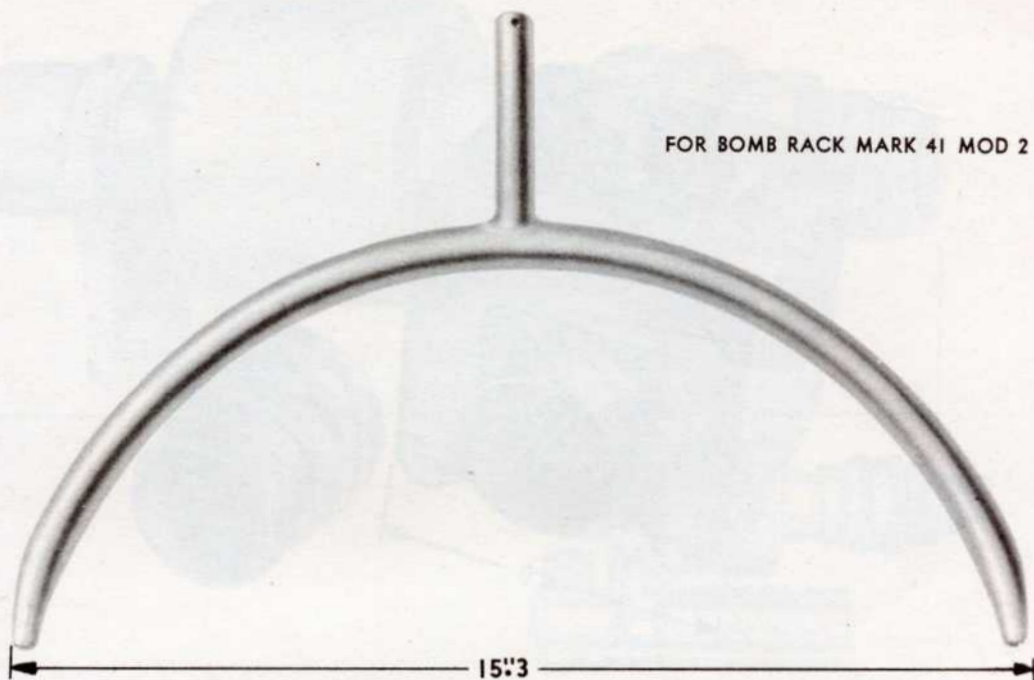
DIMENSIONS: approx. 4.0 x 4.8 x 4.8 inches.

WEIGHT: approx. 2.3 pounds.

PUBLICATION: O.T.I. V-23-43.

MFR'S DWG: P. R. Mallory & Co., B-134131.

FORK, ENLARGED STEADYING, FOR BOMB RACK, MARK 41 AND MOD. AND MARK 50 AND MODS.



FORK, ENLARGED STEADYING, FOR BOMB RACK, MARK 41, MOD. 2

STOCK No. 3-F-525

THE Enlarged Steadying Fork for Bomb Rack Mark 41, Mod. 2 is used when carrying Aircraft Depth Bombs Mark 17, weighing 325 pounds. It prevents the bomb from swaying or vibrating during flight.

The fork consists of a semi-circular piece of metal welded to an attaching arm 3.2 inches long which fits into the bomb rack. The radius

of the semi-circular portion of the fork is 7.5 inches.

This fork replaces only the forward fork of the Bomb Rack Mark 41, Mod. 2.

DIMENSIONS: approx. 15.3 x 9.7 x 0.7 inches.

WEIGHT: approx. 2.2 pounds.

BuORD DWG: 329893.

FORK, ENLARGED STEADYING, FOR BOMB RACKS, MARK 50 AND MODS.

STOCK No. 3-F-530

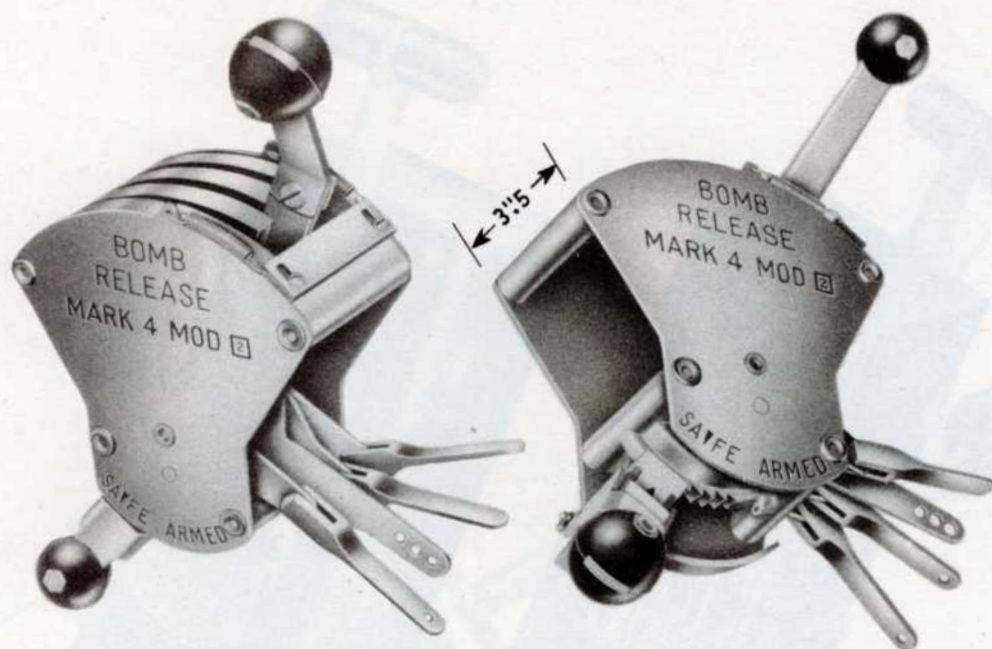
THE Enlarged Steadying Fork for Bomb Rack Mark 50, and Mods. has the same shape and dimensions as the fork used on Bomb Rack Mark 41, Mod. 2. The attaching arm, however, is threaded with a $\frac{5}{8}$ -inch—18 N.F.—2 thread for mounting in the forward fork position of Bomb Racks Mark 50 and Mods. The

arm also has a machined groove on top in place of the hole drilled in the attaching arm of the fork used on the Bomb Rack Mark 41, Mod. 2.

PUBLICATION: O.C.L. V-80.

BuORD DWG: 329892.

HANDLE, BOMB RELEASE, MARK 4 MODS.



HANDLE, BOMB RELEASE, MARK 4, MOD. 2

STOCK No. 3-H-627

THE Bomb Release Handle Mark 4, Mod. 2 is used for arming and releasing 2 bomb racks of the type usually mounted under the wing of an airplane. It is also used with bomb shackles of the Mark 3 and Mark 4 types.

The assembly consists of a metallic case with a knob-headed release handle extending from the top and a separate arming handle at the base. These handles activate levers in the case to which the bomb rack cables are attached.

By shifting the release handle into either one of 2 slots, labeled SELECTIVE L, or SELECTIVE R, the selective lever connected to the left or right bomb rack is engaged.

When the handle is shifted into the center or SALVO slot, both selective levers are engaged and the bomb racks release simultaneously.

The arming handle is normally set in the SAFE position. Sidewise pressure on the lever shifts it to the ARMED position. This pulls the attached cable, removing the wires from the fuzes and arming both bombs.

DIMENSIONS: approx. 10.5 x 6.0 x 3.5 inches.

WEIGHT: approx. 2.5 pounds.

PUBLICATION: O.C.L. V-12-13.

BuORD DWGS: SK. 108611, Gen. Arr. 375602.

HANDLE, BOMB RELEASE, MARK 4, MOD. 3

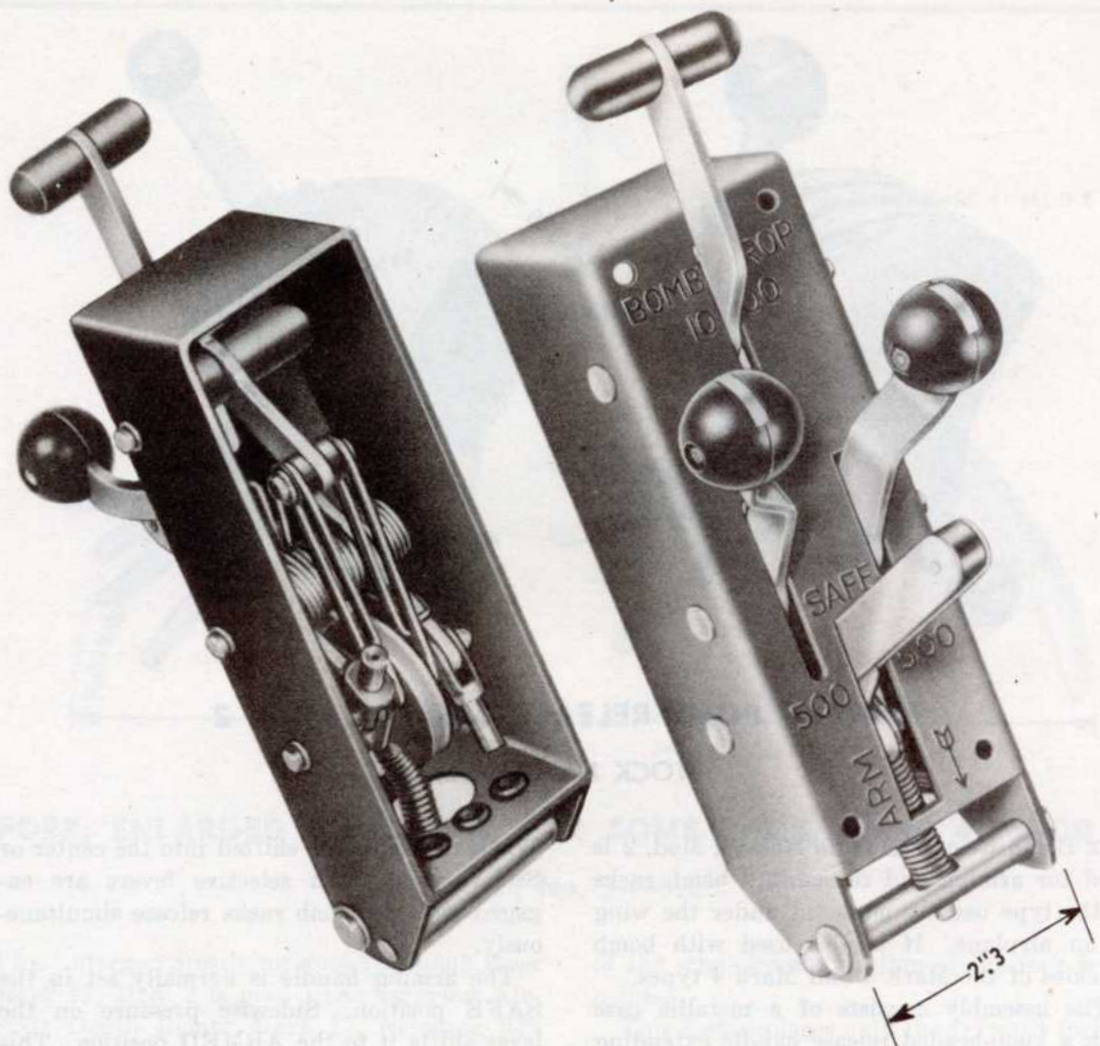
STOCK No. 3-H-628

THE Bomb Release Handle Mark 4, Mod. 3 is like the Mark 4, Mod. 2 except that the arming lever is mounted on a 3-toothed detent

instead of the 7-toothed detent used in the Mark 4, Mod. 2.

BuORD DWGS: SK. 108612, Gen. Arr. 375602.

HANDLE, BOMB RELEASE, MARK 29



HANDLE, BOMB RELEASE, MARK 29

STOCK No. 3-H-632

THE Bomb Release Handle Mark 29 manually arms and releases, selectively or in salvo, 2 Bomb Racks Mark 35 and Mods. or Mark 42. These racks are usually mounted under the wing of an airplane.

The mechanism is enclosed in a metal box, with the right and left hand release levers extending from slots in the middle of the face plate. A downward pull on either lever releases the cable-connected bomb rack by raising the cable clevis and pulling the cable. For salvo release, a tee-handle at the top of

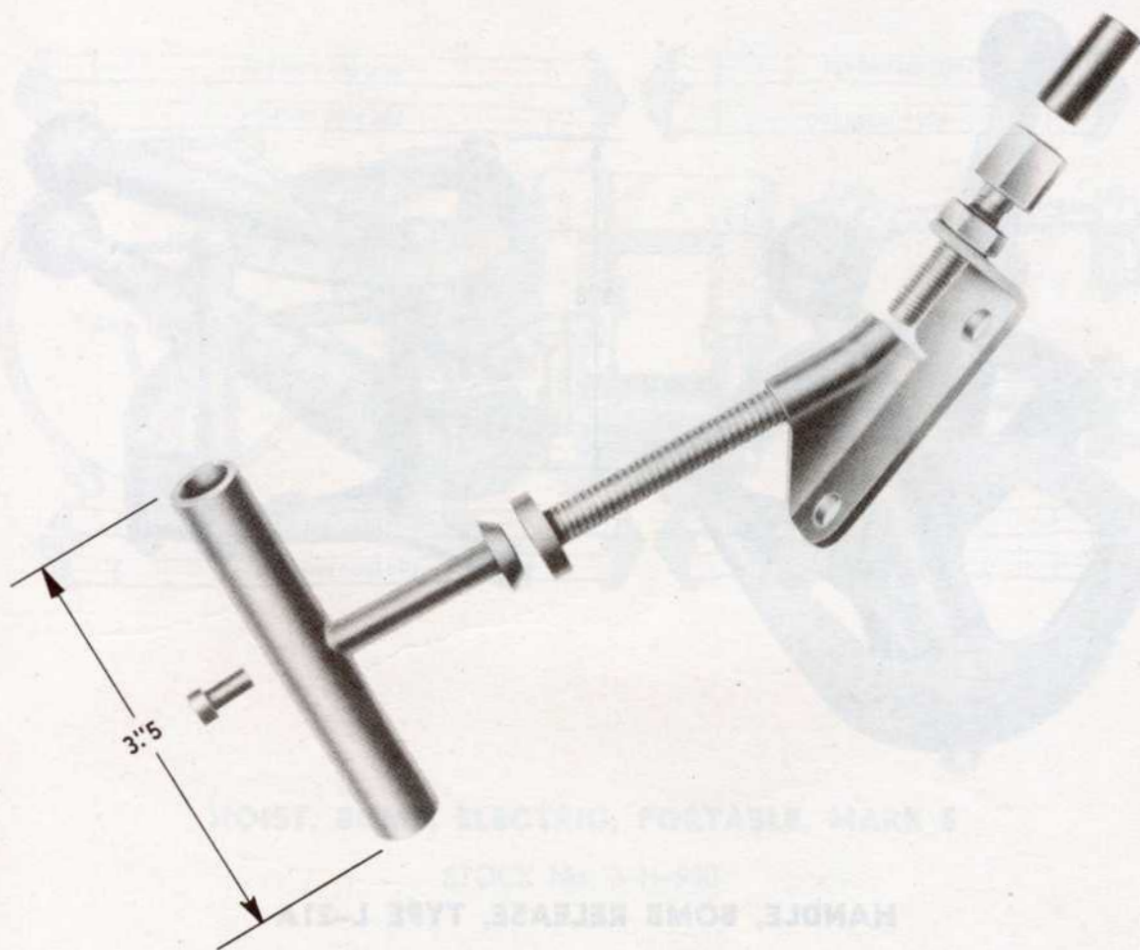
the case is pulled downward, engaging both cable clevises and releasing the 2 bombs. These spring-loaded levers return to the normal position when released. The snap-lever at the bottom, normally carried in the SAFE position, arms both bombs when shifted downward to the ARM position.

DIMENSIONS: approx. 8.9 x 3.0 x 2.3 inches.

WEIGHT: approx. 1.2 pounds.

BuORD DWG: Gen. Arr. 147590.

HANDLE, BOMB RELEASE, TYPE A-3



HANDLE, BOMB RELEASE, TYPE A-3

STOCK No. 3-H-635

THE Bomb Release Handle Type A-3 mechanically releases one bomb from a bomb rack or shackle. The handle is a simple pull release but without a spring return.

The assembly is made up of a tee-grip, a 2-hole mounting bracket and a tubular cable guide welded at an acute angle. The end of the release cable is soldered to a small sleeve on the tee-grip.

A pull on the tee-grip pulls the cable through the guide and actuates the release mechanism of the bomb rack or shackle.

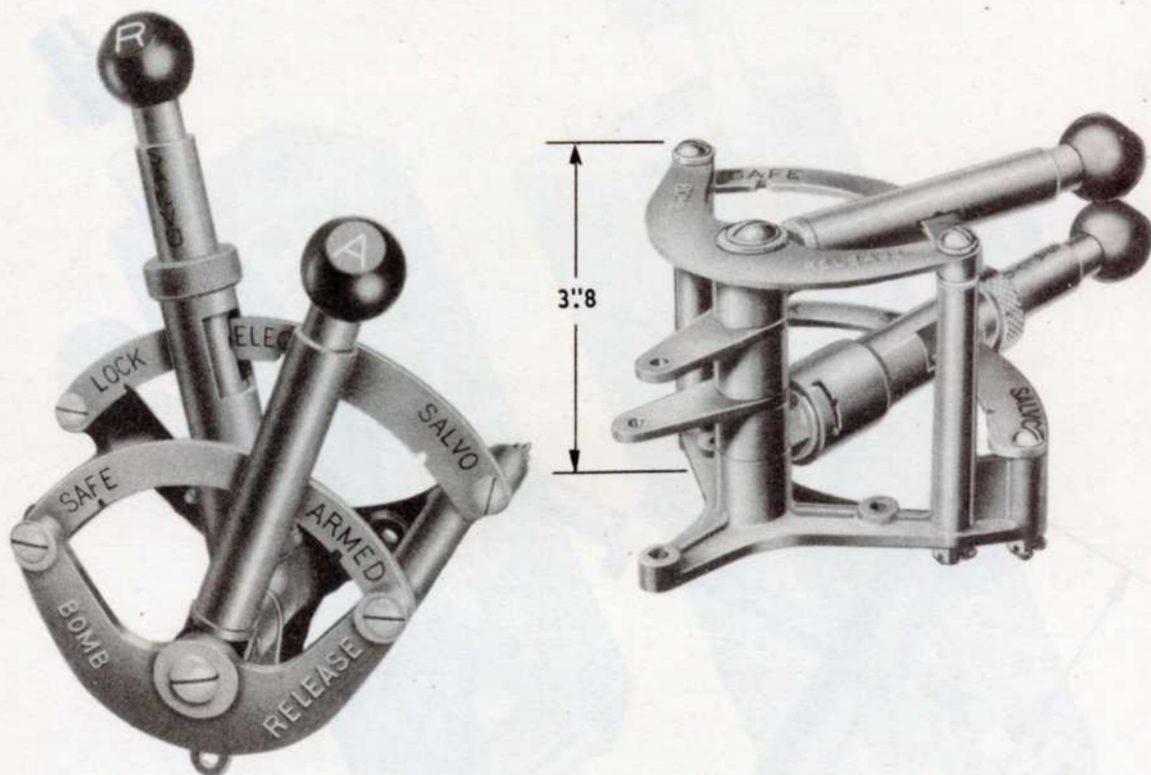
DIMENSIONS: approx. 6.7 x 3.5 x 3.0 inches.

WEIGHT: approx. 0.3 pound.

AAF DWG: 0159268.

BuORD DWGS: Gen. Arr. 155981, 155982.

HANDLE, BOMB RELEASE, TYPE L-21A



HANDLE, BOMB RELEASE, TYPE L-21A

STOCK No. 3-H-645

THE Bomb Release Handle Type L-21A is used to release flares, or to manually operate the Bomb Rack Mark 48. It consists of 2 U-shaped supporting brackets, separated by spacers, and to which are bolted arc-shaped, notched, arming and releasing sectors. A bolt passes through the assembly at the center of the brackets and acts as a common shaft for an arming handle (marked A) and a releasing handle (marked R). Both the arming and releasing handles are spring-loaded.

Pressing down on the top of handle A releases the arming lever so that it may be moved to either the SAFE or ARMED position where it is held by a spring-actuated key engaged in a notch. Pressing down on the

top of handle R disengages the releasing lever so that it may be moved to either the LOCK or SALVO positions. The releasing lever however, can be kept from moving to the SALVO position by a salvo-lock sleeve, or barrel, which is turned by a knurled collar. When the collar is turned so that a red notch coincides with SALVO on the lever, the handle may be moved to the salvo release position.

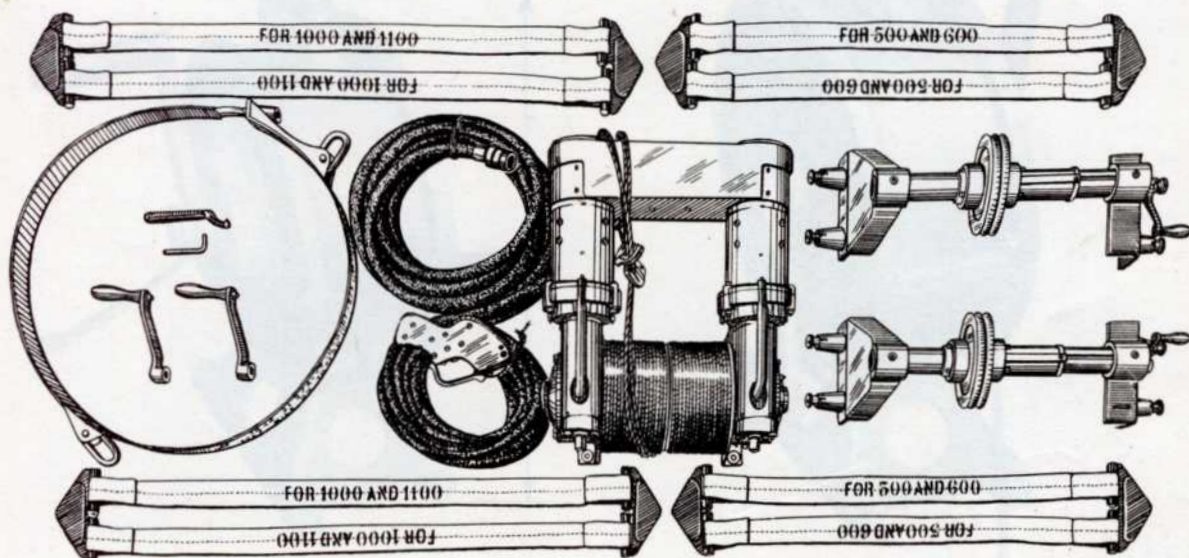
The assembly may be adapted to left or right hand operation by reversing the sectors and salvo lock-sleeve.

DIMENSIONS: approx. 8.6 x 5.0 x 3.8 inches.

WEIGHT: approx. 1.5 pounds.

BuORD DWG: Gen. Arr. 308078.

HOIST, BOMB, ELECTRIC, PORTABLE, MARK 5



HOIST, BOMB, ELECTRIC, PORTABLE, MARK 5

STOCK No. 3-H-980

THE Portable Bomb Hoist Mark 5, an electrically-driven double cable hoist, normally used with slings, is designed to raise a bomb or torpedo into position for attaching to a bomb rack. The hoist consists of 2 side members, connected across their ends, and enclosing two 24-volt DC motors. Each motor operates an independent unit made up of a double solenoid switch, slip clutch, planetary gear reduction unit, and a worm gear unit which turn a cable drum. The 2 drums, which wind 33 feet of cable, are set end-to-end between the side members. Each drum is independently controlled by a pistol grip control pendant which contains push buttons and the control lead to the motors. Each motor operates as long as the push button is depressed. Both motors turn together in the direction for lifting when

the switch is set in the UP position, or in the direction for lowering when the switch is set in the DOWN position.

In an emergency, or during adjustment of the slip clutches, each worm gear and drum may be turned manually with a lifting crank. The hoist load is limited by the clutches to 2000 pounds; a greater load causes the clutches to slip. The hoisting cable is guided by 2 bracket sheave assemblies.

DIMENSIONS (hoist only): approx. 19.3 x 18.5 x 9.0 inches.

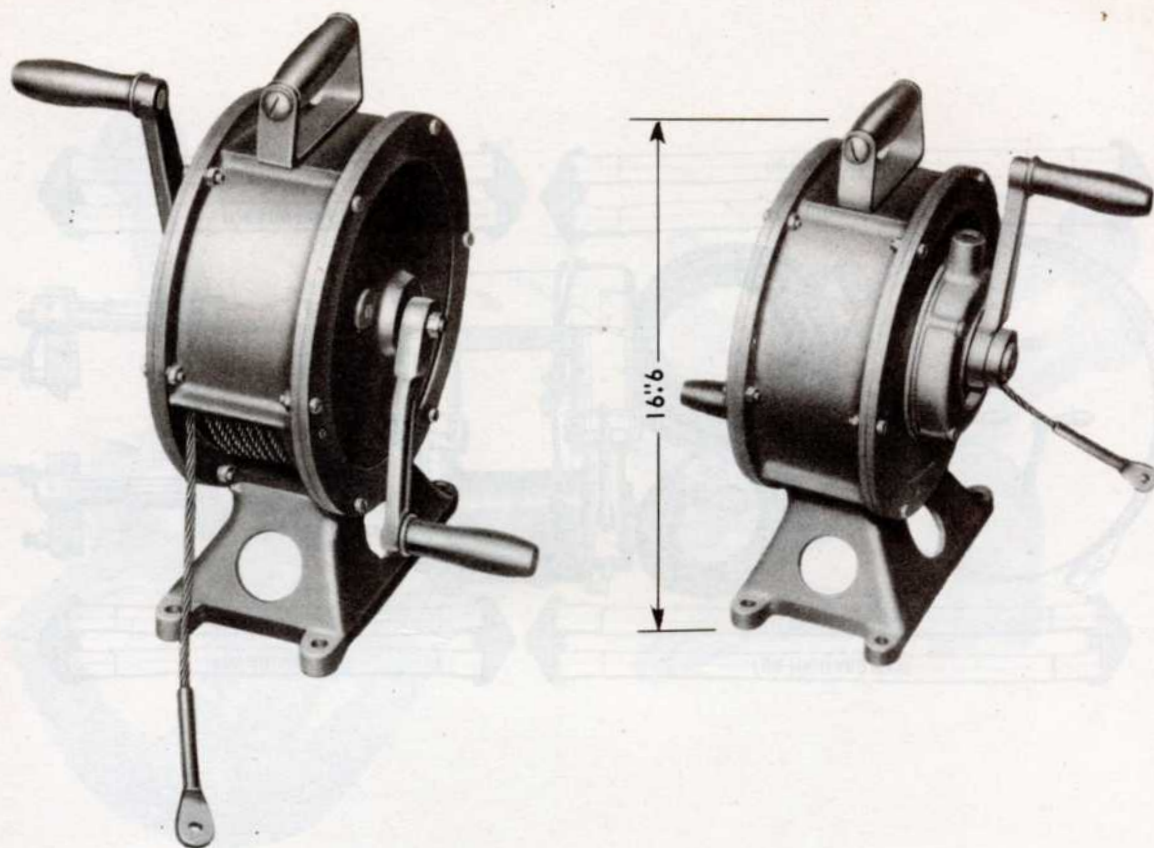
WEIGHT: approx. 150.8 pounds.

LIFTING CAPACITY: approx. 2000 pounds.

LIFT: approx. 33 feet.

BuORD DWG: Gen. Arr. 327980.

HOIST, BOMB, PORTABLE, MARK 6



HOIST, BOMB, PORTABLE, MARK 6

STOCK No. 3-H-1034

THE Portable Bomb Hoist Mark 6 is used primarily for loading bombs on large patrol airplanes. The hoist is mounted on top of the wing above the bomb rack and the cable is run through the wing and rack.

The unit consists of a cylindrical cast aluminum alloy frame that houses a gear train and brake mechanism. At the top is a carrying handle. The base is drilled for 4 mounting bolts. A main shaft, extending through the side plates, supports a grooved cable drum which is free to turn on the shaft. Attached to one end of the shaft is a ratchet crank which turns the shaft and gearing. Another crank, not directly attached to the shaft, operates the brake side of the hoist.

Turning either or both cranks in a clock-

wise direction (viewed from the brake side of the hoist) raises the load which is then held in position by an automatic friction-type load brake. The load is lowered by turning the brake crank in the opposite direction. This releases friction in the brake sufficiently to allow the suspended load to be lowered by its own weight, but only while the crank is being turned.

DIMENSIONS: approx. 16.6 x 11.2 x 16.2 inches.

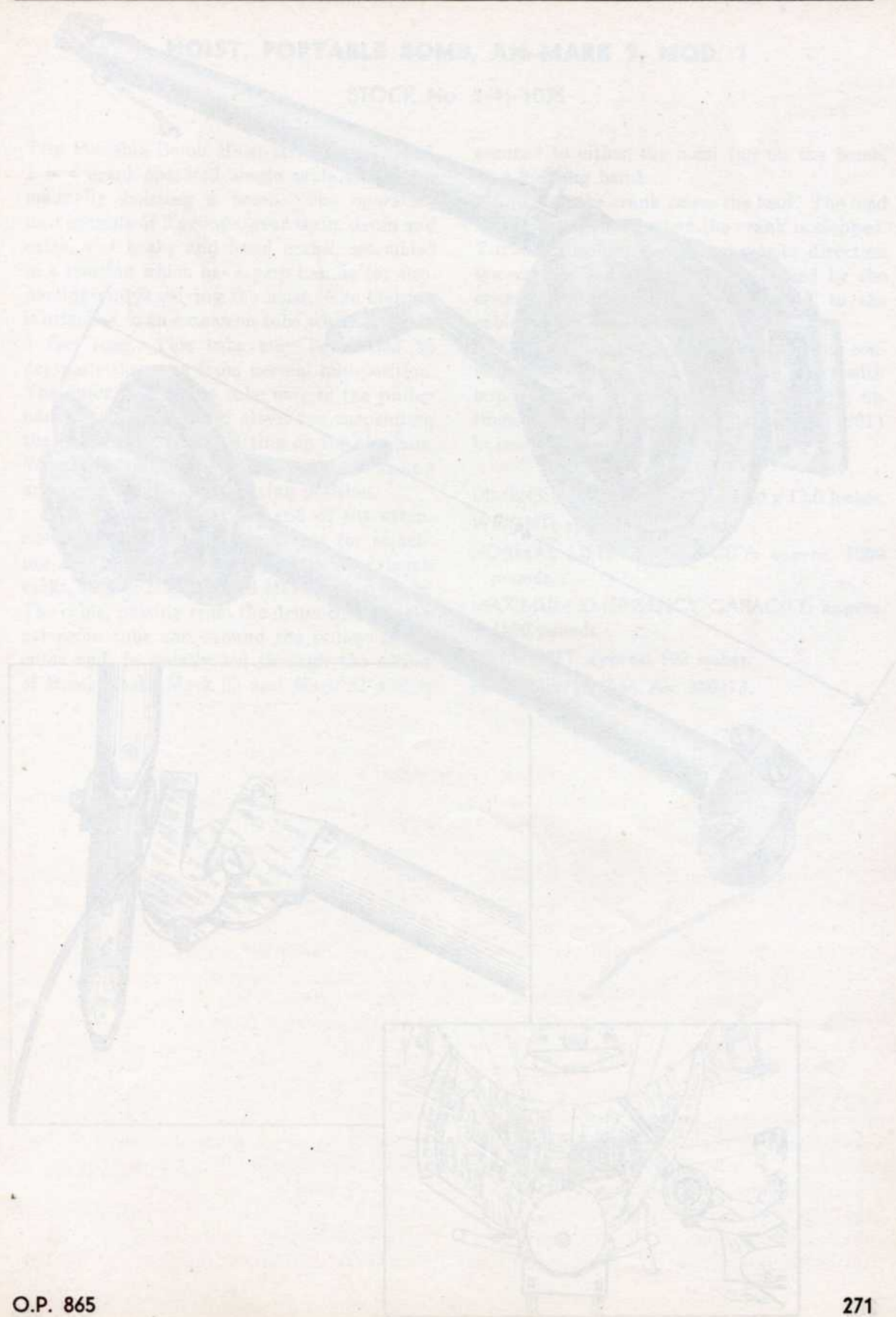
WEIGHT: approx. 35.4 pounds.

LIFTING CAPACITY: approx. 1000 pounds.

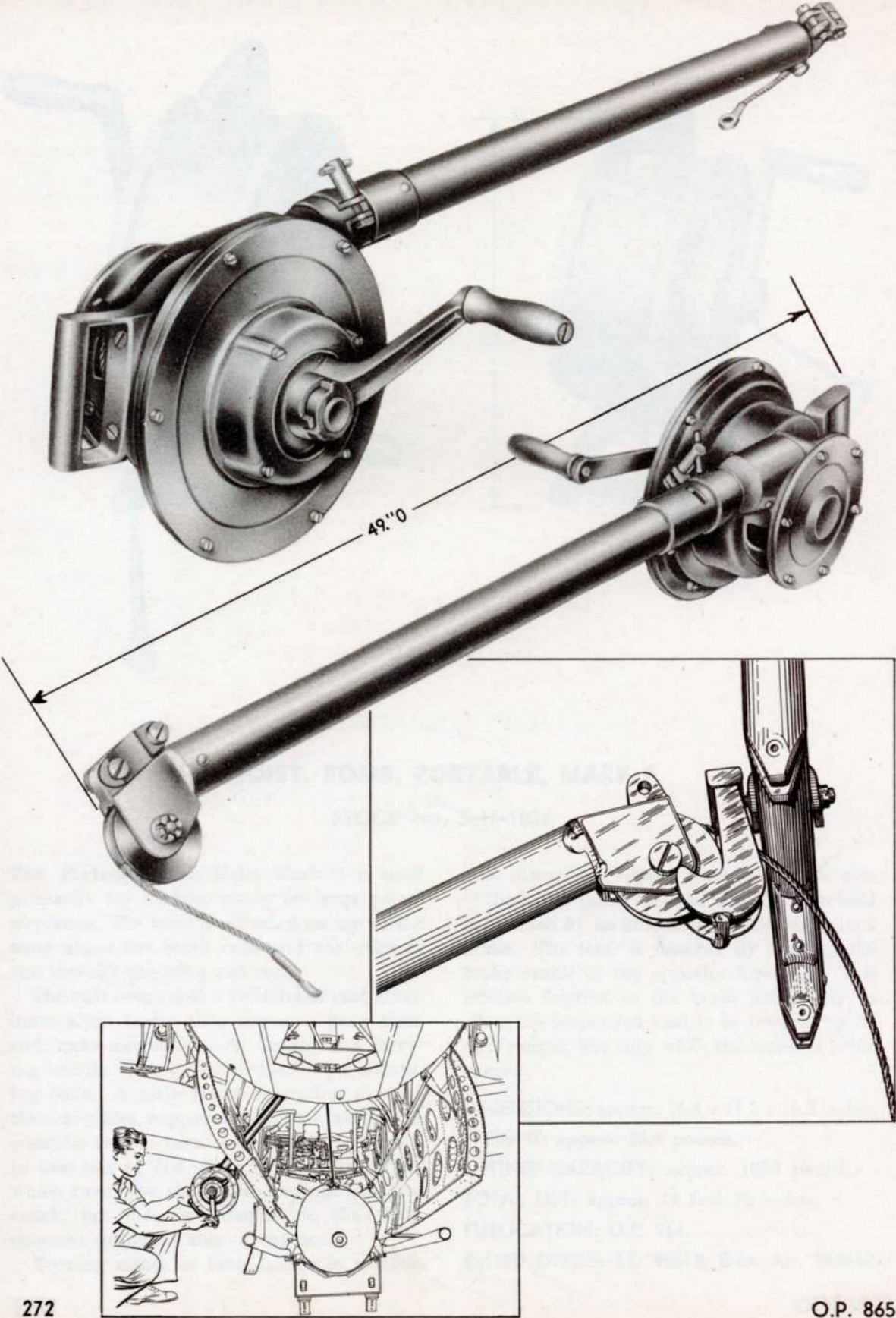
TOTAL LIFT: approx. 14 feet 10 inches.

PUBLICATION: O.P. 961.

BuORD DWGS: SK. 90616, Gen. Arr. 284440.



HOIST, PORTABLE BOMB, AN-MARK 7, MOD. 1



HOIST, PORTABLE BOMB, AN-MARK 7, MOD. 1

HOIST, PORTABLE BOMB, AN-MARK 7, MOD. 1

STOCK No. 3-H-1035

THE Portable Bomb Hoist AN-Mark 7, Mod. 1 is a crank-operated single cable device for manually hoisting a bomb. The operating unit consists of 3 groups, gear train, drum and cable, and brake and hand crank, assembled in a housing which has a grip handle for supporting and steadying the hoist. The housing is attached to an extension tube which is about 3 feet long. This tube may be turned 90 degrees either way from normal mid-position. The outer end of the tube carries the pulley housing and the swivel clevis for suspending the entire hoist from a fitting on the airplane. When thus suspended, the hoist may be swung around to a suitable operating position.

Pulley trunnions, at the end of the extension tube, provide another means for attaching the hoist to the side brackets of bomb racks, such as Mark 35 and Mark 51 and Mods. The cable, passing from the drum through the extension tube and around the pulley at the outer end, is usually led through the center of Bomb Racks Mark 35 and Mark 51 and is

secured to either the hoist lug on the bomb, or a hoisting band.

Turning the crank raises the load. The load remains suspended when the crank is stopped. Turning the crank in the opposite direction lowers the load at a speed controlled by the operator. Tension must be applied to the cable to wind or unwind.

The original Bomb Hoist Mark 7 was converted to Mark 7, Mod. 1 (Ordalt 1264) with improvements in the extension tube and fittings. Conversion Set (Stock No. 3-C-1881) is issued for this purpose.

DIMENSIONS: approx. 49.0 x 15.0 x 13.0 inches.

WEIGHT: approx. 36.0 pounds.

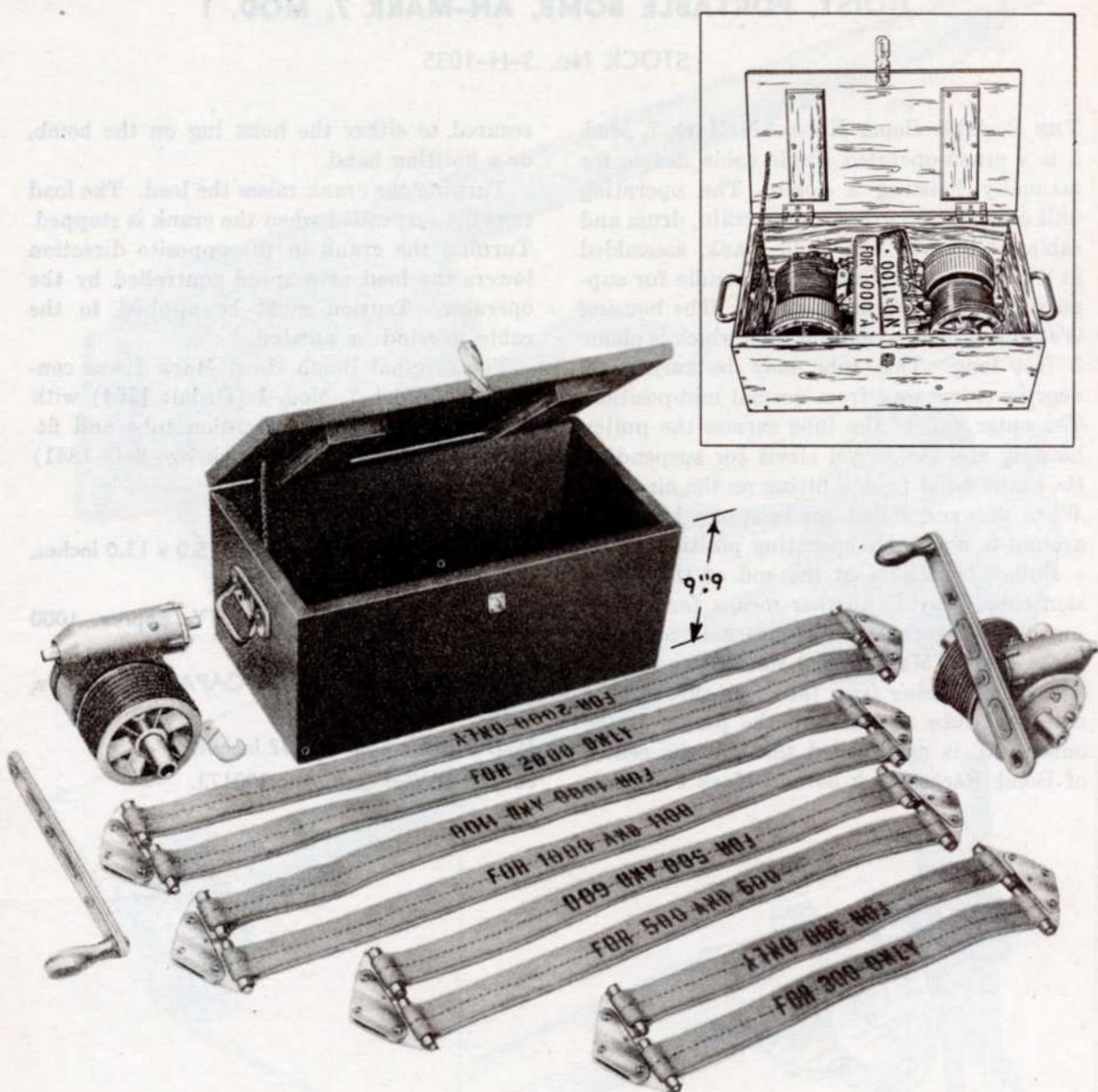
NORMAL LIFTING CAPACITY: approx. 1000 pounds.

MAXIMUM EMERGENCY CAPACITY. approx. 1600 pounds.

TOTAL LIFT: approx. 102 inches.

BuORD DWG: Gen. Arr. 300173.

HOIST, BOMB, PORTABLE, TYPE C-3



HOIST, BOMB, PORTABLE, TYPE C-3

STOCK No. 3-H-1075

THE Portable Bomb Hoist Type C-3 is used for lifting bombs to a bomb rack, and for other hoisting purposes. The drum, worm assembly, and brake mechanism are contained in an aluminum housing closed by a housing cap. One end of the main shaft, which carries the drum gear, extends through the housing cap. The other end of the shaft extends

through, and supports, the drum. During hoisting, these extended shaft ends are mounted on a frame installed inside the airplane. The ends of the worm gear assembly, which operate at right angles to the main shaft, are also extended. A crank handle of adjustable length may be attached to either end of the assembly.

HOIST, BOMB, PORTABLE, TYPE C-3 (CONT'D)

HOIST, BOMB, PORTABLE, TYPE C-3 (Cont'd)

A left hand hoist may be made into a right hand hoist, or vice versa by bolting the cable terminal on the proper side of the shaft, and winding the cable on the drum accordingly.

The worm assembly is issued as a spare part; AAF Part No. 35B3429 or BuORD Stock List No. 3-W-1405.

For early models not equipped with a brake; the brake assembly, AAF Dwg. 40A6792, may be ordered separately from the Army.

The hoist assembly, as issued, consists of 2 winches, a left hand and a right hand, each with cables attached; 2 bomb hoist handles; and 1 each of the following nylon webbing bomb slings, with a yoke assembly at each end:

BOMB SLING ASSEMBLY	BuORD STOCK NO.	AAF PART NO.
300-pound	3-S-3365	42G2343-1
500-pound	3-S-3365-100	42G2343-2
1100-pound	3-S-3365-150	52G2343-3
2000-pound	3-S-3365-200	42G2343-4
4000-pound (Type A-1)	3-S-3364	42G2343-5

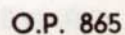
A special 200-pound Bomb Sling AAF Part No. 40G5318 may also be used with this hoist.

Two bomb Hoist Assemblies Type C-3 (4 winches) and 2 extra Bomb Slings Type A-1 are needed to hoist a 4000-pound bomb.

DIMENSIONS: approx. 21.5 x 11.3 x 9.9 inches.

WEIGHT: approx. 68.5 pounds.

MAXIMUM LIFT: approx. 16 feet.



INTERVALOMETER, BOMB RACK, MARK 2, AND MODS.

INTERVALVOMETER, BOMB RACK, MARK 2 (12-VOLT)

STOCK No. 3-I-500

THE Bomb Rack Intervalometer Mark 2 is a device which times the release of bombs so that they strike the target surface at predetermined ground spacing. The intervalometer, which is placed in the electrical bomb release system, initiates electric impulses to the release units at the rate of 2 to 8 impulses per second, and operates a maximum of 15 bomb racks or shackles. It is a multi-wire type.

A left hand knob on the face of the intervalometer operates the timing switch; a right hand knob operates the ON-OFF switch. An amber ready-light on the face of the instrument shows when the instrument is ready to

release bombs in train. Markings on both dials are phosphorescent.

The timing switch is calibrated for bomb spacing in feet (20 feet to 200 feet) on the intervalometer case, and for ground speed in knots (100 knots to 200 knots) on the movable circular dial plate.

The electrical connector receptacle is AN3102-20-4P.

DIMENSIONS: approx. 4.2 x 6.4 x 9.5 inches.

WEIGHT: approx. 7.5 pounds.

PUBLICATION: O.P. 1099.

BuORD DWGS: SK. 91132, Gen. Arr. 349546.

INTERVALOMETER, BOMB RACK, MARK 2, MOD. 1 (24-VOLT)

STOCK No. 3-I-510

THE Bomb Rack Intervalometer Mark 2, Mod. 1 is identical to the Mark 2 except that it operates on a 24-volt circuit. A further

difference is that Mark 2, Mod. 1 units with a serial number above 753 have a hold-in relay.

BuORD DWGS: SK. 91132, Gen. Arr. 349546.

INTERVALOMETER, BOMB RACK, MARK 2, MOD. 2 (24-VOLT)

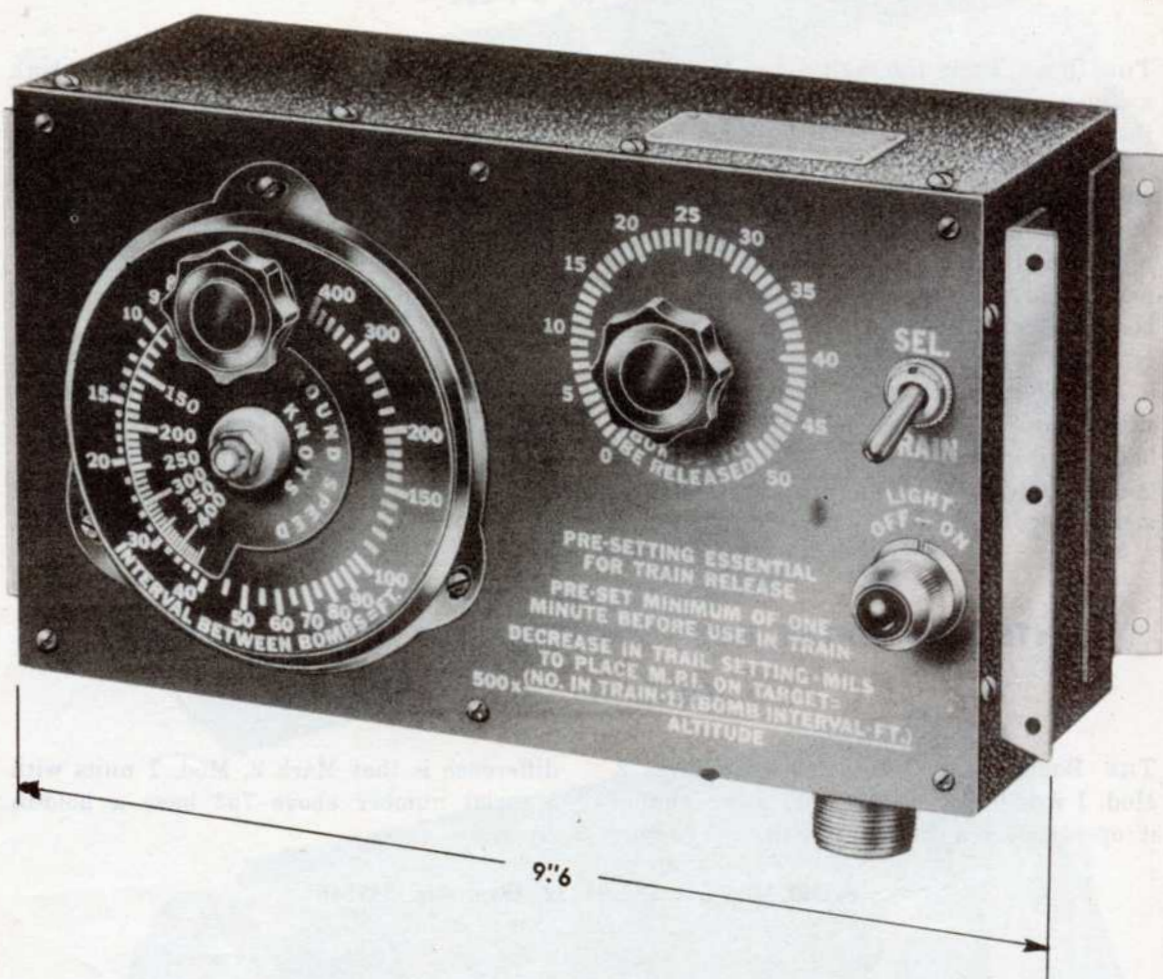
STOCK No. 3-I-512

THE Bomb Rack Intervalometer Mark 2, Mod. 2 is basically the same as the Mark 2, Mod. 1 except that the Mark 2, Mod. 2 has an adjustable pilot light switch which regulates the glow of the pilot light lamp. The Mark 2,

Mod. 2, which replaces the Mark 2, Mod. 1, also has a hold-in relay and some manufacturing improvements in its internal operating parts. These parts, however, are interchangeable with the Mark 2, Mod. 1.

BuORD DWGS: SK. 108893, Gen. Arr. 349560.

INTERVALOMETER, BOMB RACK, TYPE K-2



INTERVALOMETER, BOMB RACK, TYPE K-2

STOCK No. 3-I-540

THE Bomb Rack Intervalometer Type K-2 is an electrical timing device placed in the electrical bomb release system which sends out electrical impulses to the release units to obtain a desired spacing of bombs. It is a single wire type and initiates electrical impulses to the release units at the rate of 2 to 20 per second.

The left hand dial determines the spacing between the impact points of bombs on the target surface. The right hand dial determines how many single bombs up to 50 will be released. A snap switch at the upper right

side of the front plate permits selective or train releasing of bombs. An amber light on the lower right side of the front plate shows when the instrument is ready for use. Markings on the intervalometer are phosphorescent.

On the underside of the intervalometer is a 3-pin standard electrical receptacle AN3102-14S-7P.

DIMENSIONS: approx. 9.6 x 4.5 x 5.7 inches.

WEIGHT: approx. 5.2 pounds.

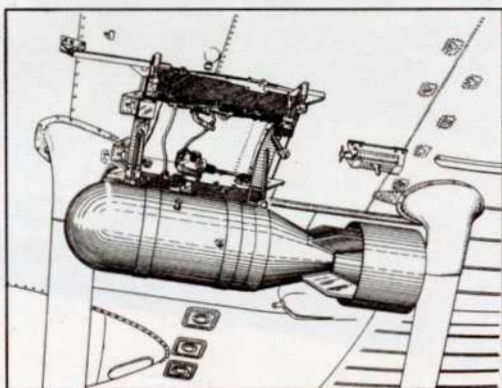
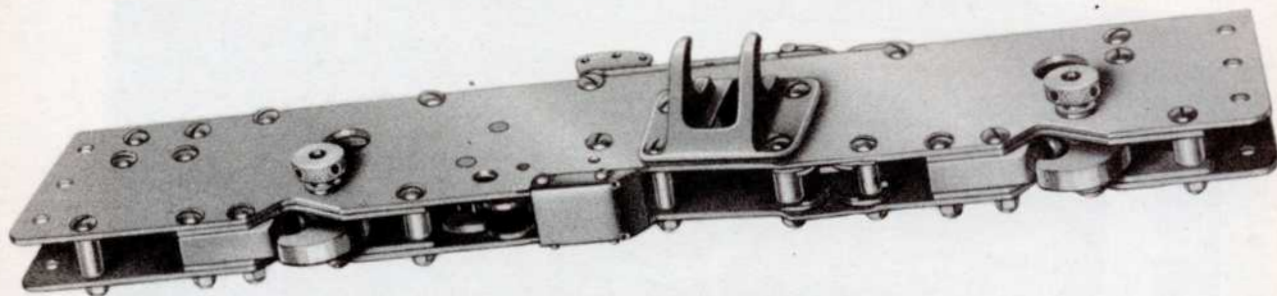
PUBLICATION: O.P. 1053.

BuORD DWG: Gen. Arr. 301078.

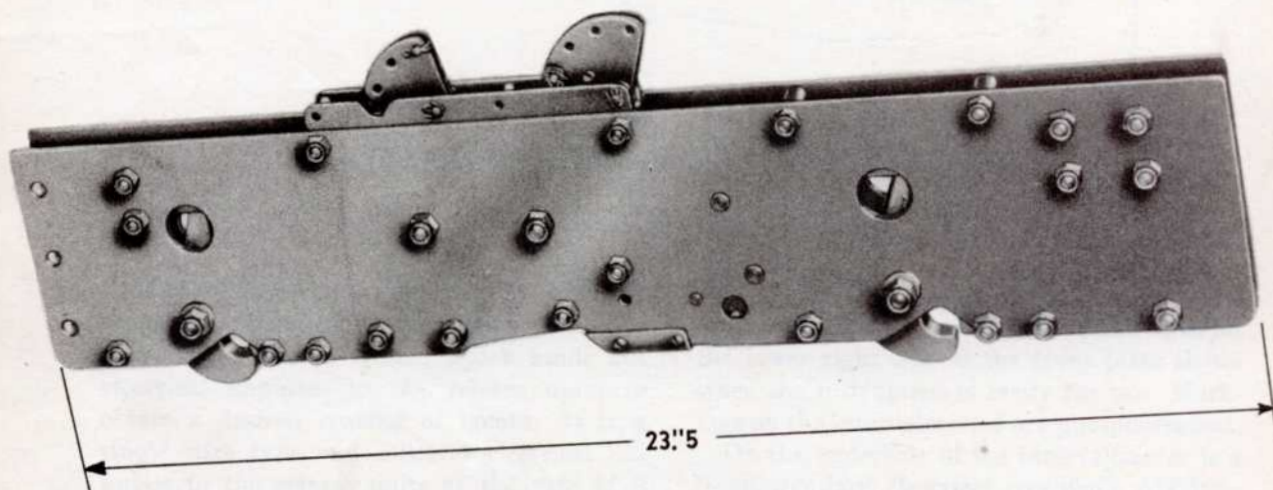
NOTES



RACK, BOMB, MARK 35, MODS. 4, 5, AND 6



MARK 35 MOD 4



RACK, BOMB, MARK 35, MODS. 4, 5, AND 6 (CONT'D)

RACK, BOMB, MARK 35, MOD. 4

STOCK No. 3-R-139

THE Bomb Rack Mark 35, Mod. 4 carries a single bomb or smoke screen tank weighing between 100 and 1000 pounds. The rack consists of 2 metal plates enclosing a releasing mechanism which operates 2 bomb suspension hooks.

The releasing mechanism may be operated manually by Bomb Release Handle Mark 4 and Mods. or electrically by a Solenoid Mark 17, Mod. 3 (24-volt) or Mark 17, Mod. 4 (12-volt), mounted between the side plates at the top of the rack.

A hoisting fitting is bolted on the left side plate. The Portable Bomb Hoist Mark 7, Mod. 1 is attached to this fitting when a bomb is hoisted from the left side. A knurled thumb screw, located on the outboard side of the rack, is connected to each suspension hook to latch the hooks independently.

Bomb Fuzing Control Boxes SF-4 (24-

volt), which are identical to the Bomb Arming Control Type A-1 and SF-10 (12-volt) are being supplied for electric selective arming of the racks. The boxes are secured to the side of the rack or to the airplane structure near the rack.

This rack was formerly known as Bomb Rack Mark 35 until Ordalt No. 911, providing an improved lever type of arming mechanism, made it Mark 35, Mod. 4. Except for the side plates, it is identical with Bomb Rack Mark 35, Mod. 5.

Bomb Rack Mark 51, Mod. 6 and Mod. 7 will replace the Bomb Rack Mark 35 series.

DIMENSIONS: approx. 23.5 x 6.0 x 2.4 inches.

WEIGHT: approx. 18.0 pounds.

PUBLICATIONS: O.P. 579, Ordalt 911, and O.T.I. V-1-43.

BuORD DWGS: SK. 58377, Gen. Arr. 272613.

RACK, BOMB, MARK 35, MOD. 5

STOCK No. 3-R-143

THE Bomb Rack Mark 35, Mod. 5 is like the Mark 35, Mod. 4 except that it is used for right hand instead of left hand hoisting. The hoisting bracket is attached through holes drilled in the right side plate on the Mark 35, Mod.

5 instead of in the left side plate as on the Mark 35, Mod. 4.

This rack is being replaced by Bomb Racks Mark 51, Mod. 6 and Mod. 7.

BuORD DWGS: SK. 58378, Gen. Arr. 272613.

RACK, BOMB, MARK 35, MOD. 6

STOCK No. 3-R-146

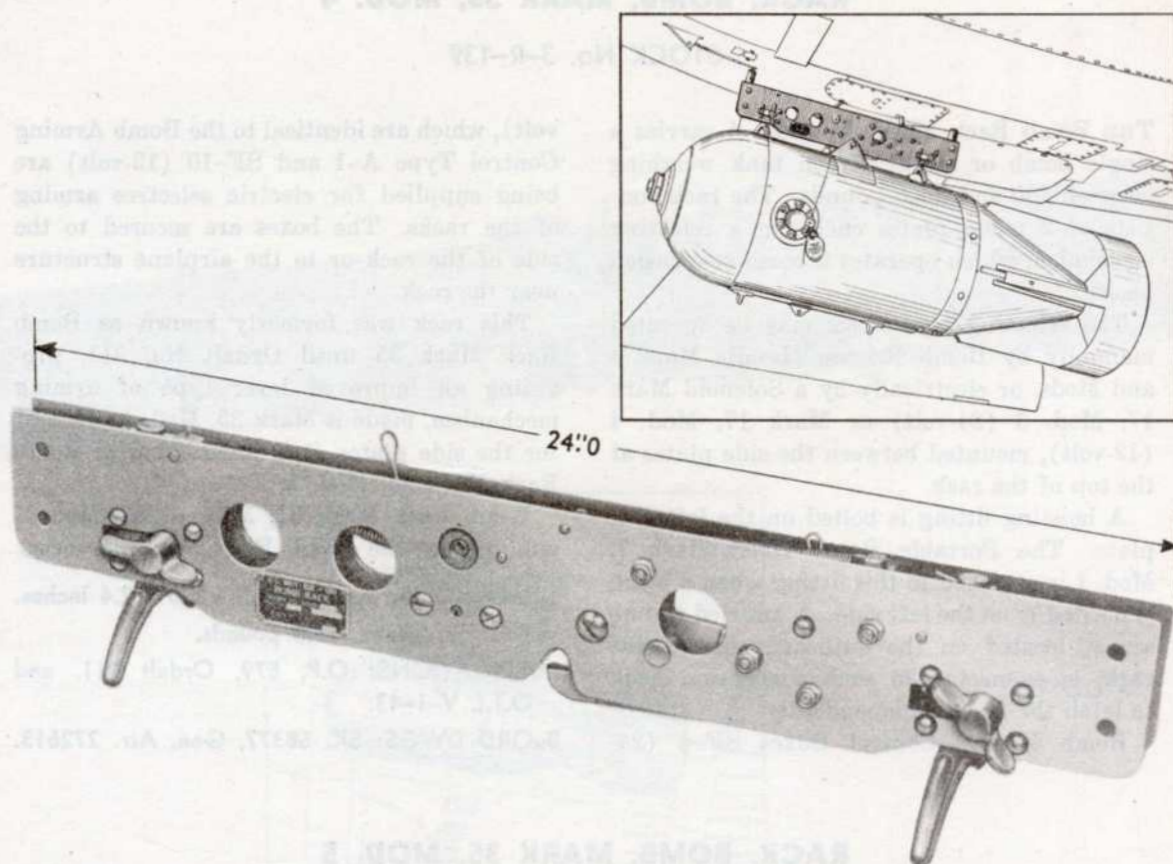
THE Bomb Rack Mark 35, Mod. 6 is like Mark 35, Mod. 4 and Mod. 5 except that it is used for center hoisting instead of left or right hand hoisting. It is used primarily on the PBV series airplanes. A slot in the rack permits the hoisting cable of the Portable

Hoist Mark 6, placed on the wing directly above the rack, to pass through a slot in the center of the rack.

This rack is being replaced by Bomb Racks Mark 51, Mod. 6 and Mod. 7.

BuORD DWGS: SK. 58379, Gen. Arr. 267621.

RACK, BOMB, MARK 41, MOD. 2



RACK, BOMB, MARK 41, MOD. 2

STOCK No. 3-R-158

THE Bomb Rack Mark 41, Mod. 2 carries either a single lug bomb weighing up to 325 pounds, a Bomb Container Mark 3, a Bomb Rack Mark 43 or Mark 47, a Tow Target Container Mark 1, Mod. 1, or any similar unit designed for single lug suspension and not exceeding the weight limit.

The rack, which is usually installed under the wing of the airplane, consists of 2 metal side plates with a single suspension hook in the middle and adjustable steadying fork at each end. The suspension hook is operated by a geared cam which is released when a pull is exerted on the releasing wire leading out of the top of the rack. A thumb screw for latching the suspension hook is located on one side of the rack.

The releasing mechanism is usually operated by a Bomb Release Handle Mark 4 or Mods. installed in the cockpit of the airplane.

This rack, which is used principally in VF, VSB, VO and VS class aircraft, was formerly known as Mark 41, Mod. 1 until Ordalt No. 912, providing an improved lever-type arming mechanism, made it Mark 41, Mod. 2. It is now being replaced by Bomb Rack Mark 50 and Mods.

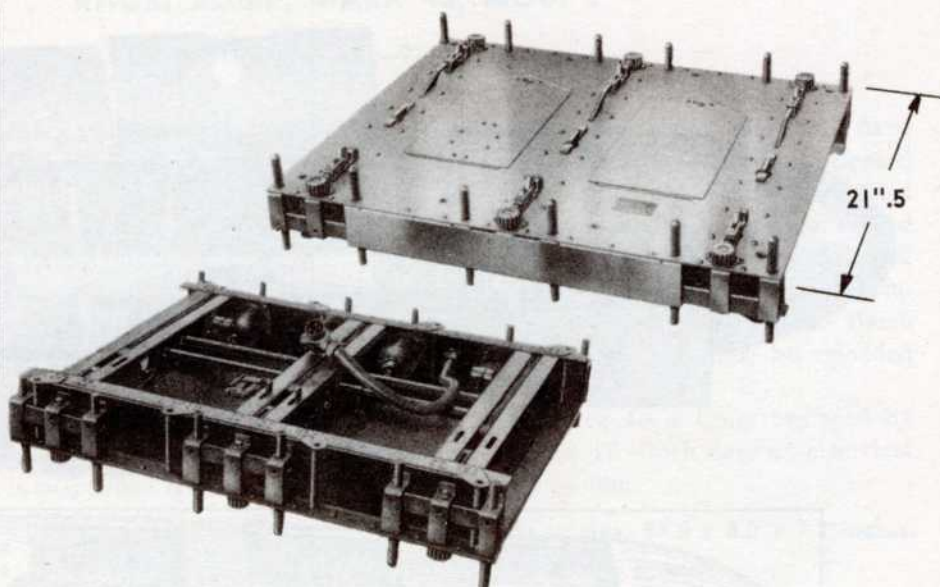
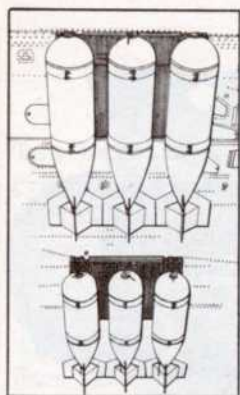
DIMENSIONS: approx. 24.0 x 4.8 x 5.0 inches.

WEIGHT: approx. 10.1 pounds.

PUBLICATIONS: Ordalt No. 912; O.P. 580; O.C.L. V-5-43, V-18-43, V-8-42.

BuORD DWGS: SK. 9057, Gen. Arr. 273162.

RACK, BOMB, MARK 42



RACK, BOMB, MARK 42 (12-VOLT)

STOCK No. 3-R-161

THE Bomb Rack Mark 42 (12-volt) carries three 100-pound double lug bombs of the service or practice type. It consists of 3 parallel racks, joined at the ends by 2 steel channels and at the bottom by a rectangular plate. Each of the 3 component racks has adjustable steadying chocks at each end.

The rack may be installed in the wings or fuselage. Two or 4 racks are used in aircraft of the VPB and VTB classes. Selective releasing of the bombs is accomplished electrically by 3 Solenoids Mark 13 (12-volt). Salvo releasing is accomplished manually by Bomb Release Handle Mark 29. All bombs

on one rack are armed simultaneously, either manually by a bomb release handle, or electrically by means of Solenoid Mark 13, Mod. 1, (12-volt). Both the Arming Solenoid Mark 13, Mod. 1 and the Releasing Solenoid Mark 13 are being replaced in the Rack Mark 42 by Solenoids Mark 23, Mod. 1 (12-volt) which are capable of performing either the arming or releasing operation.

DIMENSIONS: approx. 26.5 x 21.5 x 6.5 inches.

WEIGHT: approx. 54.4 pounds.

PUBLICATIONS: O.P. 581, O.T.I. V-36-43.

BuORD DWGS: SK. 57907, Gen. Arr. 178403.

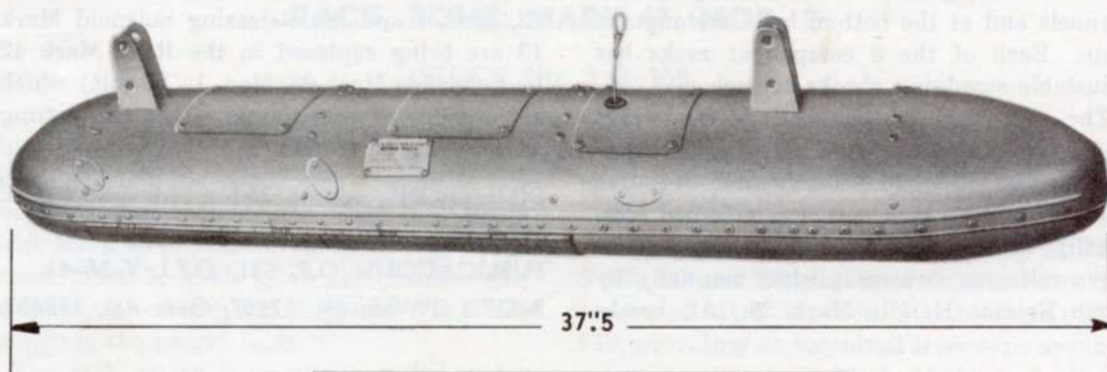
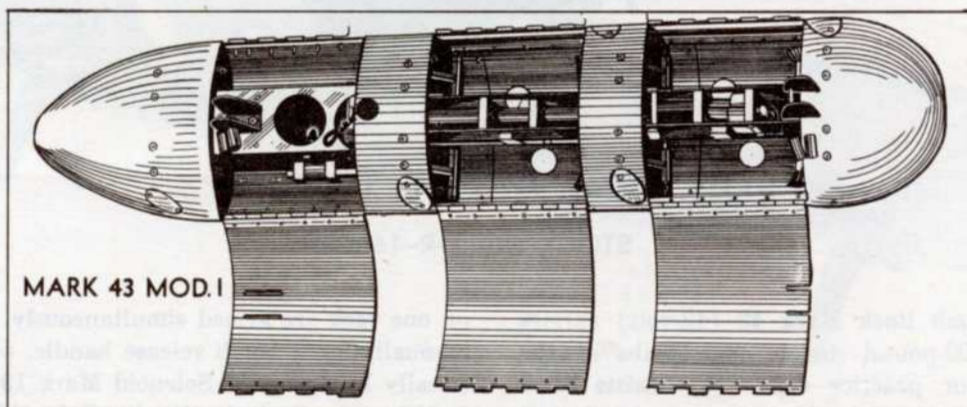
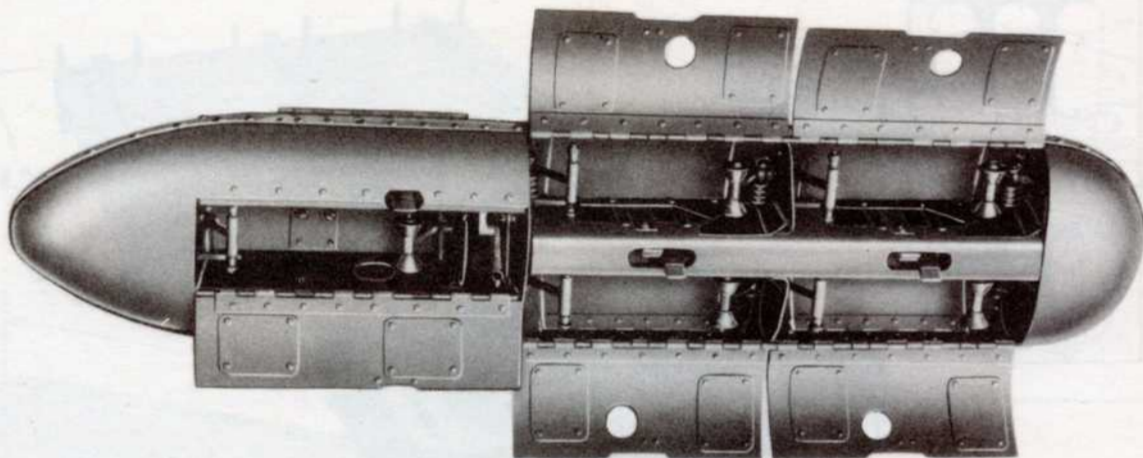
RACK, BOMB, MARK 42 (24-VOLT)

STOCK No. 3-R-162

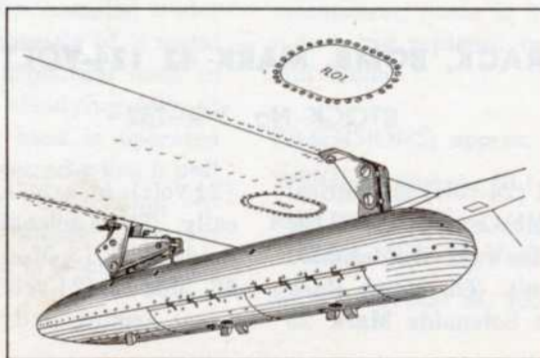
THE Bomb Rack Mark 42 (24-volt) is identical to the Mark 42 (12-volt) except that the solenoids which operate the rack are designed for use in a 24-volt circuit. The Bomb Rack Mark 42 (24-volt) uses Solenoids Mark 23

(24-volt) to arm and release bombs electrically. These solenoids are replacing the Solenoids Mark 13, Mod. 3 (24-volt) and the Mark 13, Mod. 2 (24-volt) originally used for electrical arming and releasing respectively.

RACK, BOMB, MARK 43 MODS.



MARK 43 MOD. 2



RACK, BOMB, MARK 43 MODS.

RACK, BOMB, MARK 43, MOD. 1

STOCK No. 3-R-167

THE Bomb Rack Mark 43 Mod. 1 is used primarily in practicing dive bombing. The rack is a cigar-shaped cylinder capable of carrying 5 Navy miniature practice bombs. These bombs may be either the Mark 3, Mark 4, AN-Mark 5, AN-Mark 23, or AN-Mark 43. An enclosed releasing mechanism operates door latches on 5 lower compartments, in which the bombs are placed. Three hinged doors at the top of the rack give access to the compartments for cleaning and inspection purposes. The rack is suspended from the airplane by 2 brackets spaced 22.5 inches on centers.

The release mechanism is designed for manual operation only, being actuated by a Bomb Release Handle Mark 4 or Mods. Each pull

on the release handle ejects a bomb in a fixed order of release. Bombs cannot be released selectively or in salvo. The bombs are loaded in the armed condition. They are forced against spring-loaded ejectors in the rack and are held against the ejectors when the compartment doors are shut and latched. Bomb Rack Mark 43, Mod. 1 cannot be reloaded during flight.

Bomb Rack Mark 43 is being replaced by Bomb Rack Mark 47 which uses an electrical bomb releasing system.

DIMENSIONS: approx. 37.5 x 8.0 x 7.3 inches.

WEIGHT: approx. 13.5 pounds.

PUBLICATIONS: O.T.I. V-31-43, O.P. 1074.

BuORD DWGS: SK. 57935, Gen. Arr. 182990.

RACK, BOMB, MARK 43, MOD. 2

STOCK No. 3-R-167-15

THE Bomb Rack Mark 43, Mod. 2 is like the Mark 43, Mod. 1 except that the 3 hinged doors on top of the Mark 43, Mod. 1 have been replaced by removable plates, approximately 3 inches square. The plates are secured to the rack by 4 screws. The washers on each end of the ejector arm have also been increased in size to prevent interference with

the bomb when it is expelled. The Bomb Rack Mark 43, Mod. 2 was formerly designated Bomb Rack Mark 43, Mod. 1A.

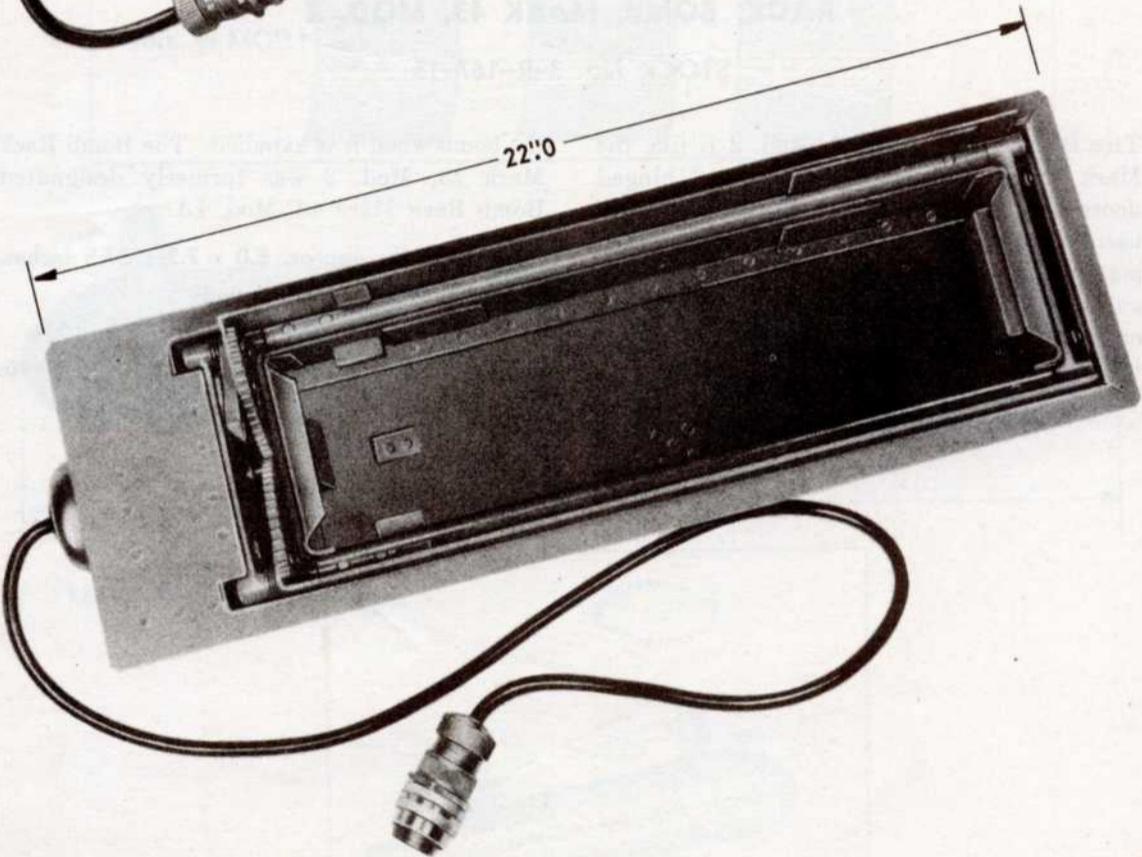
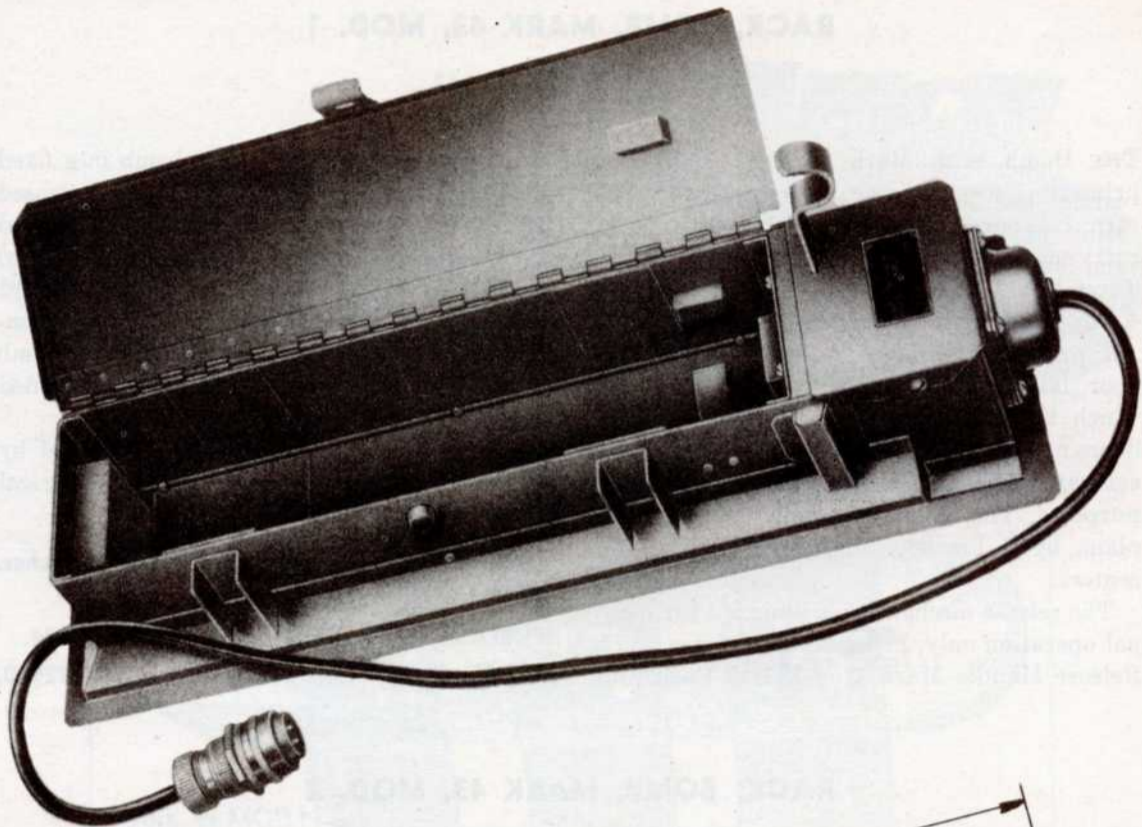
DIMENSIONS: approx. 8.0 x 7.3 x 37.5 inches.

WEIGHT: approx. 13.5 pounds.

PUBLICATIONS: O.T.I. V-31-43, O.P. 1074.

BuORD DWGS: SK. 57935, Gen. Arr. 182990.

RACK, BOMB, MARK 46, MOD. 1



RACK, BOMB, MARK 46, MOD. 1

RACK, BOMB MARK 46, MOD. 1 (12-VOLT)

STOCK No. 3-R-171-12

THE Bomb Rack Mark 46, Mod. 1 (12-volt) carries one Bomb Mark 19, Mod. 1 or one Miniature Practice Bomb Mark 39 (10-pound) and is used on VTB and VPB type airplanes for horizontal bombing practice. It consists of a rectangular sheet metal box with a top loading door and a pair of bottom doors geared to swing open together from the center. The rack is released by a Solenoid Mark 23, Mod. 1 (12-volt) located forward in a separate compartment.

The rack is designed for horizontal installation, either for flush mounting or mounting

on supports. When mounted flush, the rack is installed directly over a cutout, anywhere in the lower surface of the airplane. Two pairs of channels are provided on the sides of the rack body for mounting on supports.

This rack replaces the Bomb Rack Mark 46 (12-volt).

DIMENSIONS: approx. 22.0 x 6.3 x 3.5 inches.

WEIGHT: approx. 7.5 pounds.

PUBLICATIONS: O.T.I. V-37-43, O.C.L. V-23-43.

BuORD DWG: Gen. Arr. 328403.

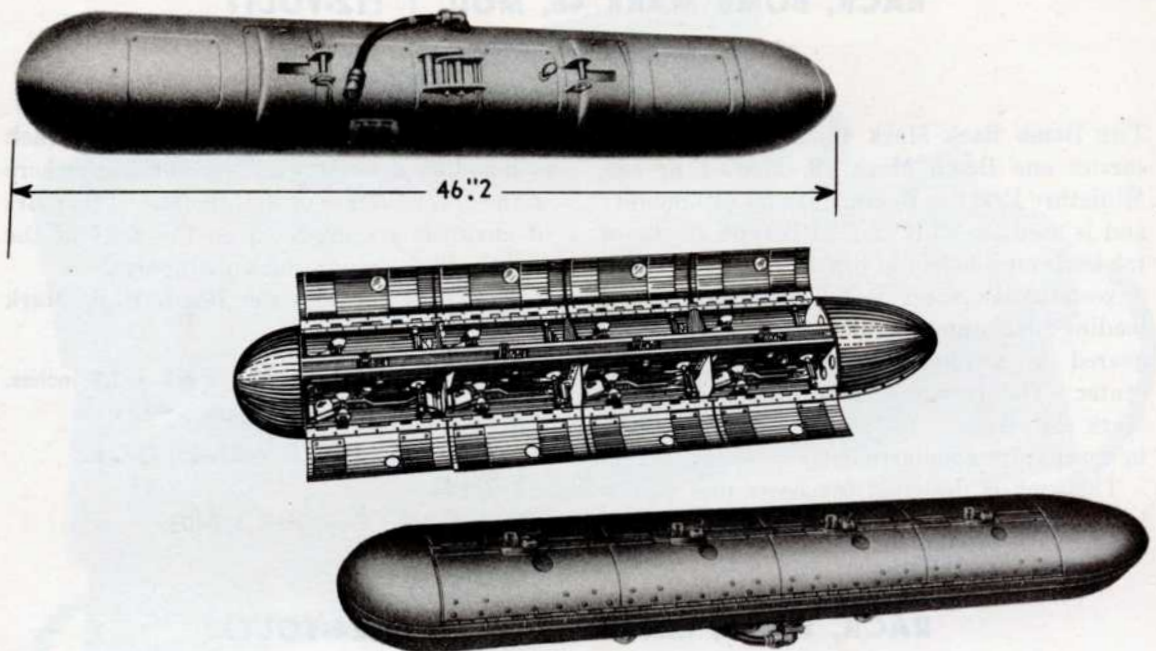
RACK, BOMB, MARK 46, MOD. 1 (24-VOLT)

STOCK No. 3-R-171-24

THE Bomb Rack Mark 46, Mod. 1 (24-volt) is the same as the Mark 46, Mod. 1 (12-volt) except that a 24-volt Solenoid Mark 23 replaces

the 12-volt Solenoid Mark 23, Mod. 1. This rack replaces the Bomb Rack Mark 46 (24-volt).

RACK, BOMB, MARK 47, MOD. 1



RACK, BOMB, MARK 47, MOD. 1 (12-VOLT)

STOCK No. 3-R-173-5

THE Bomb Rack Mark 47, Mod. 1 (12-volt) carries 8 Practice Bombs Mark 5, Mod. 1, Mark 23 or Mark 43 which are expelled one at a time. It is a cigar-shaped metal box with 8 separate bays. Ejection doors are located at the bottom of each bay and access doors are provided on top of the rack. The rack may be suspended from any one of the Bomb Racks Mark 35, Mark 41, Mark 50, or Mark 51 type.

The releasing mechanism is operated by a Releasing Solenoid Mark 24 (12-volt). As the doors are unlatched in a fixed sequence,

the bombs are expelled by a spring-loaded ejector mechanism. After each bomb has cleared the chamber, the doors close and latch.

The Releasing Solenoid Mark 24, Mod. 1 (12-volt) is interchangeable with the Solenoid Mark 24 (24-volt).

This rack replaces bomb racks of the Mark 43 type.

DIMENSIONS: approx. 46.2 x 7.2 x 7.8 inches.

WEIGHT: approx. 25.5 pounds.

PUBLICATIONS: O.T.I. V-37-43, O.P. 1082.

BuORD DWGS: SK. 108844, Gen. Arr. 300373.

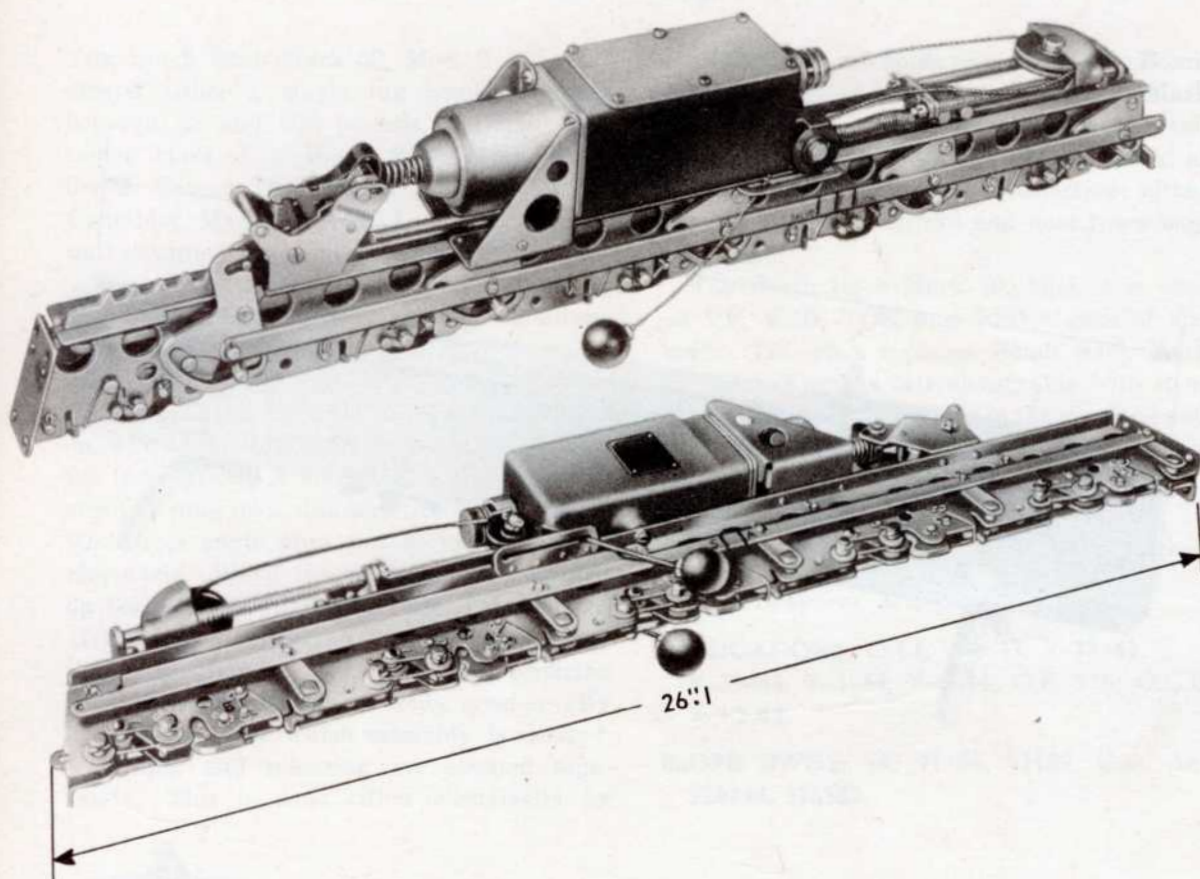
RACK, BOMB, MARK 47, MOD. 1 (24-VOLT)

STOCK No. 3-R-173-10

THE 24-volt Bomb Rack Mark 47, Mod. 1 is the same as the previously described 12-volt Bomb Rack Mark 47, Mod. 1 except that the

rack is operated by a Solenoid Mark 24, Mod. 1 (24-volt) instead of a Solenoid Mark 24 (12-volt).

RACK, BOMB, MARK 48



RACK, BOMB, MARK 48

STOCK No. 3-R-174

THE Bomb Rack Mark 48 carries 5 practice or fragmentation bombs weighing between 15 and 30 pounds each.

The pivoted bomb hooks (spaced 5.5 inches on centers) locking cams, and release pawls are assembled between the 2 side plates. A ratchet mechanism, activated by a spring, releases the bombs. This mechanism is contained in a cross-hood which traverses the notched selective bar on top of the rack.

The rack may be operated either manually

by the Release Handle Type L-21A, or electrically by a solenoid mounted on top of the rack. By operating the release handle, the bombs may be released selectively, in train, or in case of emergency, in salvo.

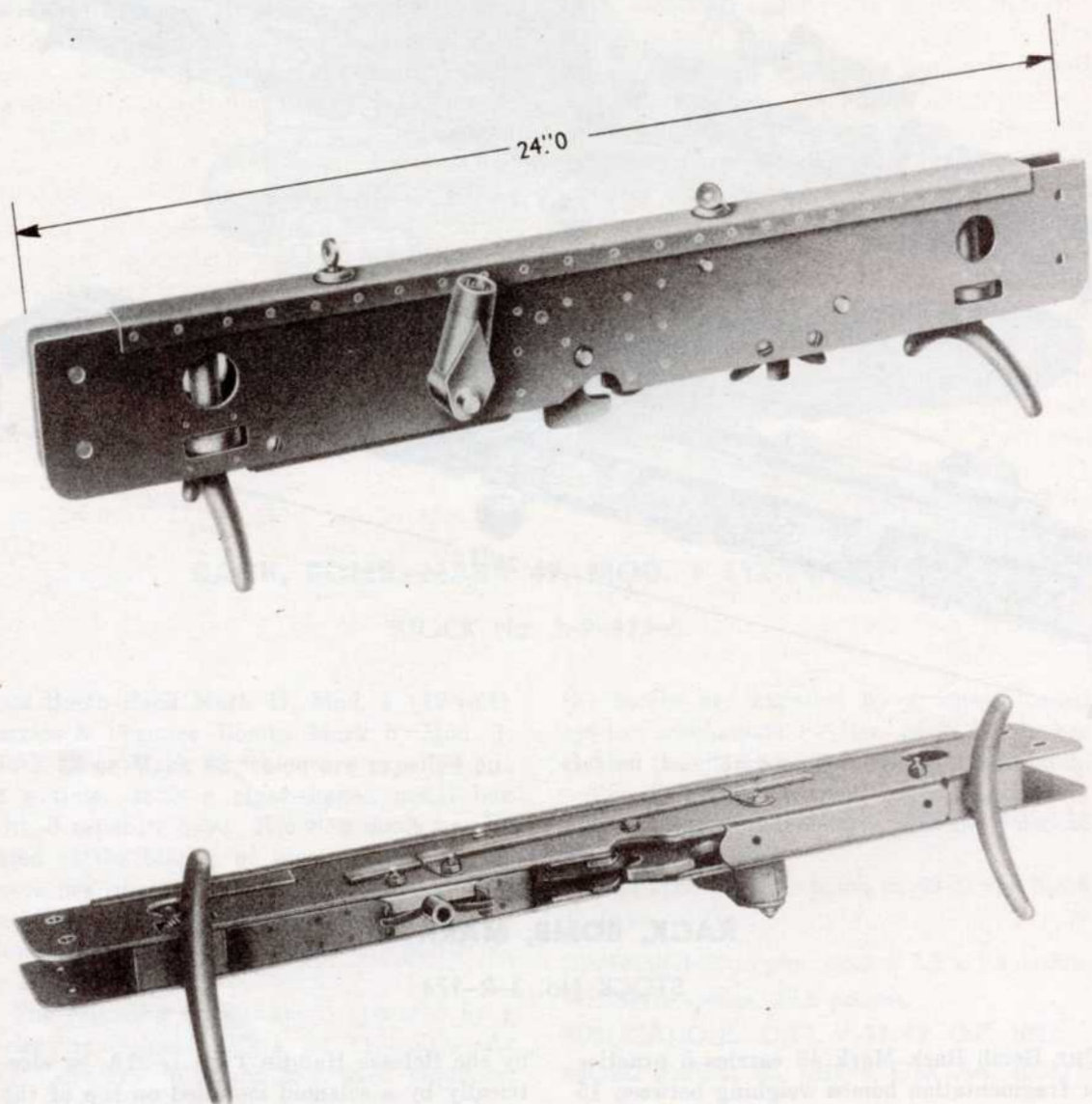
This rack, used on SB2U and SB2C type airplanes, has not proved very satisfactory.

DIMENSIONS: approx. 26.1 x 5.5 x 1.2 inches.

WEIGHT: approx. 11.3 pounds.

BuORD DWG: Gen. Arr. 300467.

RACK, BOMB, MARK 50 AND MODS.



RACK, BOMB, MARK 50 MODS.

RACK, BOMB, MARK 50, MOD. 2 LEFT AND RIGHT (12-VOLT)

STOCK Nos. 3-R-175-25 (L), 3-R-175-28 (R)

THE Bomb Rack Mark 50, Mod. 2 (12-volt) carries either a single lug bomb weighing between 25 and 500 pounds, a Bomb Container Mark 3, a Bomb Rack Mark 47, a Smoke Screen Tank Mark 7, a Tow Target Container Mark 1, Mod. 1, or any similar unit designed for single lug suspension.

The rack consists of 2 side plates enclosing a hook and releasing and arming mechanisms (including a releasing solenoid and 2 arming solenoids). Power is delivered to the solenoids through a 5 pin electrical receptacle mounted on whichever side plate is more convenient for installation. A standard AN3106-14S-5S straight plug or a standard AN3108-14S-5S, 90-degrees angle plug can be used with the receptacle. When the receptacle is mounted on the left side plate, the rack is designated (L); when mounted on the right side plate, the designation is (R). Activities ordering Bomb Racks Mark 50 and Mods. must specify by stock number which assembly is desired.

Arming and releasing are effected separately. This is done either electrically by

special 12-volt solenoids or manually by Bomb Release Handles Mark 4 and Mods. or Mark 29. Electrical arming is selective; the tail fuze, nose fuze, or both fuzes being armed at will. Manual arming is semi-selective: either the tail fuze, or both tail and nose fuzes may be armed.

The Bomb Rack Mark 50, Mod. 2 is used on VF, VSB, VOS, and VSO classes of aircraft. This rack replaces Bomb Rack Mark 41, Mod. 2 and is interchangeable with it so far as mounting provisions in the airplane and connections for manual arming and release are concerned.

DIMENSIONS: approx. 24.0 x 5.3 x 3.0 inches.

WEIGHT: approx. 11.0 pounds.

PUBLICATIONS: O.T.I. V-2-43, V-33-43, V-39-43, V-3-44, V-4-44; O.P. 936; O.C.L. V-10-43.

BuORD DWGS: SK. 91184, 91185, Gen. Arr. 328744, 375582.

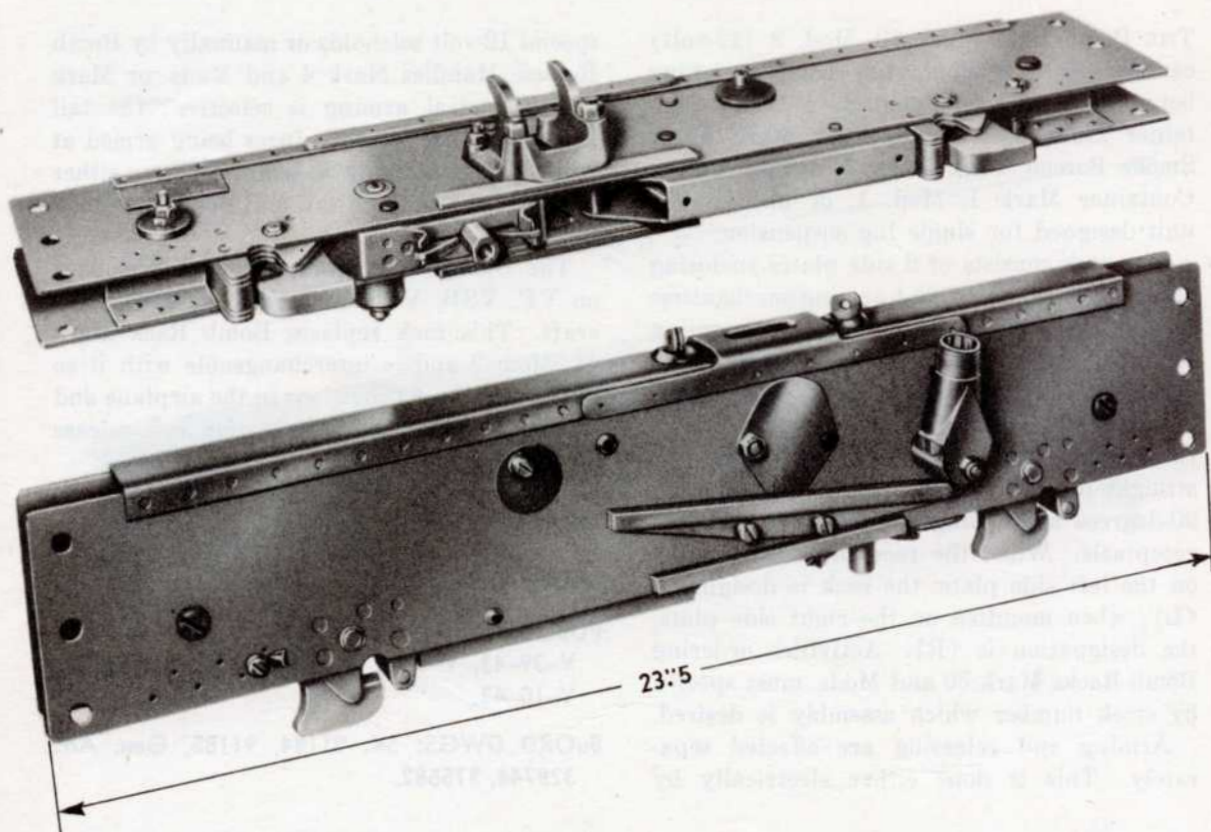
RACK, BOMB, MARK 50, MOD. 3 LEFT AND RIGHT (24-VOLT)

STOCK Nos. 3-R-175-35 (L), 3-R-175-38 (R)

THE Bomb Rack Mark 50, Mod. 3 (24-volt) is identical to the Mark 50, Mod. 2 except that

it operates on 24-volts instead of 12 volts.

RACK, BOMB, MARK 51, MODS. 6 AND 7 LEFT, RIGHT, AND CENTER



RACK, BOMB, MARK 51, MOD. 6 LEFT, RIGHT, AND CENTER (12-VOLT)

STOCK Nos. 3-R-176-63 (L), 3-R-176-65 (R), 3-R-176-60 (C)

THE Bomb Rack Mark 51, Mod. 6 (12-volt) carries a double lug bomb weighing up to 1600 pounds. It consists of 2 side plates which enclose a suspension hook and releasing and arming mechanisms (including one releasing solenoid and 2 arming solenoids).

The releasing and arming mechanisms are actuated either electrically by the solenoids, or manually by a Bomb Release Handle Mark 4, and Mods. Electrical arming is completely selective: the tail fuze, the nose fuze, or both fuzes may be armed as desired. Manual arming is semi-selective: either the tail fuze, or

both tail and nose fuzes, may be armed. A standard AN3106-14S-5S straight plug or a standard AN3108-14S-5S, 90-degree angle plug, is used with the 5-pin receptacle attached to the side of the rack.

The Mark 51, Mod. 6 is procured in 3 separate assemblies, depending upon the position, or absence of, the hoisting fitting. Activities ordering this rack must specify by stock number which assembly (RIGHT, LEFT or CENTER) is required. The Hoist Mark 7, Mod. 1 may be used with the hoisting fitting on either the RIGHT or LEFT assemblies.

RACK, BOMB, MARK 51, MODS. 6 AND 7 LEFT, RIGHT, AND CENTER

RACK, BOMB, MARK 51, MOD. 6 LEFT, RIGHT, AND CENTER (12-VOLT) (Cont'd)

For CENTER hoisting, a passage between the side-plates at the midsection of the rack allows the hoisting cable of a Portable Bomb Hoist Mark 6 mounted overhead to pass down through the rack for attachment to a bomb.

The Bomb Racks Mark 51, Mod. 6 (LEFT, RIGHT and CENTER) replace Bomb Racks Mark 51, left hand hoisting; Mark 51, Mod. 1 right hand hoisting; and Mark 51, Mod. 2 center hoisting respectively. In all other respects, the Mark 51, Mod. 6 is the same as

the Mark 51 and Mark 51, Mod. 1 and Mod. 2.

The Mark 51 series replaces the Bomb Rack Mark 35 series.

DIMENSIONS: approx. 23.5 x 6.1 x 4.5 inches.

WEIGHT: approx. 12.1 pounds.

PUBLICATIONS: O.P. 925, O.C.L. V-10-43, O.T.I. V-27-43, V-29-43, V-39-43, V-3-44, V-4-44.

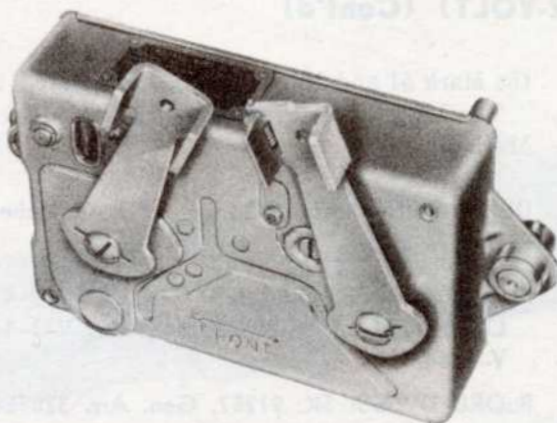
BuORD DWGS: SK. 91257, Gen. Arr. 328759.

RACK, BOMB, MARK 51, MOD. 7 LEFT, RIGHT AND CENTER (24-VOLT)

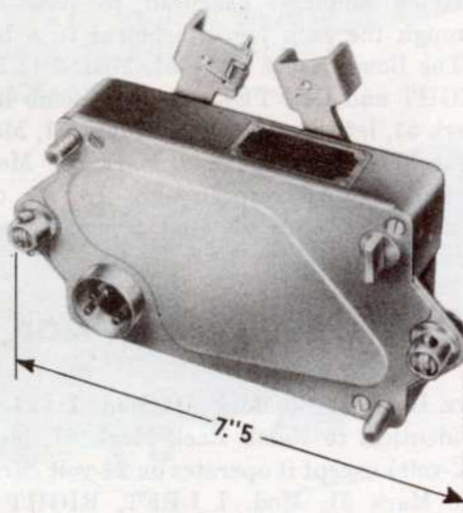
THE Bomb Rack Mark 51, Mod. 7 (24-volt) is identical to Bomb Rack Mark 51, Mod. 6 (12-volt) except it operates on 24-volt current. The Mark 51, Mod. 7 LEFT, RIGHT and

CENTER assemblies replace Bomb Racks Mark 51, Mod. 3, left hand hoisting; Mark 51, Mod. 4, right hand hoisting, and the Mark 51, Mod. 5 center hoisting respectively.

RELEASE, BOMB RACK, TYPE A-2 (IMPROVED), AN-A-2A, AND A-3



TYPE A-2 IMPROVED L.H.



RELEASE, BOMB RACK, TYPE A-2 (IMPROVED) LEFT AND RIGHT HAND (24-VOLT)

STOCK Nos. 3-R-518-27 (L), 3-R-518-28 (R)

THE Bomb Rack Release Type A-2 (Improved) actuates the release mechanisms of Bomb Shackles Types B-7, B-9, B-10 and D-6 in a 24-volt system. This device, except for a stronger case with inspection window, and an internal refinement to prevent inadvertent release, resulting from vibration, is the same as Bomb Rack Release Type A-2. The latter, in accordance with O.C.L. V-25-43, has been replaced by the improved release and should not be used. The release consists of an aluminum or steel box containing a solenoid-actuated mechanism, and releasing arms. The arms have fingers on the ends for direct engagement with corresponding levers on the shackle. A 3-pin connector on one side of the box mates with a 3-pin socket of an auxiliary switch box.

The release is controlled manually by a lever which can be set in one of 3 positions—

safe, electrical release, or manual salvo. When released manually in salvo, the bombs are unarmed.

Bomb Rack Release (Improved) Type A-2 Right Hand is the mirror image of Bomb Rack Release (Improved) Type A-2 Left Hand, with the exception of the electrical connector. The position of the arming and releasing levers and of the electrical connection on the back are reversed.

The release is secured to the airplane by Simmons fasteners.

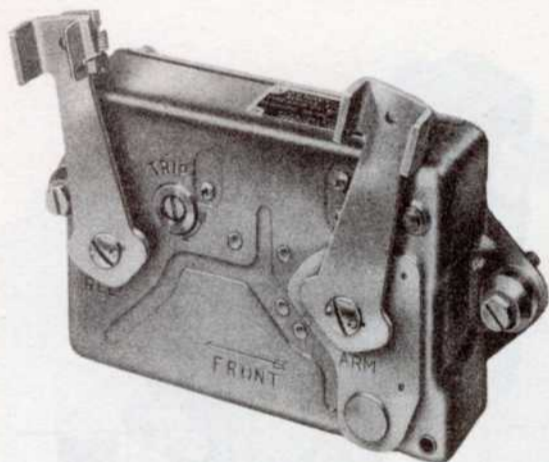
DIMENSIONS: approx. 7.5 x 5.3 x 3.0 inches.

WEIGHT: approx. 2.5 pounds.

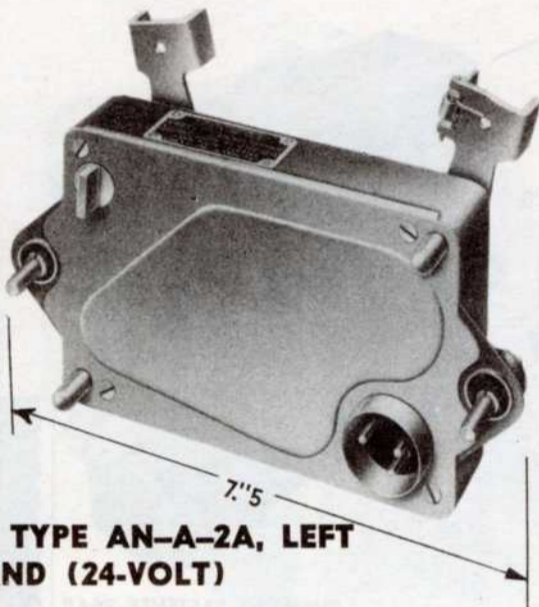
PUBLICATIONS: AAF Tech. Orders 11-5-28, 11-5-38, 11-5-46; O.C.L. V-25-43.

AAF DWGS: 41G1742 (Left Hand), 41G1742-1 (Right Hand).

RELEASE, BOMB RACK, TYPE A-2 (IMPROVED), AN-A-2A, AND A-3 (CONT'D)



TYPE AN-A-2A R.H.



RELEASE, BOMB RACK, TYPE AN-A-2A, LEFT AND RIGHT HAND (24-VOLT)

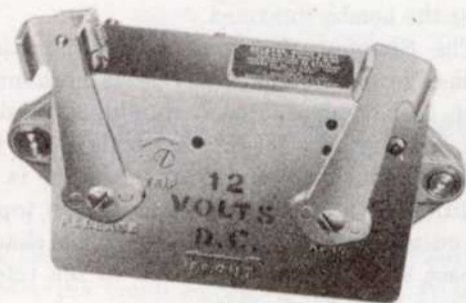
STOCK Nos. 3-R-518-30 (L), 3-R-518-35 (R)

THE Bomb Rack Release Type AN-A-2A (24-volt) is identical to Type A-2 Improved except that it is secured to the airplane by bolts instead of Simmons fasteners. It re-

places Types A-2 and A-2 Improved.

PUBLICATION: O.P. 1070.

BuORD DWG: Outline 388365.



TYPE A-3 R.H.



RELEASE, BOMB RACK, TYPE A-3, LEFT HAND AND RIGHT HAND (12-VOLT)

STOCK Nos. 3-R-519 (L), 3-R-519-25 (R)

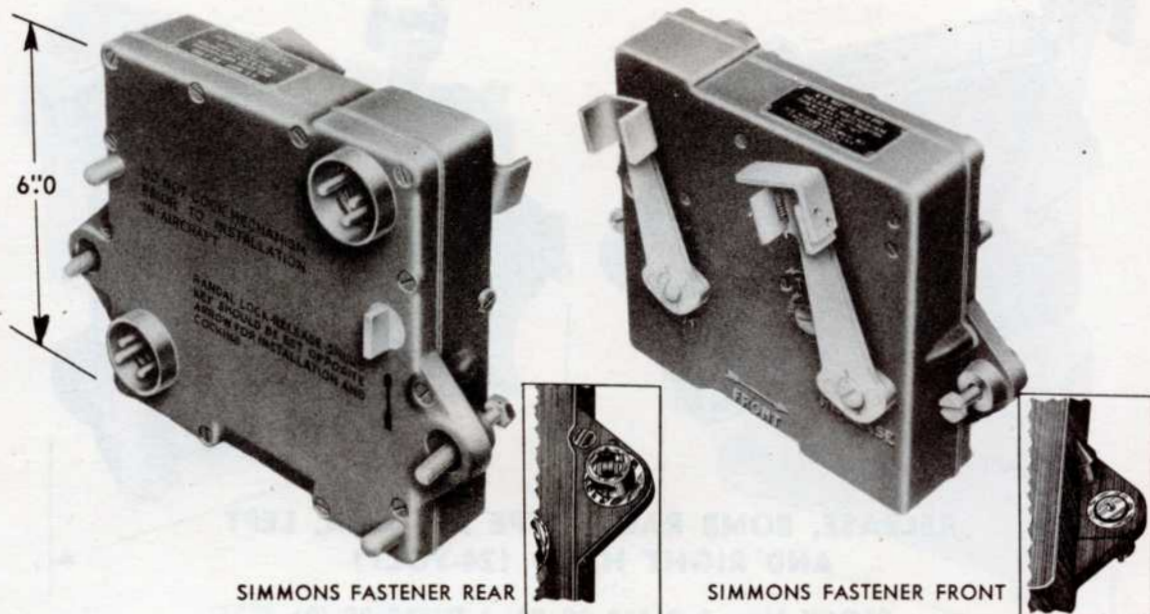
THE Bomb Rack Release Type A-3 is like the old Type A-2 except that it operates on 12 volts instead of 24 volts. This model does not incorporate the structure changes provided

in the Type A-2 Improved.

PUBLICATION: AAF Tech. Order 11-5-30.

AAF DWG: H42G4872.

RELEASE, BOMB SHACKLE, TYPE N-2



RELEASE, BOMB SHACKLE, TYPE N-2, LEFT AND RIGHT HAND

STOCK Nos. 3-R-520 (L), 3-R-520-10 (R)

THE Bomb Shackle Release Type N-2 is a 24-volt electrical device used to actuate the arming and releasing levers of Bomb Shackle Mark 5, Type B-7, or Type D-6. It has an aluminum housing which contains the operating mechanism. Levers on the outside of the box engage corresponding levers on the bomb shackle. Two auxiliary switch boxes are plugged into two 3-pin electrical connectors on the release.

This release differs from the Type A-2 in having an additional salvo circuit, providing armed selective and armed salvo release.

The Type N-2 also has a manually-actuated control. The control is connected to a lever which can be set in one of 3 positions—"SAFE," "ELECTRICAL RELEASE," or "MANUAL SALVO." The safe position locks the release mechanism against electrical release. The center position is set for electrical release. The salvo position provides for drop-

ping the bombs unarmed.

The Simmons fasteners (see illustration) formerly used to mount the release mechanism, have been replaced by 2 aluminum retainer bolt bushings, 2 steel retainer bolts and 2 bolt retainer clinch rings. Another change is the addition of a guard welded over the top of the outside release lever to prevent the shackle release arm from being moved to the release position by a hoist cable.

The right and left hand releases are the same except for the reversed positions of the arming and releasing levers and the electrical connectors. They are for use on opposite sides of the bomb bay.

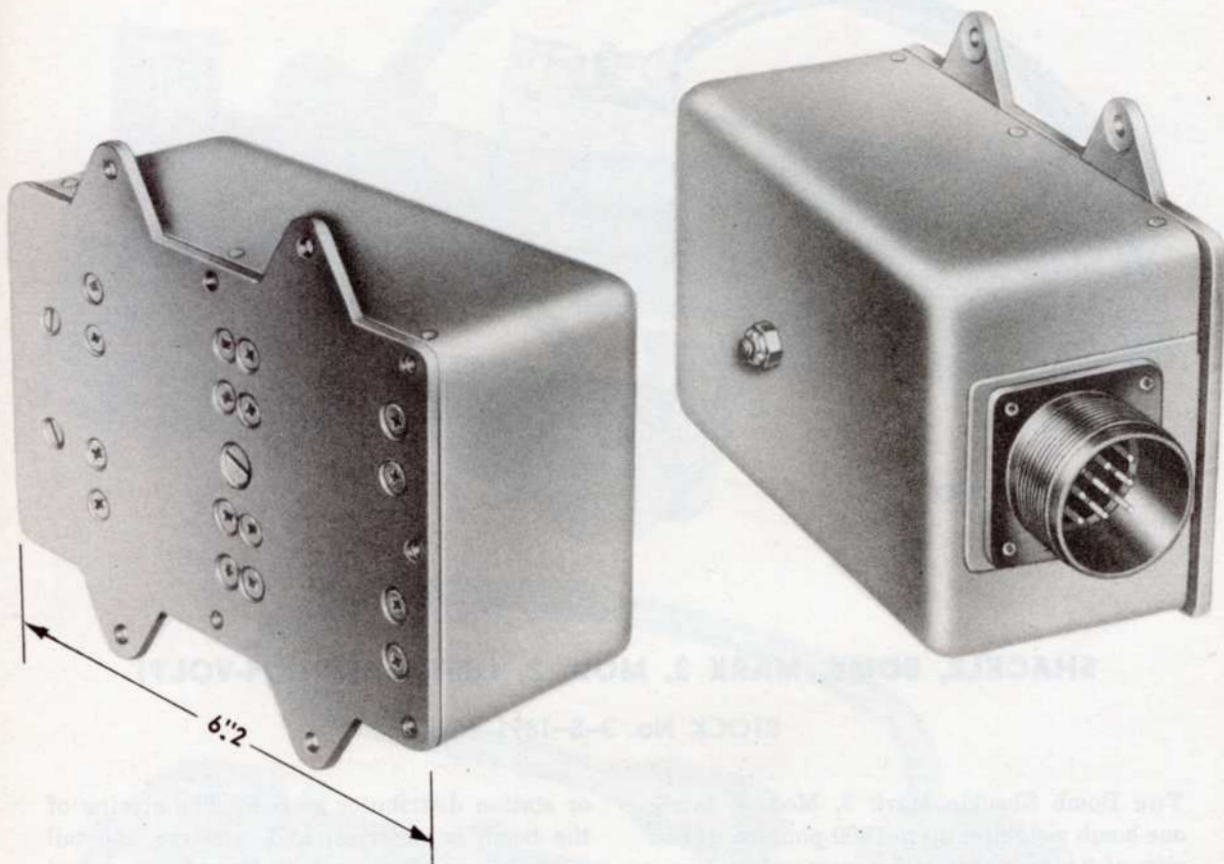
DIMENSIONS: approx. 7.8 x 6.0 x 2.8 inches.

WEIGHT: approx. 3.4 pounds.

PUBLICATIONS: O.T.I. V-20-43, V-28-43.

BuORD DWGS: SK. 90872, Gen. Arr. 328070.

SELECTOR UNIT, BOMB RACK, TYPE RS-2 (24-VOLT)



SELECTOR UNIT, BOMB RACK, TYPE RS-2 (24-VOLT)

STOCK No. 3-S-1710

THE Bomb Rack Selector Type RS-2 evenly divides the bomb releasing impulses from a single-wire intervalometer so that the equilibrium of the airplane is maintained as the load is released.

The selector consists of an aluminum box that houses an electrical mechanism of interconnected relays which automatically transfer the electrical bomb release impulse alternately between 2 circuits. One or more rack selectors may be interconnected in series to handle any number of circuits. Two selectors in series distribute the impulse between 4 circuits, 3 selectors between 6 circuits, etc.

The selector permits the "layer" release of bombs at a maximum speed of operation of 22 impulses per second or 11 impulses per circuit per second.

The mounting frame must be a good electrical ground and must be non-magnetic. Electrical connection is made through an AN3122-22-20P electrical receptacle connector.

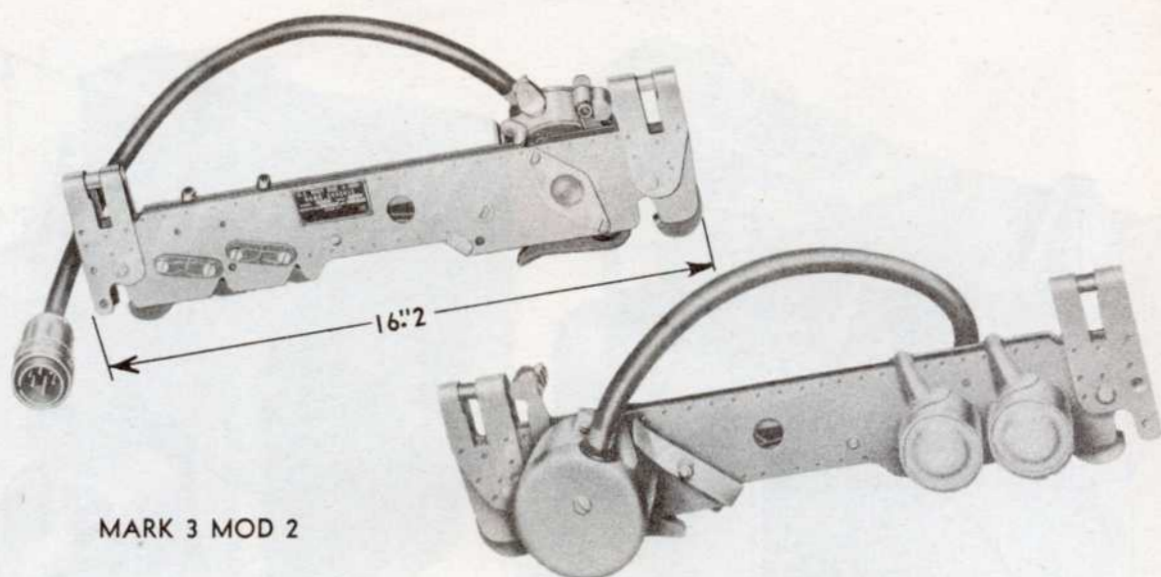
DIMENSIONS: approx. 6.2 x 5.0 x 2.9 inches.

WEIGHT: approx. 2.3 pounds.

PUBLICATION: O.P. 1072.

BuORD DWGS: SK. 90830, Gen. Arr. 301058.

SHACKLE, BOMB, MARK 3, MODS.



SHACKLE, BOMB, MARK 3, MOD. 2, LEFT HAND (24-VOLT)

STOCK No. 3-S-1891-15

THE Bomb Shackle Mark 3, Mod. 2 carries one bomb weighing up to 1600 pounds. It consists of 2 side plates with a suspension stirrup at each end, 2 suspension hooks on 14-inch centers beneath the stirrups and the releasing and arming mechanisms. A release solenoid with connector and 21-inch cable, and 2 arming solenoids are attached to the left side plate.

The shackle is normally locked when loaded and the bomb is usually carried in a "safe" condition. It may be released manually by a bomb release handle, or electrically by a single-wire intervalometer and a rack selector

or station distributor system. The arming of the bomb is electrical and selective, the tail fuze, the nose fuze, or both fuzes being armed at will. Arming occurs when the shackle is unlocked and the bomb dropped.

The Bomb Shackle Mark 3, Mod. 2 is used primarily in patrol bombers for horizontal bombing.

DIMENSIONS: approx. 16.2 x 5.2 x 3.5 inches.

WEIGHT: approx. 7.5 pounds.

PUBLICATION: O.P. 978.

BuORD DWGS: SK. 91240, Gen. Arr. 329436.

SHACKLE, BOMB, MARK 3, MOD. 3, RIGHT HAND (24-VOLT)

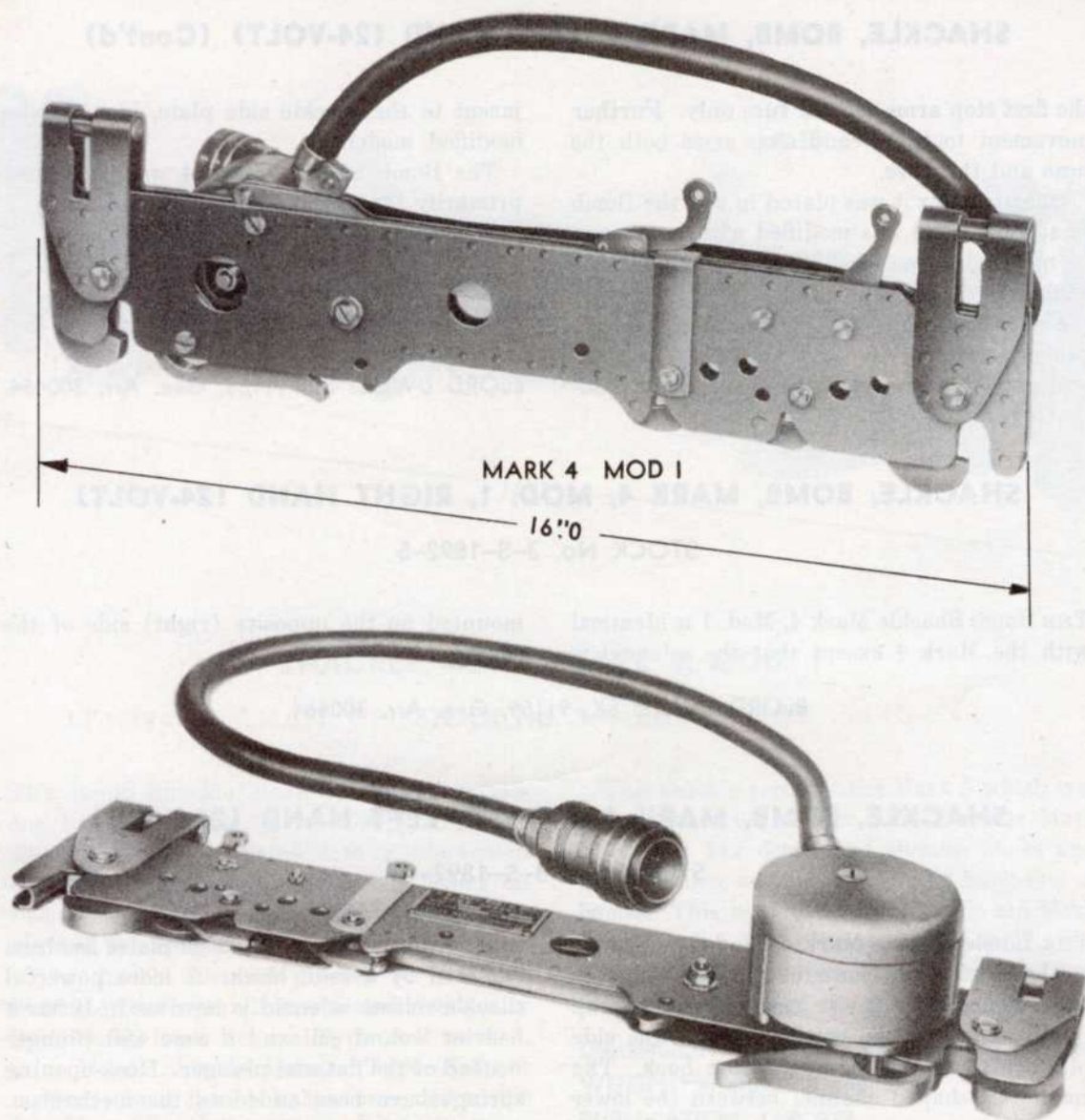
STOCK No. 3-S-1891-20

THE Bomb Shackle Mark 3, Mod. 3 is the same as the Mark 3, Mod. 2 except that the solenoids

are mounted on the right side, for right hand operation.

BuORD DWGS: SK. 91240, Gen. Arr. 329894.

SHACKLE, BOMB, MARK 4, AND MODS.



SHACKLE, BOMB, MARK 4, LEFT HAND (24-VOLT)

STOCK No. 3-S-1892

THE Bomb Shackle Mark 4 carries one bomb weighing up to 1600 pounds. Torpedoes may be suspended between a pair of these shackles by use of proper slings.

The shackle consists of 2 side plates with a suspension stirrup at each end, 2 suspension hooks on 14-inch centers beneath the stirrups, and the releasing and arming mechanisms. A release solenoid with connector and cable is mounted forward on the left side plate.

Release may be accomplished manually by Bomb Release Handle Mark 4 or Mods. built into the airplane.

The shackle is spring-locked when loaded and the bomb is usually carried in a "safe" condition. Movement of the bomb release arming handle simultaneously unlocks the shackle and arms the bomb. Arming of the bomb is manual and selective; no electric arming is provided. Movement of the arming handle to

SHACKLE, BOMB, MARK 4, AND MODS. (24-VOLT)

SHACKLE, BOMB, MARK 4, LEFT HAND (24-VOLT) (Cont'd)

the first stop arms the tail fuze only. Further movement to the second stop arms both the nose and tail fuze.

Shortly after it was placed in use, the Bomb Shackle Mark 4 was modified with no change in nomenclature. Modification consisted of a change in the slope and radius of curvature of the suspension hooks, and the use of an improved solenoid. An "A" stamped on the hook, and an "X" stamped on the solenoid disc ad-

jacent to the shackle side plate, identify the modified model.

The Bomb Shackle Mark 4 was developed primarily for use on TBF airplanes.

DIMENSIONS: approx. 16.0 x 4.0 x 2.8 inches.

WEIGHT: approx. 5.3 pounds.

PUBLICATIONS: O.P. 976, O.M.I. V-2-44,
O.T.I. V-8-44.

BuORD DWGS: SK. 91158, Gen. Arr. 300464.

SHACKLE, BOMB, MARK 4, MOD. 1, RIGHT HAND (24-VOLT)

STOCK No. 3-S-1892-5

THE Bomb Shackle Mark 4, Mod. 1 is identical with the Mark 4 except that the solenoid is

mounted on the opposite (right) side of the shackle.

BuORD DWGS: SK. 91159, Gen. Arr. 300464.

SHACKLE, BOMB, MARK 4, MOD. 2, LEFT HAND (24-VOLT)

STOCK No. 3-S-1892-10

THE Bomb Shackle Mark 4, Mod. 2 is similar to the Mark 4 but contains the following improvements. The lower ends of the stirrup plates extend to the bottom edge of the side plates aft of the rear suspension hook. The small "U"-shaped channel between the lower

rear section of the shackle side plates has been replaced by a solid block. A more powerful shackle release solenoid is now used. It has a heavier wound coil and a cone seat plunger instead of the flat seat plunger. Hook-opening springs have been added to the mechanism.

BuORD DWGS: SK. 9199, Gen. Arr. 329502.

SHACKLE, BOMB, MARK 4, MOD. 3, RIGHT HAND (24-VOLT)

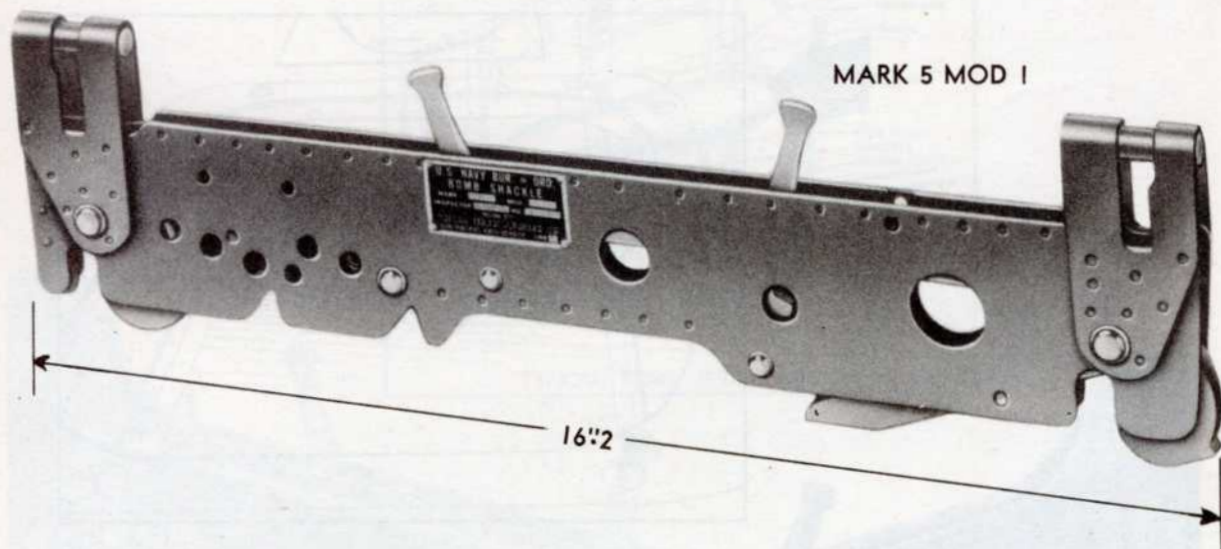
STOCK No. 3-S-1892-20

THE Bomb Shackle Mark 4, Mod. 3 is the same as the Mark 4, Mod. 2 except for the release

solenoid which is mounted on the opposite (right) side.

BuORD DWGS: SK. 91200, Gen. Arr. 329502.

SHACKLE, BOMB, MARK 5, MODS.



SHACKLE, BOMB, MARK 5, MOD. 1

STOCK No. 3-S-1894

THE Bomb Shackle Mark 5, Mod. 1 carries one bomb weighing up to 1600 pounds. It consists of 2 side plates with a suspension stirrup at each end, 2 suspension hooks on 14-inch centers beneath the stirrups, and arming and releasing mechanisms.

The shackle does not provide for selective arming of the bomb. It is actuated electrically by a Bomb Rack Release Type A-2 or A-3, or a Bomb Shackle Release Type N-2, or manually by a flexible cable connected to the bomb shackle release. Manual release drops the bomb unarmed.

This shackle replaces the Mark 5 which was withdrawn from service. The Shackle Mark 5, Mod. 1 has downward sloping hooks and hook-opening springs to prevent hang-ups of bombs. This used to occur with the old Mark 5. The action of the springs causes the shackle hooks to kick open, forcibly freeing the bomb lugs upon release of the shackle.

DIMENSIONS: approx. 16.2 x 4.5 x 0.8 inches.

WEIGHT: approx. 3.0 pounds.

PUBLICATION: O.P. 977.

BuORD DWGS: SK. 91130, Gen. Arr. 328776.

SHACKLE, BOMB, MARK 5, MOD. 2

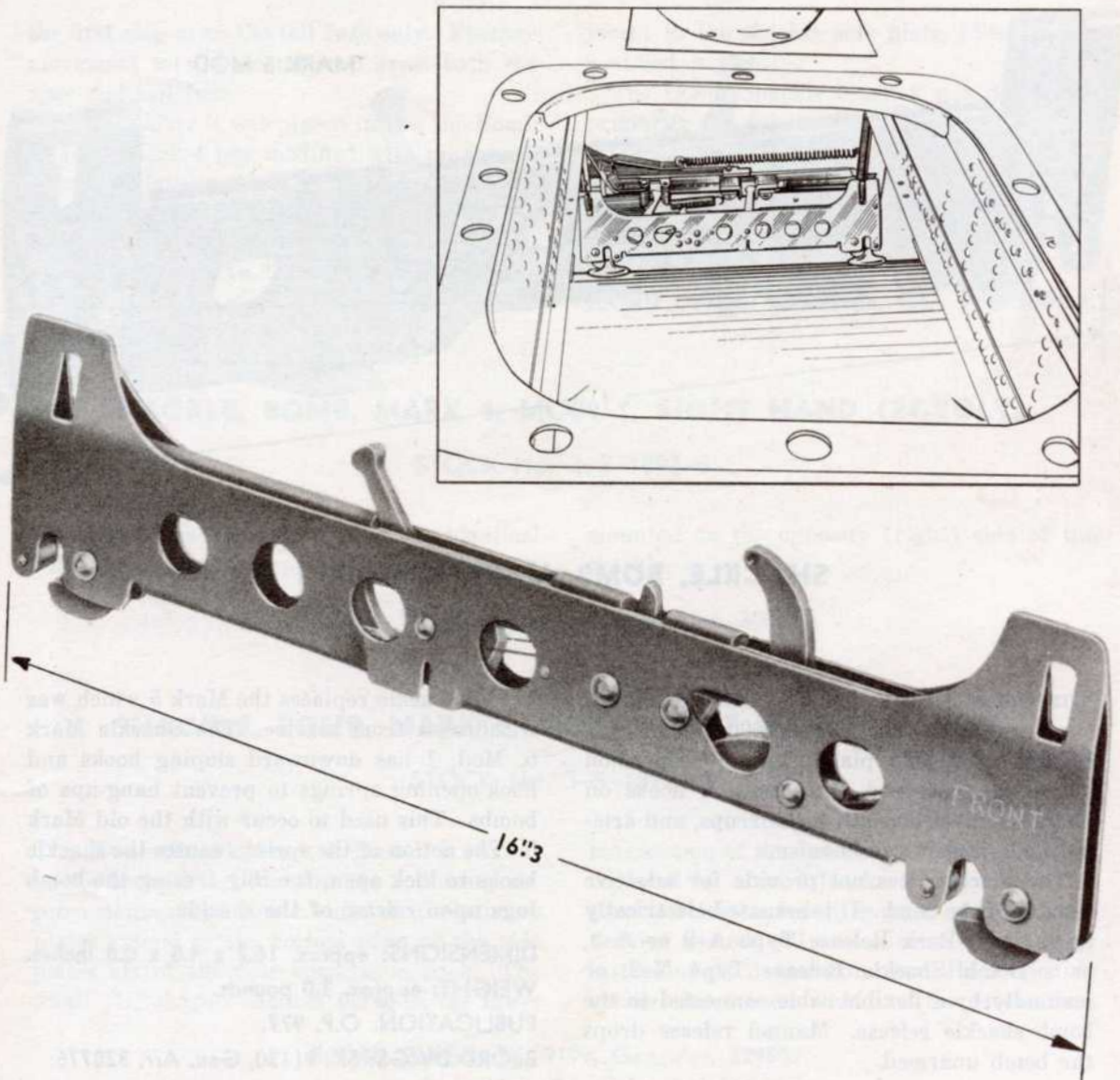
STOCK No. 3-S-1895

THE Bomb Shackle Mark 5, Mod. 2 differs from the Mark 5, Mod. 1 in the following respects: the lower ends of the stirrup plate now extend to the bottom edge of the side plates aft of the rear suspension hook. The small "U"-shaped channel between the lower

rear section of the shackle side plates has been replaced by a solid block. The slot, which confines the fore and aft movement of the releasing lever, has been lengthened to allow the lever to move aft an additional $\frac{1}{4}$ inch.

BuORD DWGS: SK. 91131, Gen. Arr. 329156.

SHACKLE, BOMB, TYPE B-5A



SHACKLE, BOMB, TYPE B-5A

STOCK No. 3-S-1900

THE Bomb Shackle Type B-5A carries a single bomb weighing from 100 to 1000 pounds. It consists of 2 metal side plates with a suspension stirrup at each end, 2 bomb suspension hooks on 14-inch centers beneath the stirrups, and releasing and arming mechanisms.

The shackle is connected to the airplane's electrical arming and releasing mechanism.

A manual emergency release mechanism is also provided.

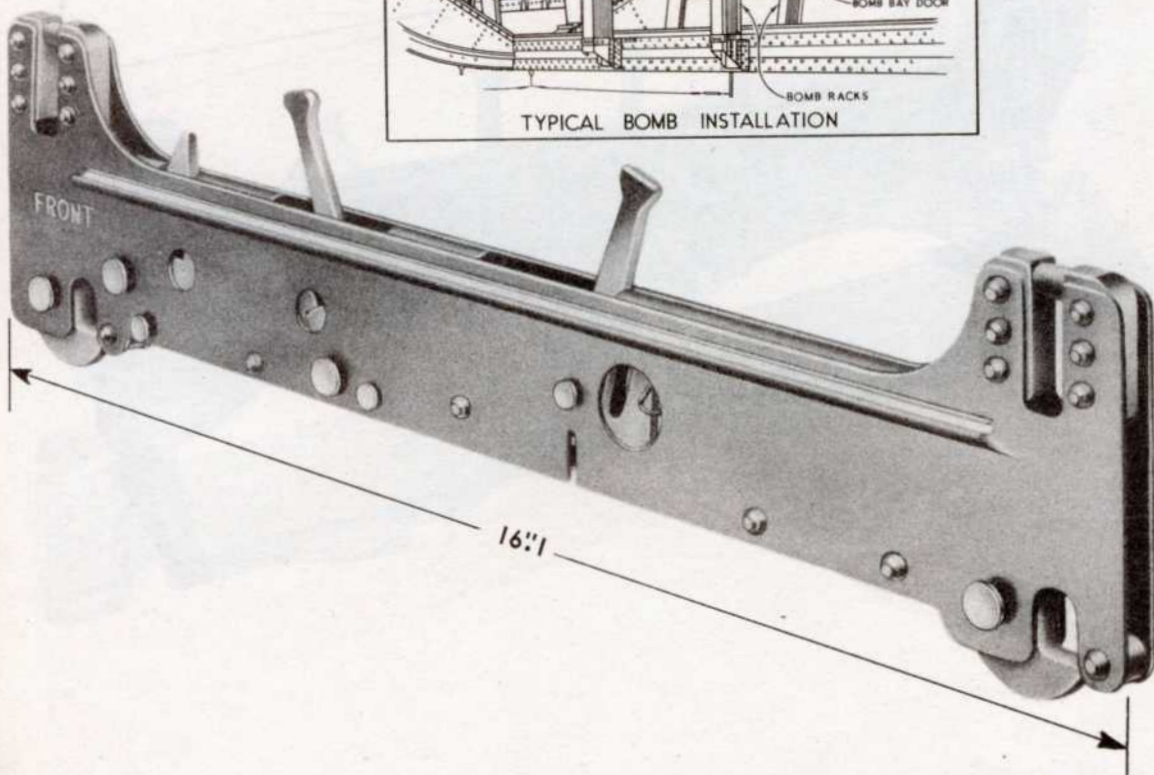
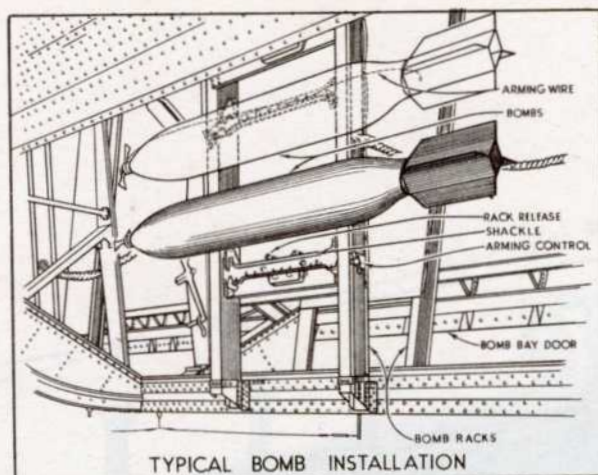
The Shackle Type B-5A was installed on the PBM-1 airplane.

DIMENSIONS: approx. 16.3 x 4.8 x 0.8 inches.

WEIGHT: approx. 2.4 pounds.

BuORD DWG: Gen. Arr. 278951.

SHACKLE, BOMB, TYPE B-7



SHACKLE, BOMB, TYPE B-7

STOCK No. 3-S-1904

THE Bomb Shackle Type B-7 carries one bomb weighing from 100 to 1100 pounds. It consists of 2 side plates with a suspension stirrup at each end, 2 bomb suspension hooks on 14-inch centers, and releasing and arming mechanisms. The spring-loaded arming and releasing levers extend above the shackle and engage the arms of a Bomb Shackle Release Type N-2 or a Bomb Rack Release Type A-2 or A-3.

This shackle is used on Army type airplanes used by the Navy.

DIMENSIONS: approx. 16.1 x 4.0 x 0.9 inches.

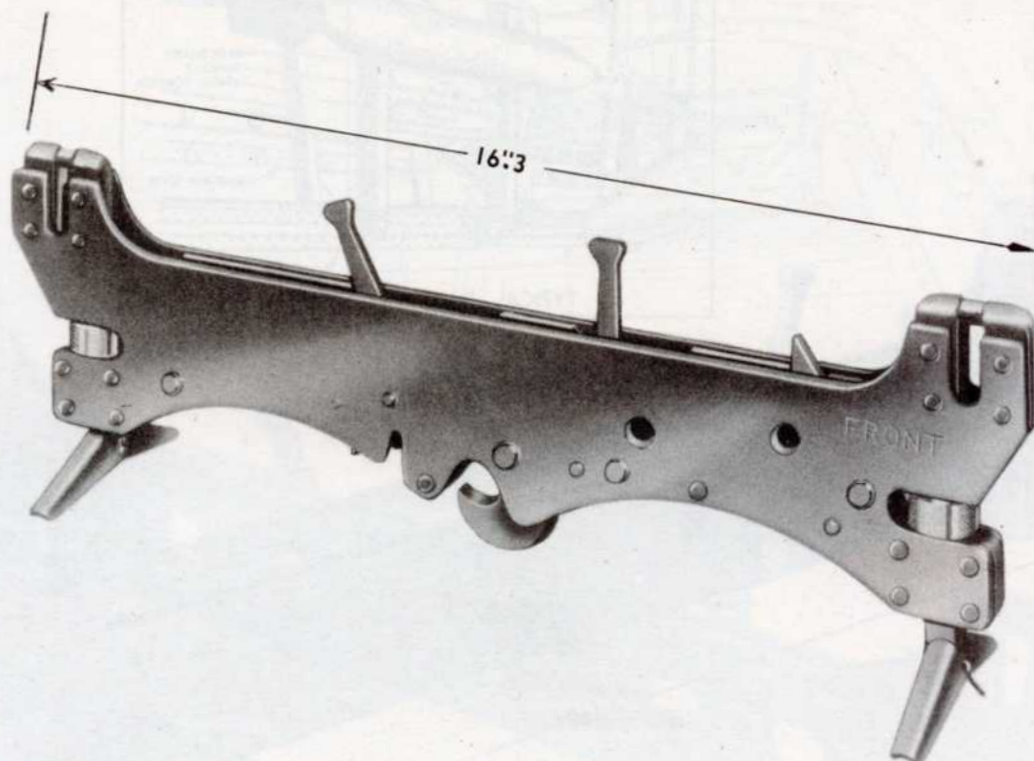
WEIGHT: approx. 3.0 pounds.

PUBLICATION: AAF Tech. Order 11-5-27.

AAF DWG: 33D5226.

BuORD DWG: Gen. Arr. 204298.

SHACKLE, BOMB, TYPE AN-B-9



SHACKLE, BOMB, TYPE AN-B-9

STOCK No. 3-S-1905

THE Bomb Shackle Type AN-B-9 (formerly Type B-9) carries a bomb weighing between 100 and 1000 pounds. It consists of 2 side plates with a suspension stirrup at each end, a center bomb suspension hook, an adjustable steadying fork beneath each stirrup, and releasing and arming mechanisms. The spring-loaded releasing and arming levers extend above the shackle and engage the arms of a Bomb Rack Release Type A-2 or A-3, or Bomb Shackle Release Type N-2. The shackle has only a single arming slot.

In view of the fact the Naval aircraft might at some time be required to carry single lug British Bombs, this shackle has been made an AN standard item.

DIMENSIONS: approx. 16.3 x 6.5 x 1.0 inches.

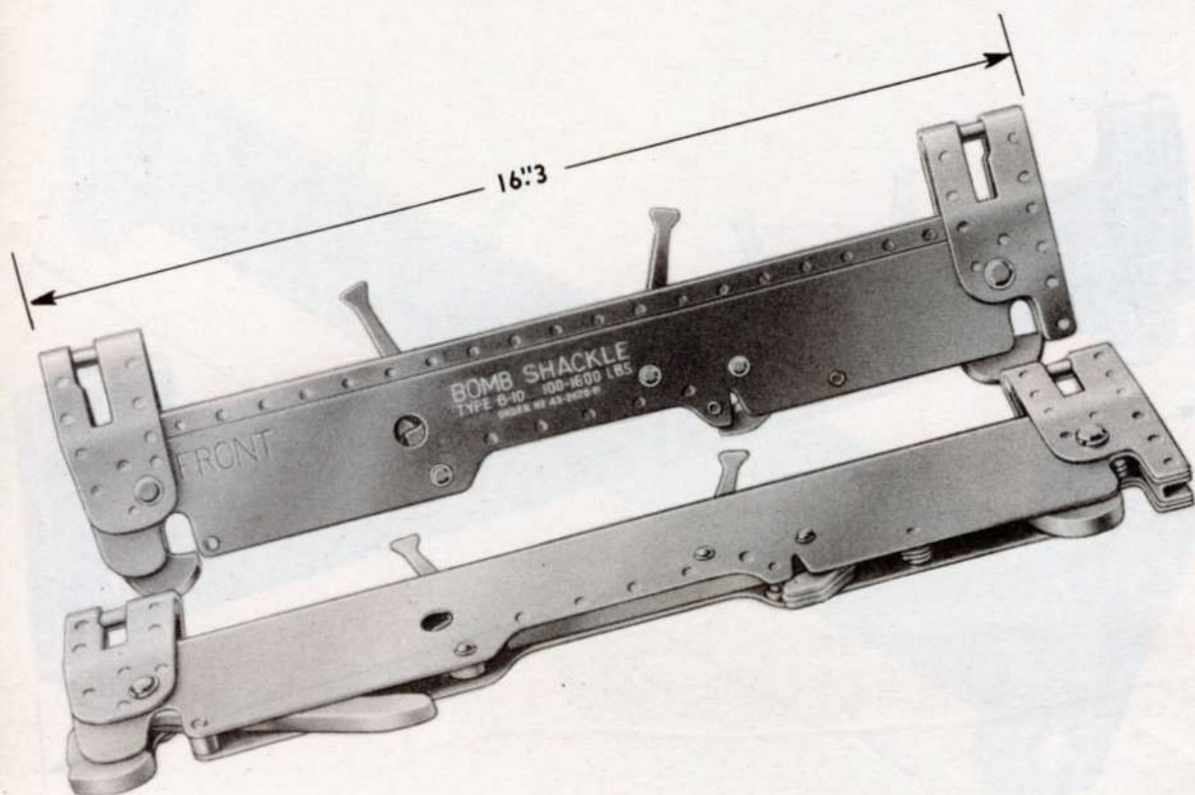
WEIGHT: approx. 6.0 pounds.

PUBLICATION: AAF Tech. Order 11-5-35.

AAF DWG: 42D7307.

BuORD DWG: Gen. Arr. 309888.

SHACKLE, BOMB, TYPE AN-B-10



SHACKLE, BOMB, TYPE AN-B-10

STOCK No. 3-S-1906

THE Bomb Shackle Type AN-B-10 carries a bomb weighing from 100 to 1600 pounds. It consists of 2 side plates with a suspension stirrup at each end, 2 bomb suspension hooks, on 14-inch centers beneath the stirrups, and releasing and arming mechanisms. The spring-loaded releasing and arming levers extend

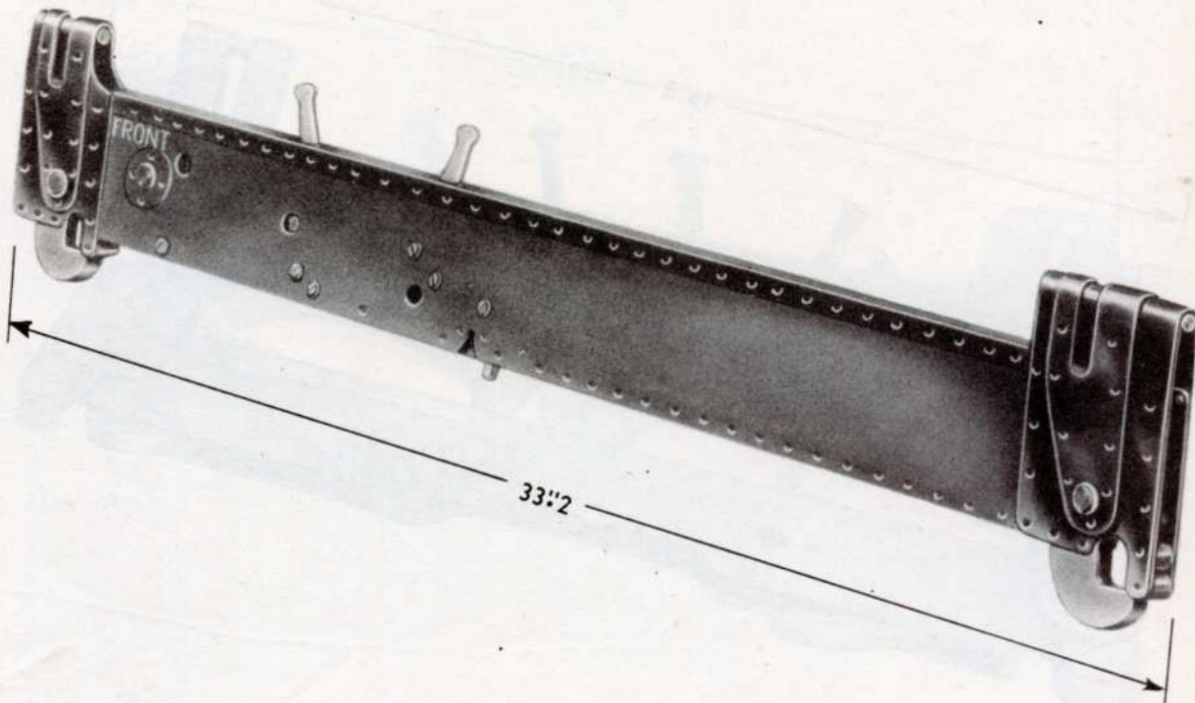
above the shackle and engage the arms of a Bomb Rack Release Type A-2 or A-3, or Bomb Shackle Release Type N-2.

DIMENSIONS: approx. 16.3 x 4.3 x 1.0 inches.

WEIGHT: approx. 3.0 pounds.

AAF DWG: 43D10157.

SHACKLE, BOMB, TYPE D-6



SHACKLE, BOMB, TYPE D-6

STOCK No. 3-S-1908

THE Bomb Shackle Type D-6 carries a bomb weighing up to 2000 pounds. It consists of 2 side plates with a suspension stirrup at each end, 2 bomb suspension hooks on 30-inch centers, and releasing and arming mechanisms. The releasing and arming levers extend above the shackle and engage the arms of a Bomb Rack Release Type A-2 or A-3, or Bomb Shackle Release Type N-2.

This shackle is used on the PB4Y, PBJ, and PV-1 type aircraft for carrying 2000

pound Bombs Types AN-M34 and AN-M66, or any other bomb, torpedo, mine, container, etc., having proper suspension lugs.

DIMENSIONS: approx 33.2 x 5.8 x 1.0 inches.

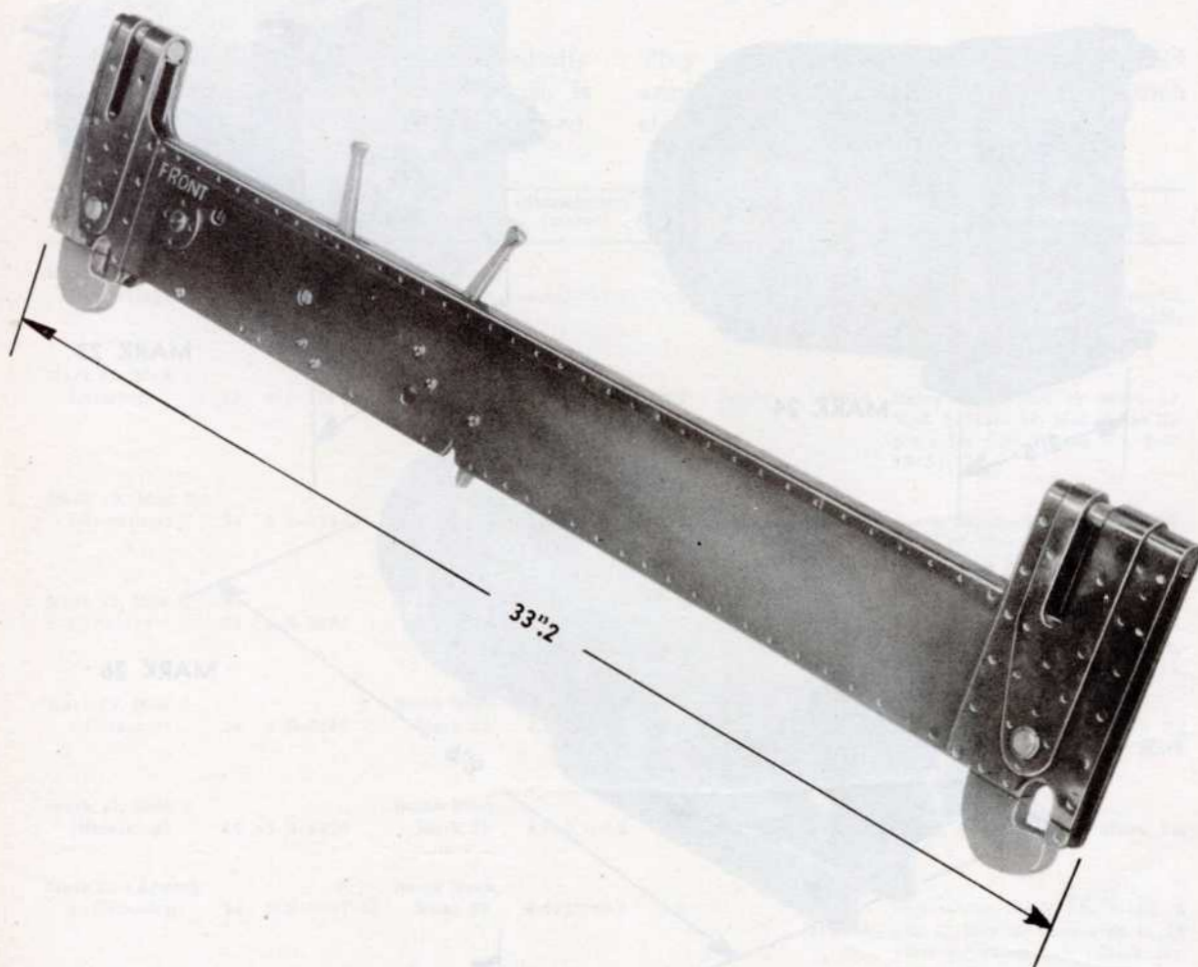
WEIGHT: approx. 9.3 pounds.

PUBLICATION: AAF Tech. Order 11-5-10.

AAF DWG: 41E4555.

BuORD DWG: Gen. Arr. 307276.

SHACKLE, BOMB, TYPE D-7



SHACKLE, BOMB, TYPE D-7

STOCK No. 3-S-1909

THE Bomb Shackle Type D-7 carries a bomb weighing up to 4000 pounds. It consists of 2 side plates with a suspension stirrup at each end, 2 bomb suspension hooks on 30-inch centers and releasing and arming mechanisms. The spring-loaded releasing and arming levers extend above the shackle and engage the arms

of a Bomb Shackle Release Type N-2 or Bomb Rack Release Type A-2 or A-3.

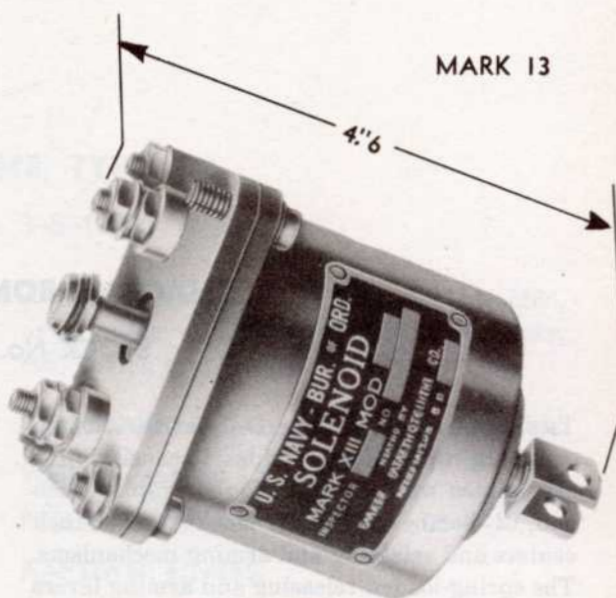
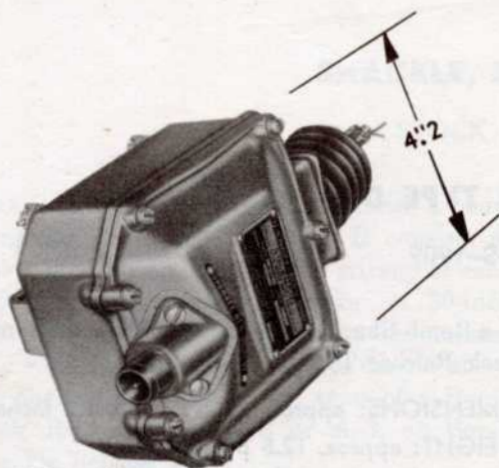
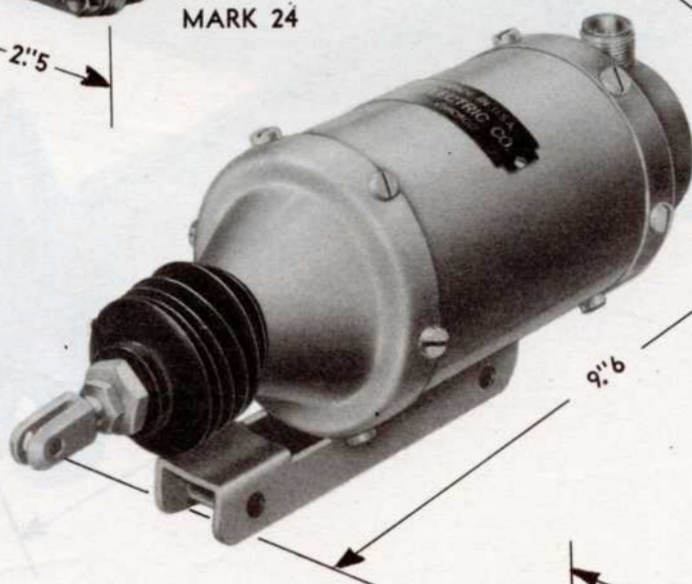
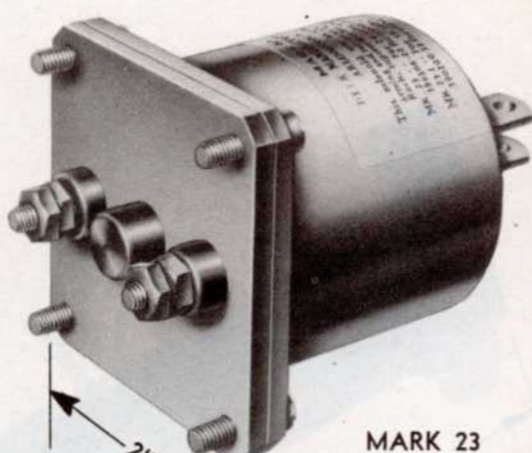
DIMENSIONS: approx. 33.2 x 7.2 x 1.2 inches.

WEIGHT: approx. 12.5 pounds.

PUBLICATION: AAF Tech. Order 11-5-10.

AAF DWG: 42E7219.

SOLENOIDS FOR BOMB RACKS



SOLENOIDS FOR BOMB RACKS

SOLENOIDS FOR BOMB RACKS

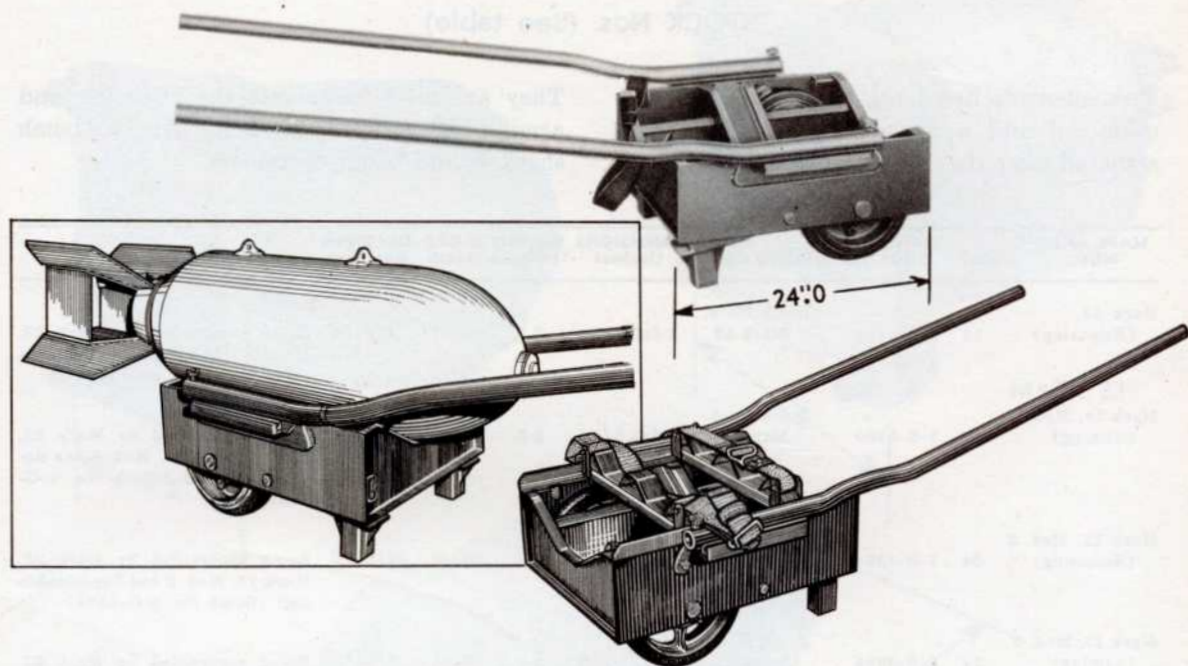
STOCK Nos. (See table)

THE solenoids listed below consist essentially of a coil and a movable plunger which is actuated when the coil is electrically energized.

They are used to operate the releasing and arming mechanism of bomb racks, bomb shackles and bomb containers.

MARK AND MOD.	VOLTS	STOCK NO.	USED ON	DIMENSIONS (inches)	WEIGHT (pounds)	BuORD Sketch	DRAWING Gen. Arr.	REMARKS
Mark 13, (Releasing)	12	3-S-3390	Bomb Rack, Mark 42	4.6x2.5x2.5	2.5	58067	178416	Being superseded by Mark 23, Mod. 1. Mark 13 has Replaceable Coil (Stock No. 3-C-1555).
Mark 13, Mod. 1 (Arming)	12	3-S-3380	Bomb Rack, Mark 42	4.6x2.5x2.5	2.5	58068	178416	Being superseded by Mark 23, Mod. 1. Mark 13, Mod. 1 has Replaceable Coil (Stock No. 3-C-1545).
Mark 13, Mod. 2 (Releasing)	24	3-S-3394	Bomb Rack, Mark 42	4.6x2.5x2.5	2.5	90442	178416	Being superseded by Mark 23, Mark 13, Mod. 2 has Replaceable Coil (Stock No. 3-C-1559).
Mark 13, Mod. 3 (Arming)	24	3-S-3384	Bomb Rack, Mark 42	4.6x2.5x2.5	2.5	90443	178416	Being superseded by Mark 23, Mark 13, Mod. 3 has Replaceable Coil (Stock No. 3-C-1551).
Mark 17, Mod. 3 (Releasing)	24	3-S-3410	Bomb Rack, Mark 35	4.2x3.7x9.2	5.6	90436	272800	Being superseded by Mark 26 for releasing Bomb Rack Mark 35 and Mods.
Mark 17, Mod. 4 (Releasing)	12	3-S-3414	Bomb Rack, Mark 35	4.2x3.7x9.2	5.6	90436	272800	Being superseded by Mark 26, Mod. 1
Mark 23 (Arming or Releasing)	24	3-S-3387-15	Bomb Rack, Mark 42	2.6x2.6x3.3	2.3		411230 (Pollak)	Supersedes Mark 13, Mods. 2 and 3. May be converted to 12 volts by using coil (Stock No. 3-C-1552).
Mark 23, Mod. 1 (Arming or Releasing)	12	3-S-3387-20	Bomb Rack, Mark 42	2.6x2.6x3.3	2.3		411230 (Pollak)	Supersedes Mark 13, and Mark 13, Mod. 1. May be converted to 24 volts by using coil (Stock No. 3-C-1551).
Mark 24 (Releasing)	12	3-S-3422	Bomb Rack, Mark 47 and Container Mark 3	3.8x2.5x2.5	2.3	91194	329410	
Mark 24, Mod. 1 (Releasing)	24	3-S-3424	Bomb Rack, Mark 47 and Container Mark 3	3.8x2.5x2.5	2.3	91195	329410	
Mark 26 (Releasing)	24	3-S-3428	Bomb Rack, Mark 35	9.6x3.6x3.2	4.2	108674	387629	Supersedes Mark 17, Mod. 3.
Mark 26, Mod. 1 (Releasing)	12	3-S-3428-10	Bomb Rack, Mark 35	9.6x3.6x3.2	4.2	108675	387629	Supersedes Mark 17, Mod. 4.

SKID, BOMB, MARK 1, MODS.



SKID, BOMB, MARK 1, MOD. 1

STOCK No. 3-S-3068

THE Bomb Skid Mark 1, Mod. 1 is a welded all-steel skid used to support a bomb during handling operations. It has a cradle top, 2 rubber-tired wheels forward and 2 spring-loaded legs in the rear. Brakes, operated by the 2 spring-loaded rear legs, are provided. To lock the brakes, the skid is lowered until the legs rest on the deck; to release the brakes, the skid is raised.

The handles are readily removed by unlatching the locking pin in each handle. The loaded skid may then be lifted and transported by a Bomb and Torpedo Truck Mark 2 and Mods., or Mark 3.

For moving heavy loads on soft ground or rough runways, the Mark 1, Mod. 1 may be converted into a track laying skid, by removing the rubber-tired wheels and installing a pair of track laying wheels (Attachment, Track Laying, Stock No. 3-A-700). This conversion is brought about in the following

manner. After the skid's rubber-tired wheels, wheel pins, brake arms and brake shoes are removed, 2 holes are drilled in each side plate. The 2 bearing brackets supplied with the track laying attachment are then bolted on and the track laying wheels and axle are installed.

An improved floor brake arm and brake shoe have been issued to activities stocking Bomb Skid Mark 1, Mod. 1 for installation according to instruction in Ordalt 1467. These parts are issued as Conversion Set for Bomb Skid Mark 1, Mod. 1 (Stock No. 3-C-1882).

Bomb Skid Adapter Mark 1 may be attached to carry three 100-pound bombs.

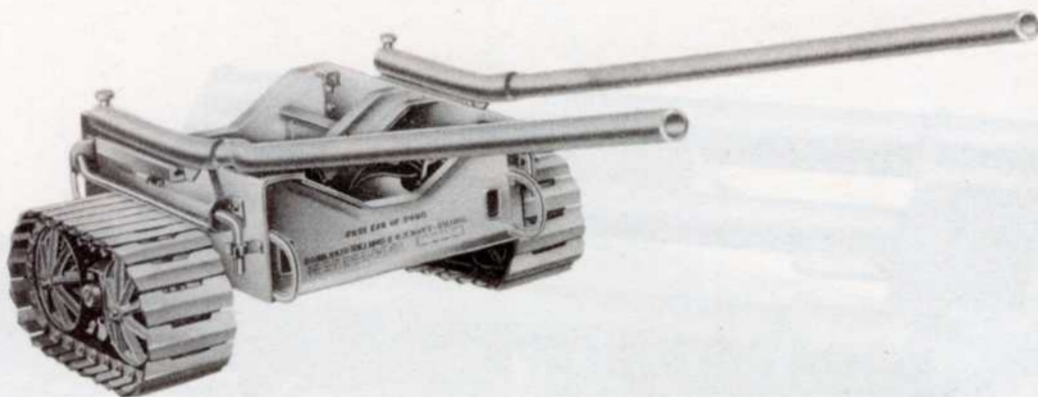
DIMENSIONS (without handles): approx. 24.0 x 23.5 x 11.6 inches.

WEIGHT: approx. 177 pounds.

PUBLICATIONS: O.P. 1073, Ordalt 1467.

BuORD DWGS: SK. 90591, Gen. Arr. 284522.

SKID, BOMB, MARK 1, MODS. (CONT'D)



SKID, BOMB, MARK 1, MOD. 2

STOCK No. 3-S-3068-50

THE Bomb Skid Mark 1, Mod. 2 is the same as the Mark 1, Mod. 1 but does not include the rubber-tired wheels and braking equipment. It is designed to be equipped with a pair of track laying wheels (Attachment, Track Laying, Stock No. 3-A-700) and holes for the attachment's supports are already drilled in the side plates. The attachment, however, must be procured separately.

A pair of anti-tilting devices is provided with this skid. These consist of a rod with

offset ends and a handle which, when turned down, rests the offset portion of the rod against the upper surface of the track laying tread. This prevents sideways tilting of the load on sloping decks or rough terrain.

A towing ring is bolted to the body at each corner.

WEIGHT: approx. 275.0 pounds.

BuORD DWGS: SK. 90591, Gen. Arr. 388482 and 388483.

SKID, BOMB MARK 1, MOD. 3

STOCK No. 3-S-3069

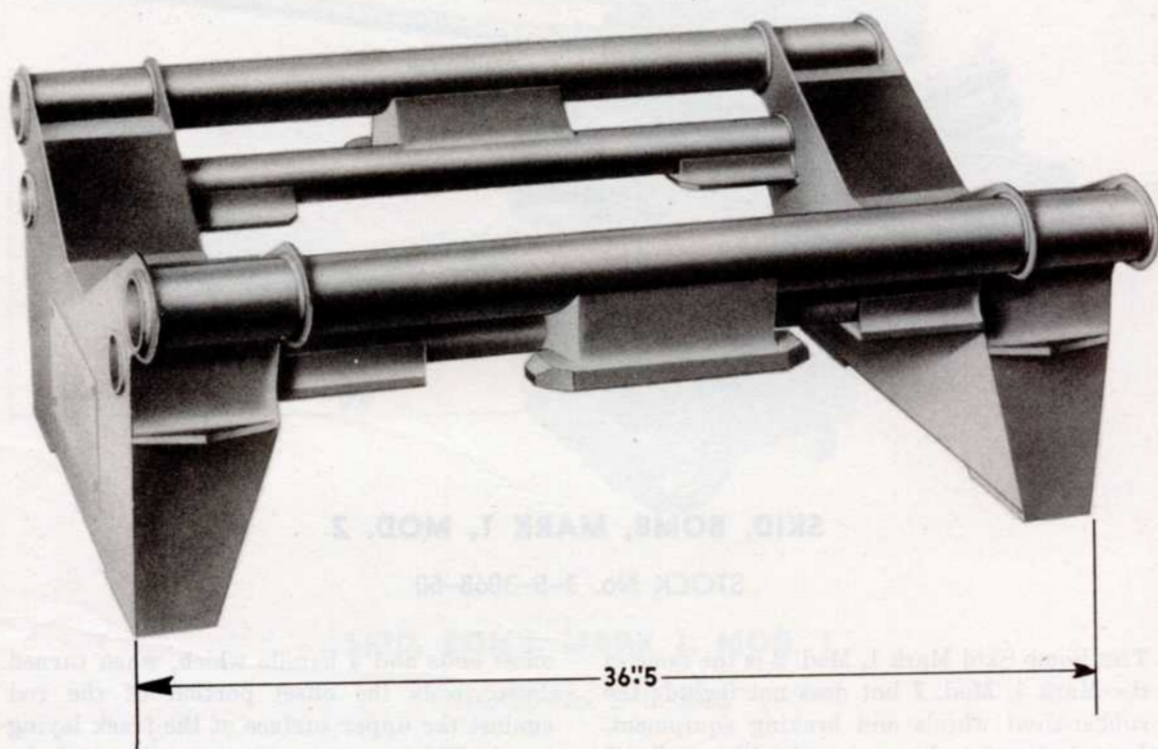
THE Bomb Skid Mark 1, Mod. 3 is a body similar to the Mark 1, Mod. 2 but is made of timber, reinforced with steel angles. Steel channels form the cradle top and four 3-inch towing rings are installed at the corners. The

wood side panels and outside steel plates are already drilled for installation of supports for the Track Laying Attachment, Stock No. 3-A-700. Mark 1, Mod. 3 also has the anti-tilting device provided.

WEIGHT: approx. 236 pounds.

BuORD DWGS: SK. 108749, Gen. Arr. 388766.

SKID, BOMB AND TORPEDO, MARK 3



SKID, BOMB AND TORPEDO, MARK 3

STOCK No. 3-S-3084

THE Bomb and Torpedo Skid Mark 3 supports a bomb or torpedo during handling operations. It is a steel stand having a cradle top supported by legs. The legs consist of 2 end sections, which are formed by end and side plates welded together at their edges. The end sections are joined by 4 tubular side members which pass through holes in the end plates and are welded around these holes. The 2 upper side members have short shoes welded at their centers on the under side, and similar shoes inside the end sections allow a suitable truck

to be slid under the skid to pick it up for transportation.

This skid is normally used to support a torpedo such as the Mark 7, Mod. 2A, or the Mark 13.

DIMENSIONS: approx. 36.5 x 24.5 x 13.1 inches.

WEIGHT: approx. 112 pounds.

CAPACITY: approx. 2500 pounds.

PUBLICATION: O.P. 1073.

BuORD DWG: SK. 78136.

SKID, BOMB AND TORPEDO, MARK 4



SKID, BOMB AND TORPEDO, MARK 4

STOCK No. 3-S-3085

THE Bomb and Torpedo Skid Mark 4 is used for handling crated bombs with Bomb Truck Mark 4, which slides under the skid and raises

DIMENSIONS: approx. 54.3 x 36.1 x 9.0 inches.
WEIGHT: approx. 100 pounds.

it for transporting. The skid is a wooden platform mounted on a steel channel frame with 4 flat-bottomed V-shaped iron legs.

CAPACITY: 2500 pounds.
BuORD DWG: Gen. Arr. 182950.

SKID, BOMB AND TORPEDO, MARK 5 AND MOD.



SKID, BOMB AND TORPEDO, MARK 5

STOCK No. 3-S-3089

THE Bomb and Torpedo Skid Mark 5 is a low cradle carried on 3 rubber-tired wheels, and used to support and manually transport a bomb up to 2500 pounds in weight, or a torpedo of the Mark 13 type. The single front wheel or caster is free-swiveling. The strap-steel handle with tubular grip is in 2 sections, and may be latched in the extended

position for hauling the skid, or unlatched and the inner section (extension legs) lowered to the deck. A brake-spring on each brake arm holds the brake shoes against the rear wheels, except when the extension legs are raised.

When loading this skid with a torpedo, the tow handle and extension legs are removed,

SKID, BOMB AND TORPEDO, MARK 5 AND MOD.

SKID, BOMB AND TORPEDO, MARK 5 (Cont'd)

STOCK No. 3-S-3089

and the brake cam arms raised to withdraw the brake shoes from contact with the rear wheels, allowing the skid to move.

The web hold-down straps provided with the Skid Mark 5 are replaced with new chain hold-down assemblies (Ordalt 1506) when torpedoes or bombs over 1000 pounds in weight are to be handled. The Hold-Down Chain Assembly has Stock No. 3-C-975.

The Bomb and Torpedo Skid Mark 5 is

superseded by the Mark 5, Mod. 1 (Ordalt No. 1816).

DIMENSIONS (handle folded in): approx. 38.0 x 23.5 x 13.5 inches.

WEIGHT: approx. 310 pounds.

CAPACITY: approx. 2500 pounds.

PUBLICATIONS: O.P. 1073, Ordalt 1816, 1506.

BuORD DWG: Gen. Arr. 301055.

SKID, BOMB AND TORPEDO, MARK 5, MOD. 1

STOCK No. 3-S-3089-10

THE Bomb and Torpedo Skid Mark 5, Mod. 1 is similar to the Mark 5 but has 2 front caster wheels which provide a more stable forward support on a sloping deck or an uneven runway. These front wheels may be locked by a caster lock to prevent free swiveling. The

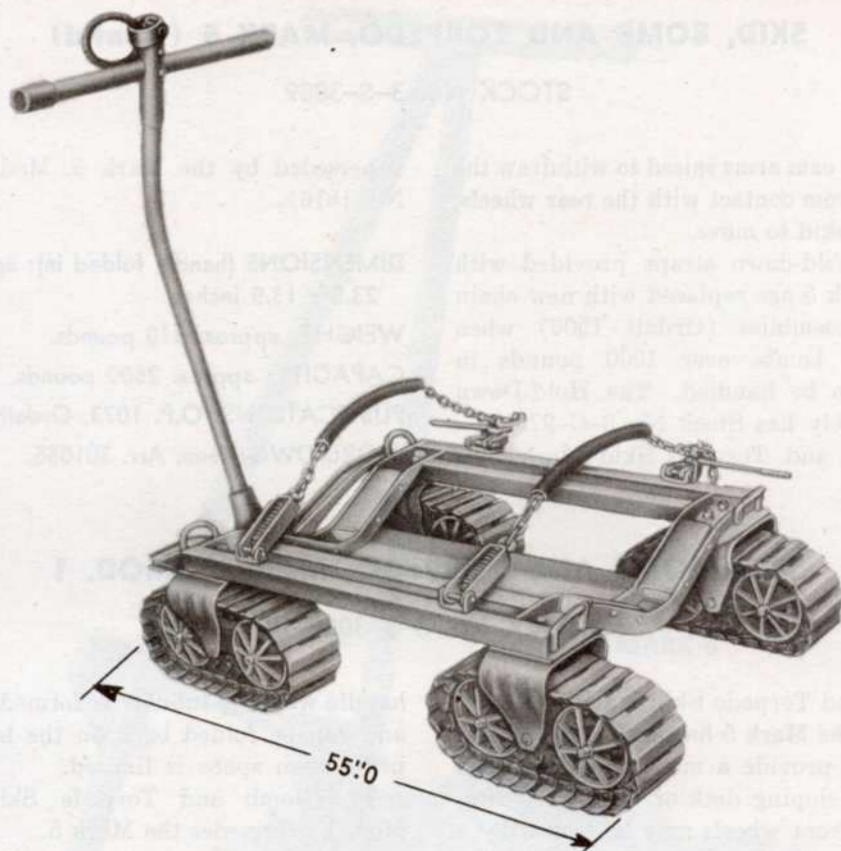
handle which is tubular is formed into a loop and can be folded back on the bomb or torpedo when space is limited.

The Bomb and Torpedo Skid Mark 5, Mod. 1 supersedes the Mark 5.

WEIGHT: approx. 335 pounds.

BuORD DWG: Gen. Arr. 393972.

SKID, BOMB AND TORPEDO, MARK 6



SKID, BOMB AND TORPEDO, MARK 6

STOCK No. 3-S-3091

THE Bomb and Torpedo Skid Mark 6 has a cradle body similar to the Mark 5, but is carried on 4 track-laying wheels by a yoke at each corner of the body. Each yoke is supported by one of 4 short axles specially provided for this skid. Each axle carries one Track Laying Wheel Mark 1.

The capacity of the Mark 6 is one bomb, or one torpedo of the Mark 13 series, up to 2,500 pounds in weight. It is designed for advance base operations, and several loaded skids may be pulled in train when suitably connected. The 2 forward track-laying wheels are steerable, being held together by a tie-rod connecting the front wheel-yoke extensions. The outer end of the tubular towing bar has a cross bar and a nipple. The nipple is provided with a towing eye. When the cross bar is perpendicular to the tow bar it may be used for power or manual towing. It may also be used

as an extension for the tow bar, and the towing eye and nipple are then placed at its extreme end. This position of the eye and nipple is used for power towing although it does not permit towing by T-9 Tractor.

Two chain hold-downs are provided to hold the torpedo or other load securely. Lowering the levers on the hold-down assembly, after the free end of the chain has been inserted into the chain hook, tightens the chain by cam and spring action.

DIMENSIONS:

Overall (excluding drawbar): approx. 55.0 x 36.5 x 19.0 inches.

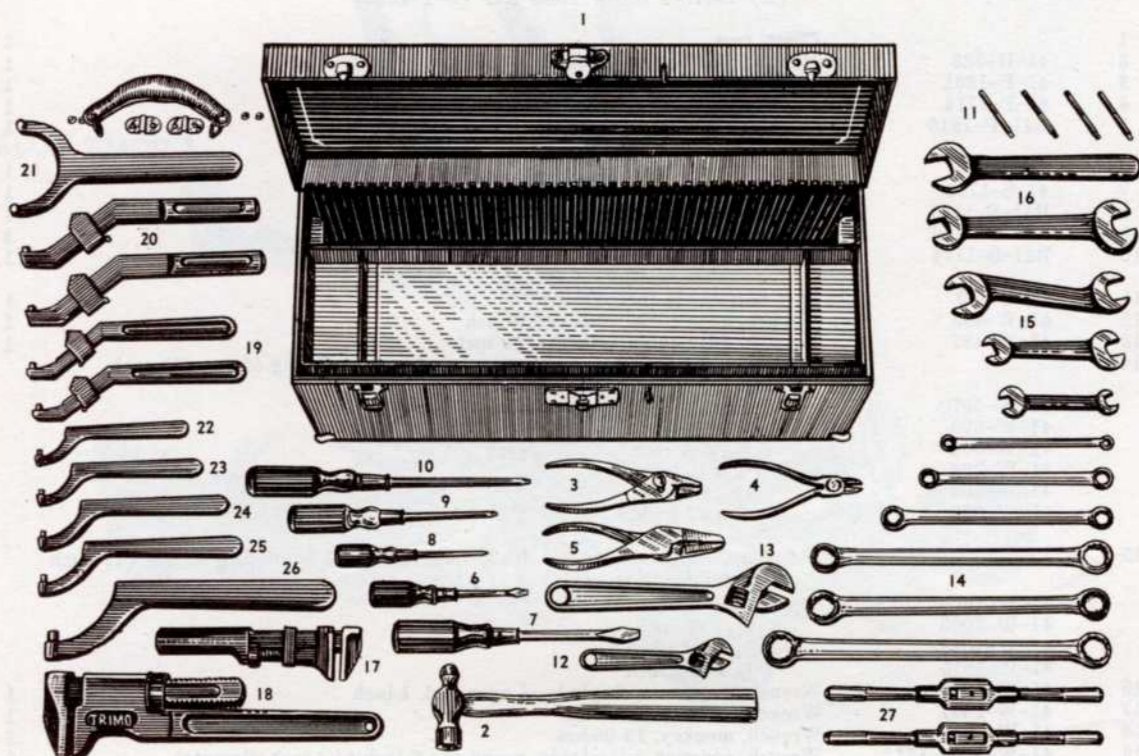
Length (including drawbar): approx. 105.0 inches.

WEIGHT: approx. 550 pounds.

PUBLICATION: O.P. 1073.

BuORD DWGS: SK. 91363, Gen. Arr. 393887.

TOOL KIT, BOMB



TOOL KIT, BOMB

STOCK Nos. 3-T-1025, 3-T-1026

(1) THE items included under the above stock numbers comprise one complete Bomb Tool Kit and are tabulated below. These kits are allowed to ships and shore facilities which support aircraft operations, under the Aviation Ordnance Equipment Allowances to those activities.

(2) The items comprising the complete bomb tool kit are divided into 2 sections:

(a) Items provided in the initial (original) Bomb Tool Kit (Stock No. 3-T-1025)

(b) Items to be provided in Supple-

mentary Kit (Stock No. 3-T-1026) not illustrated

(3) Stock numbers have been listed opposite individual tools to aid in replacement of lost or broken items. All replacement tools may be obtained through the nearest Naval Air Station with the exception of items with stock numbers double starred (**) which will be furnished only upon request to the Bureau of Ordnance.

(4) The complete set is made up of the items included on Ordnance Allowance List No. 17806, Rev. B and listed on the following page.

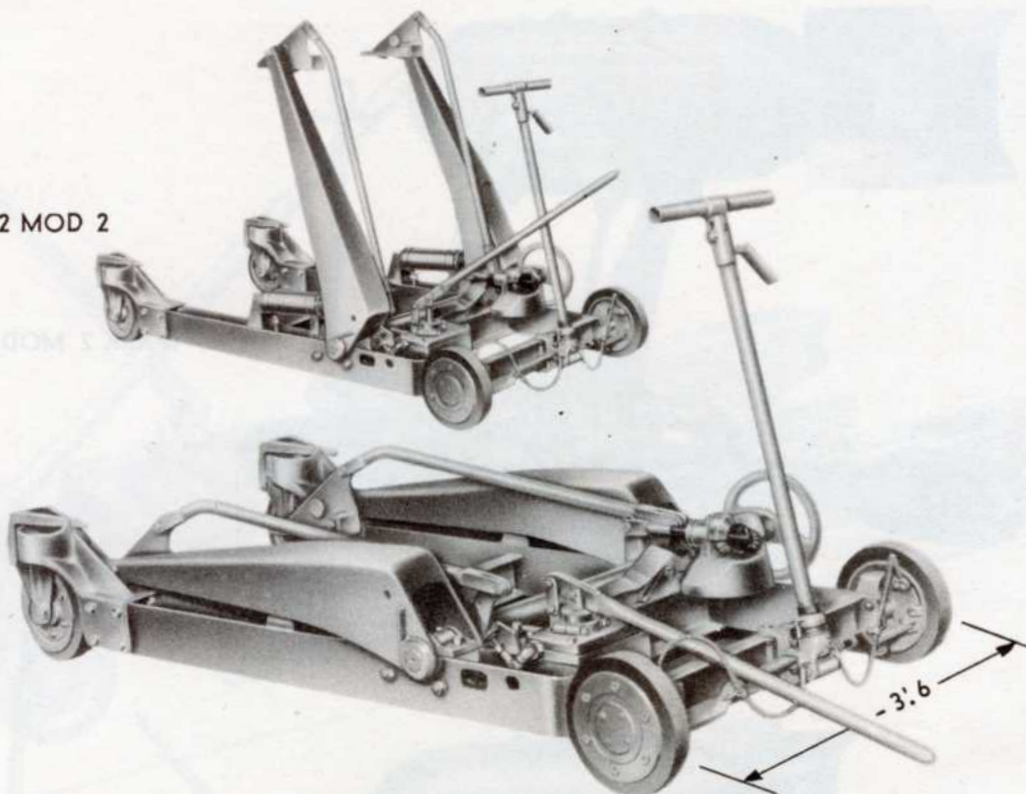
TOOL KIT, BOMB (CONT'D)

ITEM	STOCK NO.	NOMENCLATURE	ALLOWANCE
(A) INITIAL BOMB TOOL KIT (3-T-1025)			
1		Chest, tool	1
2	41-H-523	Hammer, ball peen, 1 pound	1
3	41-P-1631	Pliers, gas, 6 inches	1
4	41-P-1714	Pliers, diagonal cutting, 6 inches	1
5	R41-P-1810	Pliers, long nose, 8 inches	1
6	41-S-1101	Screw driver, common, 3 inches	1
7	41-S-1104	Screw driver, common, 6 inches	1
8	R41-S-1170	Screw driver, Phillips, 3 inches	1
9	R41-S-1172	Screw driver, Phillips, 4 inches	1
10	R41-S-1174	Screw driver, Phillips, 6 inches	1
11	41-T-860	Tap, bottom, 1/4-inch, 28 thread	4
12	41-W-485	Wrench, adjustable, crescent, 6-inch	1
13	41-W-487	Wrench, adjustable, crescent, 10-inch	1
14		Wrenches, double head, 10 degrees, box (set) consisting of one (1) each of the following sizes:	
	41-W-597	5/16 x 3/8 inch	
	41-W-599	7/16 x 1/2 inch	
	41-W-601	9/16 x 5/8 inch	
	41-W-704	3/4 x 7/8 inch	
	41-W-605	13/16 x 7/8 inch	
	41-W-608	15/16 x 1 inch	
15		Wrenches, engineers, double head, open end (set) consisting of one (1) each of the following sizes:	
	41-W-1000	7/16 x 1/2 inch	
	41-W-1005	9/16 x 5/8 inch	
	41-W-1012	3/4 x 13/16 inch	
	41-W-1019	7/8 x 15/16 inch	
16	41-W-1309	Wrench, engineers, single head open end, 1-inch	1
17	41-W-2351	Wrench, monkey, 8 inches	1
18	41-W-2355	Wrench, monkey, 15 inches	1
19	41-W-3250-15**	Wrench, spanner, adjustable, round pin 2-inch to 4-inch diameter	2
20	41-W-3250-70**	Wrench, spanner, adjustable, square pin, 2-inch to 4 3/4-inch diameter	2
21	41-W-3247-500**	Wrench, spanner, face, 4-inch diameter	1
22	41-W-3255-160**	Wrench, spanner, pin 2 1/4-inch diameter	1
23	41-W-3255-170**	Wrench, spanner, pin, 2 1/2-inch diameter	1
24	41-W-3255-190**	Wrench, spanner, pin, 3-inch diameter	1
25	41-W-3255-200**	Wrench, spanner, pin, 3 1/4-inch diameter	1
26	41-W-3255-240**	Wrench, spanner, pin, 5-inch diameter	1
27	41-W-3501	Wrench, tap, adjustable, No. 5	2
(B) SUPPLEMENTARY KIT (3-T-1026)			
28	41-A-20-325**	Adapter, 1/2-inch square drive female to 3/4-inch male	1
29	41-H-1508	Handle, speed, for use with socket wrenches, 1/2-inch square drive, 16 inches long	1
30	R41-P-3187	Punch, center, 5 inches	1
31	41-B-648-100**	Screw driver, drag link, 1 inch bit, 1/2-inch square drive	1
32	41-T-661	Tap, standard hand, tapered, 3/8-inch, 16 thread	2
33	41-W-2449**	Wrench, Allen, 3/32-inch	2
34	R41-W-1400	Wrench, Allen, 3/16-inch	2
35	3-W-1587-300	Wrench, fin lock nut, 5 3/4-inch for bombs (BuOrd Dwg. 422595-2)	2
36	3-W-1587-375	Wrench, fin lock nut, 7-inch for bombs (BuOrd Dwg. 422591-1)	1
37	41-W-3005	Wrench, socket, 7/16-inch, 12 point, 1/2-inch square drive	1
38	41-W-3009	Wrench, socket, 9/16-inch, 12 point, 1/2-inch square drive	1
39	41-W-3015	Wrench, socket, 1 1/16-inch, 12 point, 1/2-inch square drive	1
40	3-W-1588**	Wrench, special spanner, for AN Fuze Mark 30	1

WEIGHT (original kit only): approx. 40.0 pounds.

TRUCK, BOMB AND TORPEDO, MARK 2 MODS.

MARK 2 MOD 2



TRUCK, BOMB AND TORPEDO, MARK 2, MOD. 2

STOCK No. 3-T-1343

THE Bomb and Torpedo Truck Mark 2, Mod. 2 is a 4-wheel, high-lift truck with a capacity of 2500 pounds, and a maximum lift of approximately 48 inches above the deck. The rubber-treaded wheels are 11 inches in diameter. A hand-operated hydraulic pump operates the lifting mechanism. The skid and its load may be tilted fore and aft by means of an auxiliary hand wheel and gearing.

Internal brake-shoes normally lock the front wheels against movement; squeezing the brake lever against the tee-handle releases the brakes. The brake control handle must be held in this position while the truck is in motion.

Each rear wheel is separately hung and supported by a rotatable caster yoke sus-

pended from a bracket bolted to the end of the side frame. Each rear wheel may be steered or locked against caster rotation by means of its caster handle.

A torpedo rest plate is attached to the forward cross-beam to support the overhanging end of a torpedo.

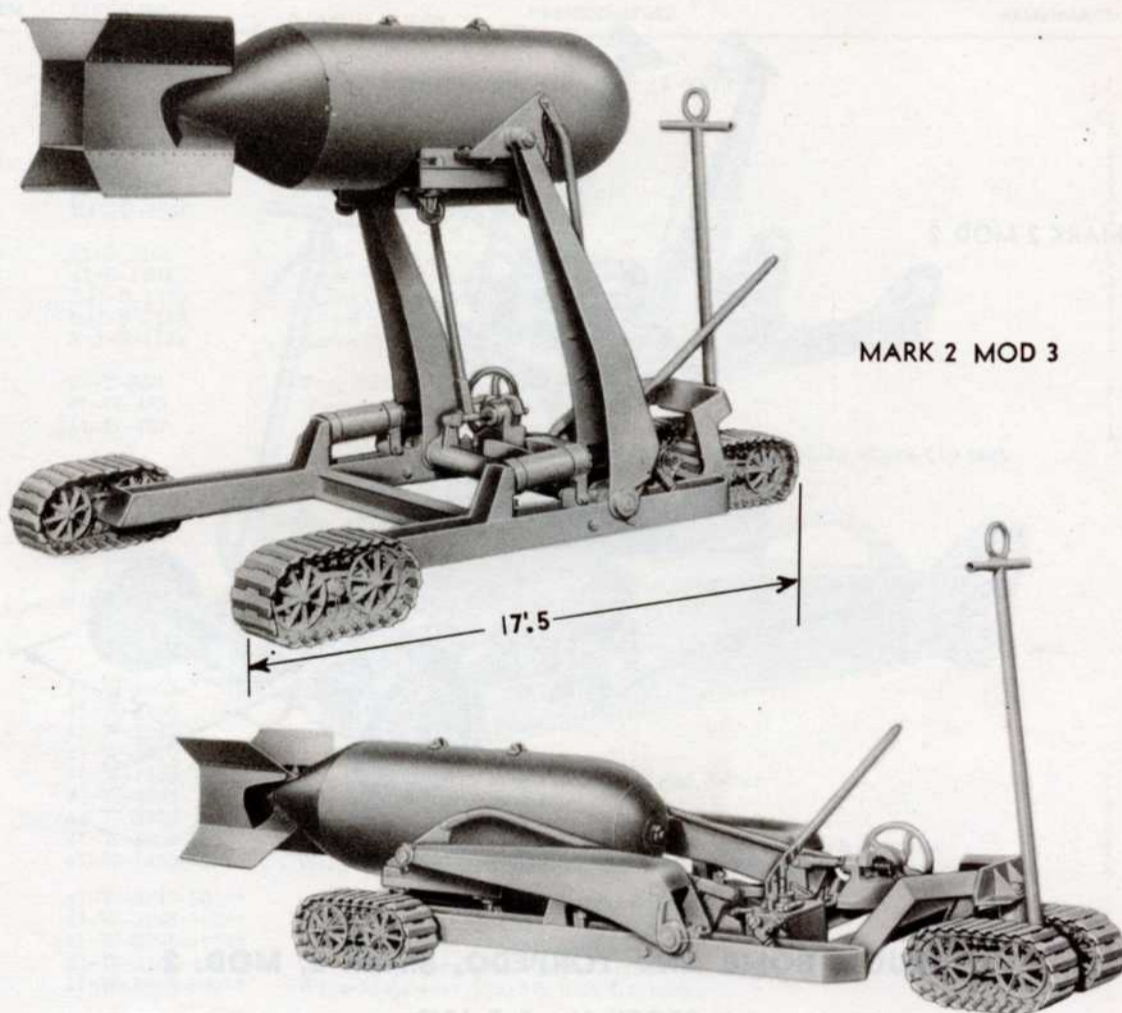
DIMENSIONS (with handle folded): approx. 7.1 x 3.6 x 17.4 feet.

WEIGHT: approx. 1020.0 pounds.

PUBLICATIONS: O.P. 1073, Catalog No. 2141
Manley Manufacturing Division of American Chain & Cable Co., Inc.

BuORD DWGS: SK. 90755, Gen. Arr. 300576 and 300577.

TRUCK, BOMB AND TORPEDO, MARK 2 MODS.(CONT'D)



MARK 2 MOD 3

TRUCK, BOMB AND TORPEDO, MARK 2, MOD. 3

STOCK No. 3-T-1344

THE Bomb and Torpedo Truck Mark 2, Mod. 3 is a high-lift truck with approximately the same frame and lifting mechanism as Mark 2, Mod. 2, but is equipped with 4 Track Laying Wheels Mark 1 (Stock No. 3-W-1250), instead of the ordinary wheels. The braking mechanism also is removed from Mark 2, Mod. 2, and some minor changes were made in frame details of the latter. This truck is used over soft and rough ground where wheeled vehicles cannot be operated effectively.

The truck has a turning radius of 4.7 feet and will raise a Torpedo Mark 13 Type so

that the top of the torpedo is 5.7 feet above the ground.

This truck was procured only in limited quantity.

DIMENSIONS (without handle): approx.

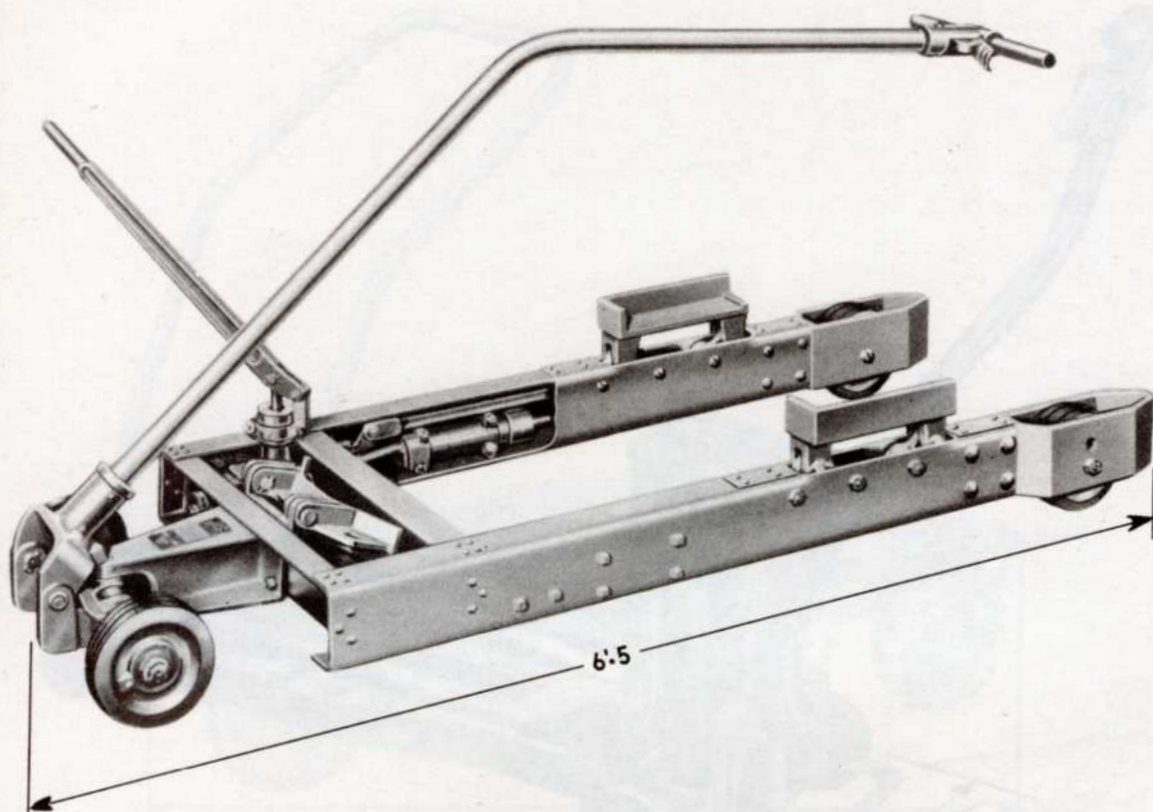
4.3 x 17.5 feet.

WEIGHT: approx. 1105.0 pounds.

PUBLICATIONS: O.P. 1073, Catalogue No. 2141, Manley Manufacturing Division of American Chain & Cable Co., Inc.

BuORD DWGS: SK. 108645, Gen. Arr. 375907 and 375708.

TRUCK, BOMB AND TORPEDO, MARK 3



TRUCK, BOMB AND TORPEDO, MARK 3

STOCK No. 3-T-1346

THE Bomb and Torpedo Truck Mark 3 is a low-lift type for picking up a skid with a maximum load of 2500 pounds. The 4 rubber-treaded wheels are 7 inches in diameter. A handle-operated hydraulic pump and pressure system raises the 2 supporting saddles about 2 inches so the skid will clear the deck or runway during transportation. The load is lowered by turning the valve wheel which releases the oil pressure in the cylinders.

Internal brake-shoes normally lock the front wheels against movement; squeezing the brake lever against the tee-handle releases the brakes. The wheels revolve only when the brake lever is held against the tee-handle.

The front wheels and axle may be swung 45 degrees either way. The drawbar may be

folded back on the body or load. The rear wheels are non-swiveling, being supported on bearings and axles in the wheel yokes bolted to the rear ends of the frame. The frame has front cross-members only and is open at the rear. A steady rest is attached to the cross-member, to support the overhanging forward end of a torpedo.

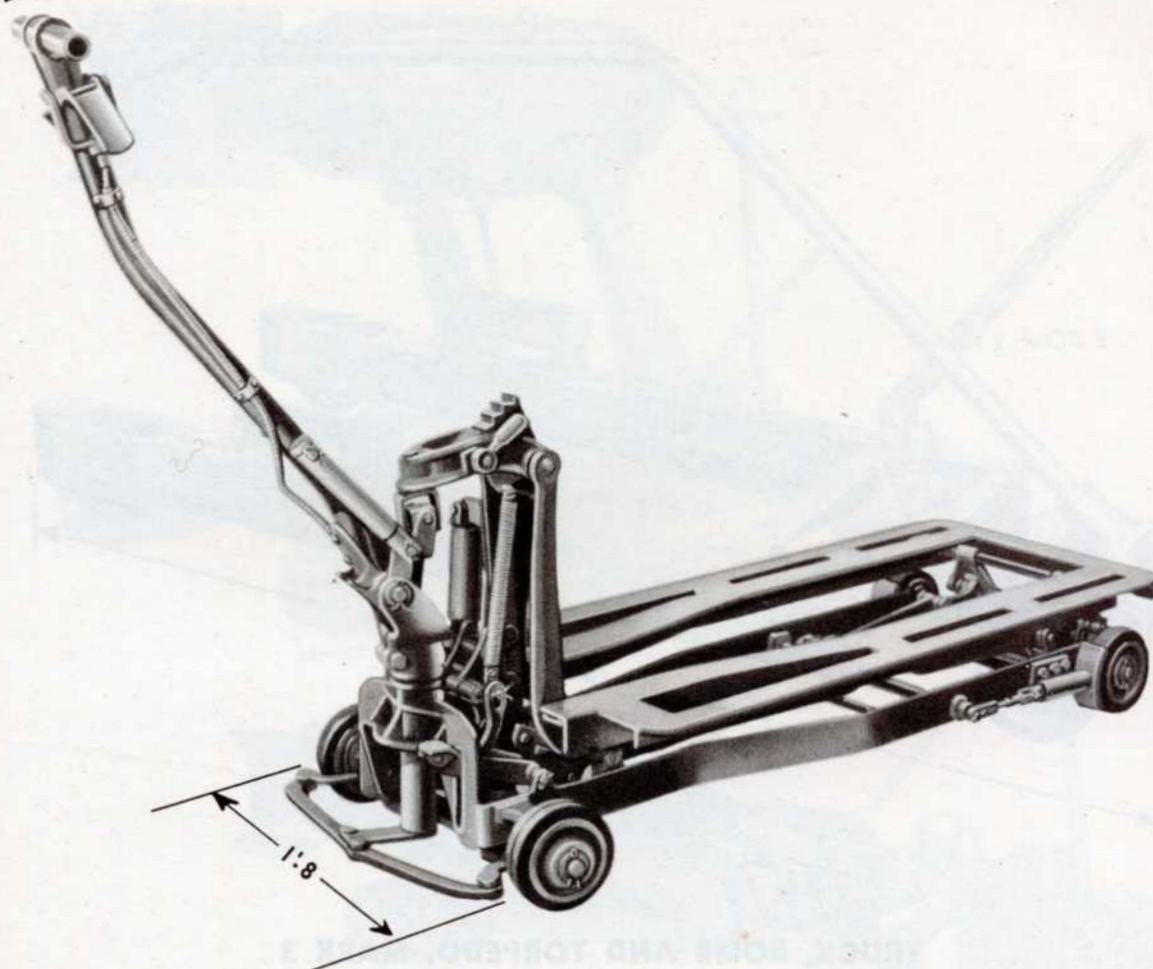
DIMENSIONS (with handle folded): approx. 6.5 x 2.5 x 1.8 feet.

WEIGHT: approx. 218.0 pounds.

PUBLICATIONS: C.P. 1073, Catalogue No. 2106, Manley Manufacturing Division of American Chain & Cable Co., Inc.

BuORD DWGS: SK. 90822, Gen. Arr. 300970.

TRUCK, BOMB AND TORPEDO, MARK 4



TRUCK, BOMB AND TORPEDO, MARK 4

STOCK No. 3-T-1352

THE Bomb and Torpedo Truck Mark 4 is a low-lift type, designed primarily to slide under a bomb skid such as the Mark 4, and to raise and manually transport a load of 2500 pounds. The platform, about 22 by 50 inches, is raised 2 inches by means of a ratchet and toggle mechanism, which is operated by raising and lowering the towing handle. The load is lowered by depressing a foot pedal, the speed of lowering being retarded by a hydraulic piston. In the down position, the platform top is 7 inches above the deck.

The tee-grip towing handle swings the

pivoted front axle and wheels in a sharp turning angle. The wheels are normally locked against rotation; squeezing the brake lever against the tee-handle releases the brakes. The wheels revolve only when the brake lever is held against the tee-handle.

The 4 rubber-treaded wheels are 6 inches in diameter.

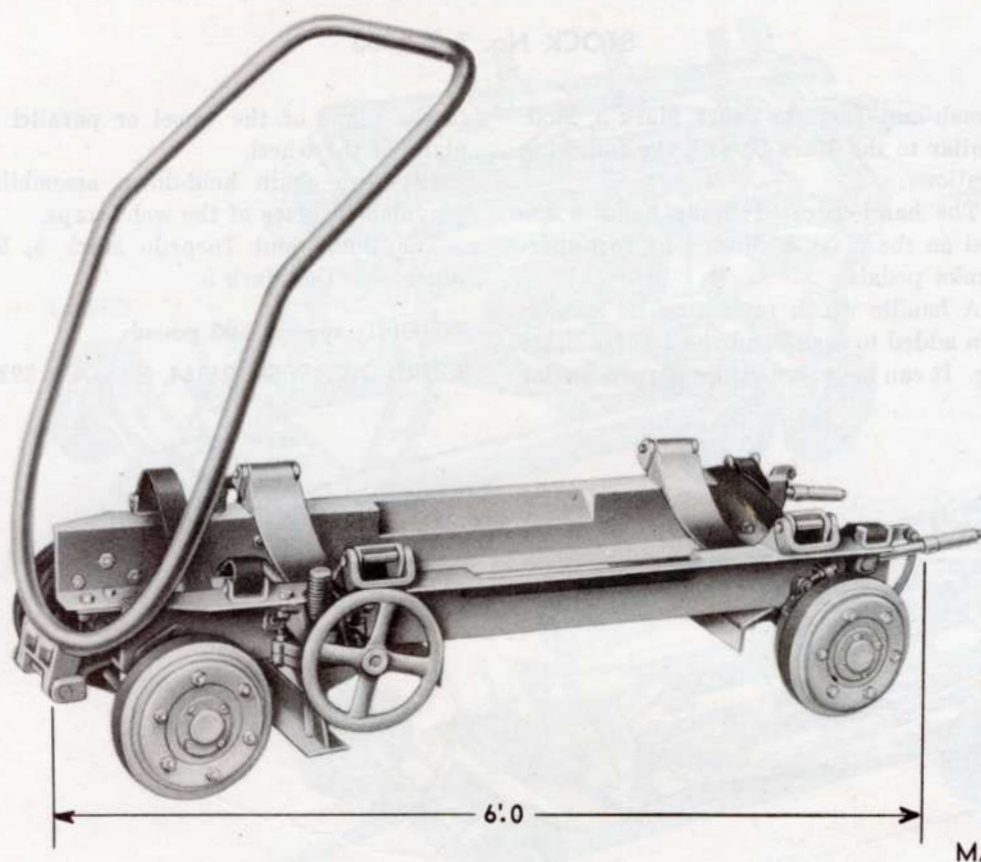
DIMENSIONS: approx. 5.9 x 3.8 x 1.8 feet.

WEIGHT: approx. 375.0 pounds.

PUBLICATION: O.P. 1073.

BuORD DWG: Gen. Arr. 182949.

TRUCK, BOMB AND TORPEDO, MARK 5 AND MODS.



TRUCK, BOMB AND TORPEDO, MARK 5

STOCK No. 3-T-1356

THE Bomb and Torpedo Truck Mark 5 is a cradle-bed type of 2500 pounds capacity, primarily designed to support and transport a torpedo of the Mark 13 type. It is provided with 2 jackscrews which are used to raise the front end of the truck to facilitate the securing of the torpedo to the airplane. A handwheel on each side of the truck operates worm gearing and a jackscrew. Rotating the hand wheels will elevate and tilt the truck as required.

Each rear wheel is separately braked by a handle at the rear. The brake is applied by raising the handle, which can be set for any desired braking by means of a ratchet setting.

The truck is moved and steered by a loop handle or drawbar made of bent piping attached to the center-pivoted front axle. The 4 rubber-treaded wheels are 11 inches in diameter. Web straps are provided to retain the torpedo in place.

The Bomb and Torpedo Truck Mark 5 is being replaced by the Mark 5, Mod. 1.

DIMENSIONS (without handle): approx. 6.0 x 2.3 x 1.3 feet.

WEIGHT: approx. 487 pounds.

PUBLICATION: O.P. 1073.

BuORD DWGS: SK. 90451, Gen. Arr. 273167.

TRUCK, BOMB AND TORPEDO, MARK 5 AND MODS. (CONT'D)

TRUCK, BOMB AND TORPEDO, MARK 5, MOD. 1

STOCK No. 3-T-1360

THE Bomb and Torpedo Truck Mark 5, Mod. 1 is similar to the Mark 5, with the following modifications:

(1) The hand-operated brake handles are replaced on the Mark 5, Mod. 1 by foot-operated brake pedals.

(2) A handle which rotates on its spindle has been added to each handwheel to facilitate turning. It can be locked either perpendicular

to the plane of the wheel or parallel to the plane of the wheel.

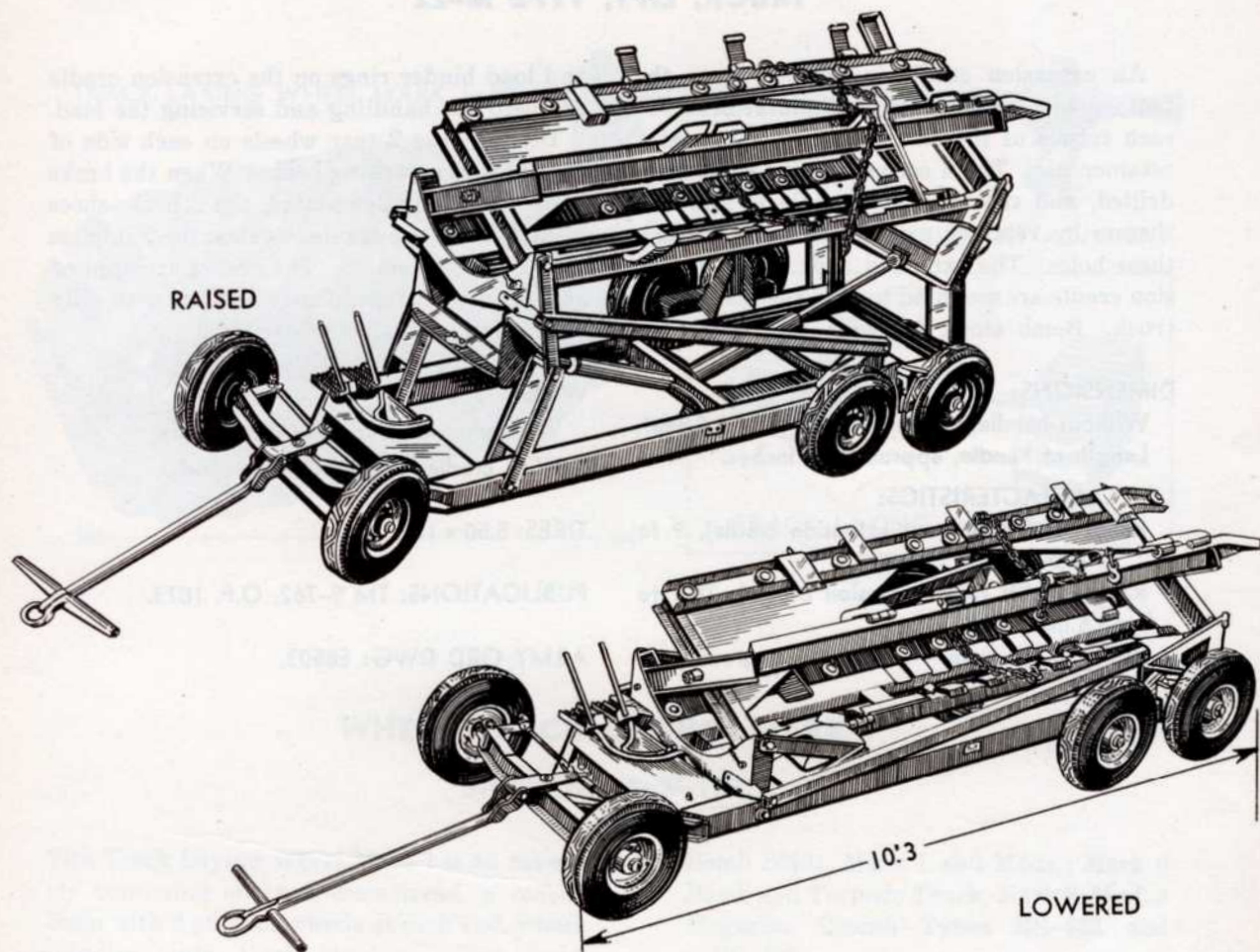
(3) Two chain hold-down assemblies are provided in place of the web straps.

The Bomb and Torpedo Mark 5, Mod. 1 supersedes the Mark 5.

WEIGHT: approx. 500 pounds.

BuORD DWGS: SK. 91364, Gen. Arr. 393819.

TRUCK, LIFT, TYPE M-22



TRUCK, LIFT, TYPE M-22

STOCK No. 3-T-1450

THE Lift Truck Type M-22 is a 6-wheel low-slung trailer type, designed for manual or tow-train power transportation of a bomb or torpedo not exceeding 4000 pounds, and for raising the cradle and load 2 feet higher than its carrying position. This truck handles the light case bomb AN-M56, or an aircraft torpedo of the Mark 13 type. Two or more of these loaded trucks may be hitched together and towed by a power vehicle.

In manual transportation, the pivoted front axle, tie-rods and wheels are swung by a tee-grip provided on the handle. The truck may be turned in a 14-foot radius. A beam on each

side of the frame carries the 2 stub axles and the tandem wheels.

The bomb or torpedo rests in the cradle, and is supported by 9 ball transfers along each side. The load is held by 2 chains, which are tightened by a load binder or lever-operated hold-down device, and fore-and-aft movement is prevented by 4 bomb stops. The loaded cradle is raised from the low or carrying position by 2 separate, hand-operated hydraulic pumps. A valve which slowly releases oil from the hydraulic cylinders is operated to lower the cradle.

TRUCK, LIFT, TYPE M-22 (CONT'D)

TRUCK, LIFT, TYPE M-22

An extension cradle is shipped from the factory with each truck. A chain attached to each corner of the extension cradle carries a retainer pin. The 4 corners of the cradle are drilled, and the extension cradle is attached thereto by retainer pins which pass through these holes. The extended ends of the extension cradle are mounted toward the rear of the truck. Bomb stops, brackets, ball transfers,

and load binder rings on the extension cradle are used for handling and servicing the load.

Between the 2 rear wheels on each side of the truck is a parking brake. When the brake handle is manually rotated, the 2 brake-shoes of each brake are applied against the 2 tandem tires by toggle action. The brakes are applied and released independently and are used only when the truck is being parked.

DIMENSIONS:

Without handle, approx. 10.3 x 4.7 x 1.5 feet.
Length of handle, approx. 44.8 inches.

LIFT CHARACTERISTICS:

Range of lift (without extension cradle), 9 to 33 inches.
Range of lift (with extension cradle), 25.5 to 49.5 inches.
Tilting angle, from -15 to +15 degrees.

WEIGHT:

Without cradle, approx. 950 pounds.
With cradle, approx. 1400 pounds.

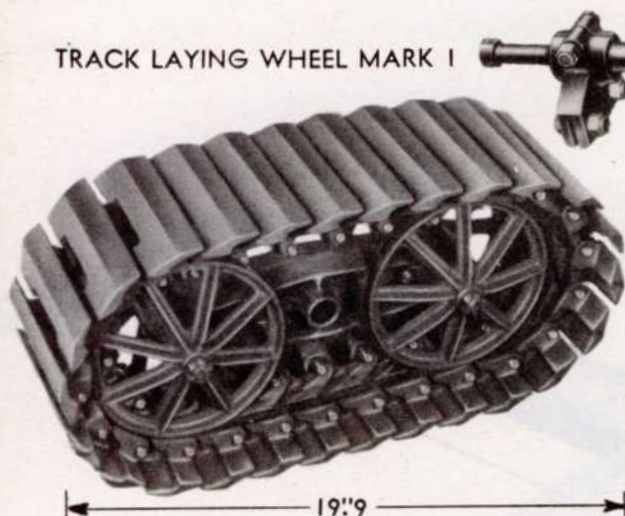
TIRES: 5.50 x 18.

PUBLICATIONS: TM 9-762, O.P. 1073.

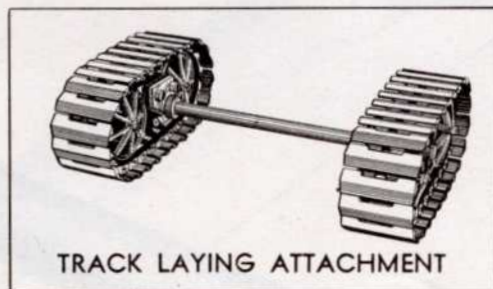
ARMY ORD DWG: E8503.

WHEEL TRACK LAYING, MARK 1

TRACK LAYING WHEEL MARK 1



AXLE FOR TRACK LAYING ATTACHMENT



TRACK LAYING ATTACHMENT

WHEEL, TRACK LAYING, MARK 1

STOCK No. 3-W-1250

THE Track Laying Wheel Mark 1 is an assembly consisting of an endless tread, a rocker beam with 2 pairs of wheels at each end, wheel spindles, nuts, track pins, etc. Two or 4 track-laying wheels are used in place of ordinary wheels when heavy loads are moved over such soft ground that wheeled vehicles would be unsuitable.

The endless tread consists of 26 track shoes, each 6 inches wide, which are pinned together to form a continuous truss as the tread moves over the ground.

When an axle and 2 brackets (Stock No. 3-A-900) are used with 2 of the track laying wheels, the item becomes a Track Laying Attachment (Stock No. 3-A-700). The attachment is used with the following equipment:

Bomb Skids, Mark 1 and Mods.; Mark 6 Bomb and Torpedo Truck, Mark 2, Mod. 3 Magazine Cranes Types ES-433 and ES-437

Before the attachment can be installed on the Bomb Skid Mark 1, Mod. 1, the 2 rubber-tired wheels, brake arms and brake shoes on the skid must be removed. Also, 2 holes must be drilled in each side of the skid for bolting on the brackets.

Bomb Skids Mark 1, Mods. 2 and 3 are supplied with the bracket holes already drilled and minus the rubber-tired wheels.

One Spare Parts Set (Stock No. 3-S-3642) for Track Laying Attachment is issued for every 10 pairs of the attachment.

DIMENSIONS:

WEIGHT:

PUBLICATION:

BuORD DWG:

WHEEL

approx. 19.9 x 9.6 x 6.0 inches.

approx. 81.5 pounds.

O.T.I. V-40-43.

Gen. Arr. 329123.

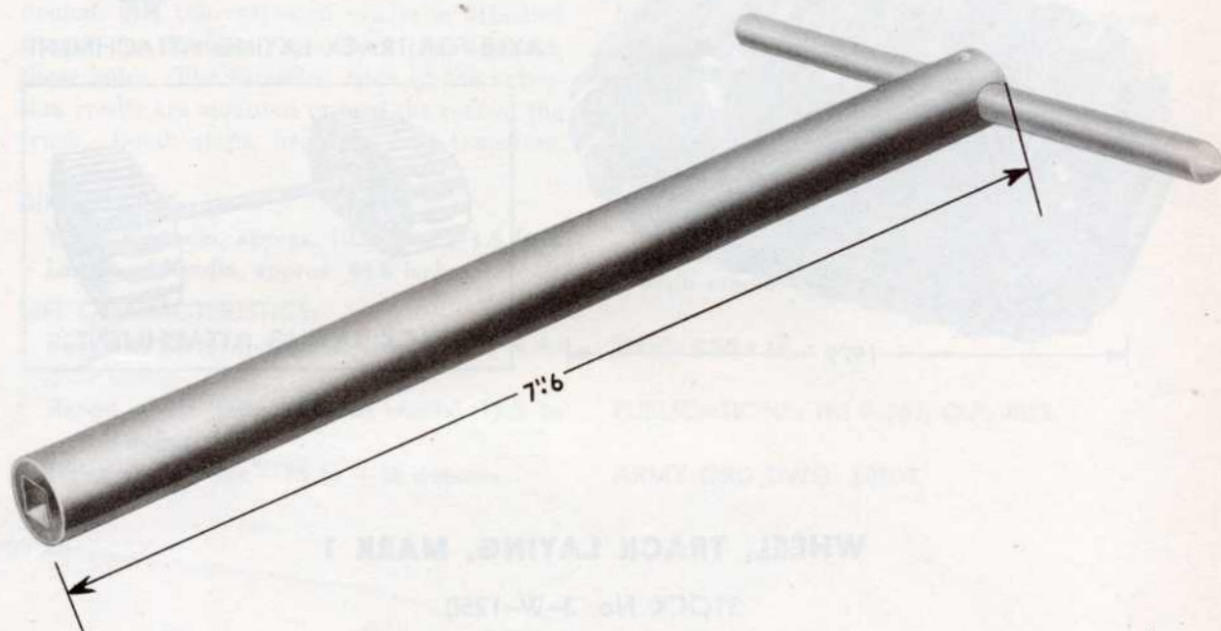
ATTACHMENT

32.5 x 24.0 x 9.4 inches.

182.7 pounds.

Gen. Arr. 300659.

WRENCH, DEPTH SETTING, TORPEDO



WRENCH, DEPTH SETTING, TORPEDO

STOCK No. 3-W-1580

THE Torpedo Depth Setting Wrench is a tee-handled, socket wrench used to set the depth setting mechanism of Aircraft Torpedoes Mark 13 and Mods. The socket is 0.3-inch square and 0.5-inch deep.

The steel shaft of the wrench is 7.5 inches long and 0.5-inch in diameter. The handle, 4

inches long, is set in a hole drilled near the end of the shaft, and is held in place with a rivet.

The torpedo depth setting wrenches are included on allowance lists for PBM-3 airplanes.

DIMENSIONS: approx. 7.6 x 4.0 x 0.5 inches.

WEIGHT: approx. 0.5 pound.

PUBLICATION: O.D. 3561.

BuORD DWGS: 46147, Piece Nos. 2, 6 and 13.

WRENCH, SPECIAL SPANNER (FOR AN FUZE) MARK 30



WRENCH, SPECIAL SPANNER (FOR AN FUZE MARK 30)

STOCK No. 3-W-1588

THIS Special Spanner Wrench is used to remove an Army fuze adapter from Bombs AN Type M-64, M-65, and M-66. The adapter must be removed before the AN Fuze Mark 30 can be installed in the bomb.

The wrench consists of a piece of 1-inch galvanized pipe approximately 16 inches long and flattened at one end. A tapered wrench

head is attached to this end with 3 rivets. The claws of the head fit into corresponding slots in the Army fuze adapter.

DIMENSIONS: approx. 18.0 x 3.1 x 1.0 inches.

WEIGHT: approx. 2.6 pounds.

BuORD DWG: SK. 99725.

NOTES

SMOKE SCREEN EQUIPMENT

SMOKE SCREEN EQUIPMENT

CARRIER, SMOKE TANK

CONES, SMOKE TANK TAIL

CYLINDERS, CARBON DIOXIDE

FILLING EQUIPMENT, CHEMICAL

TANKS, SMOKE

TUBES, EXHAUST

VALVE, CO₂ REGULATOR

CARRIER, SMOKE SCREEN TANK, MARK 1

STOCK No. 3-C-434

NOTES

CARRIER, SMOKE SCREEN TANK, MARK 1



CARRIER, SMOKE SCREEN TANK, MARK 1

STOCK No. 3-C-780

THE Smoke Screen Tank Carrier Mark 1 is used to lift and carry Smoke Tanks Mark 5 and Mods. or Mark 6 and Mods. The carrier consists of 2 steel plates between which are riveted a pair of hooks. The hooks, which are spaced 14 inches on centers, are placed at one end of the beam. A lifting eye is riveted midway between the hooks for horizontal carrying. A latch locks into a lug on the tank so that the carrier cannot slip out of place.

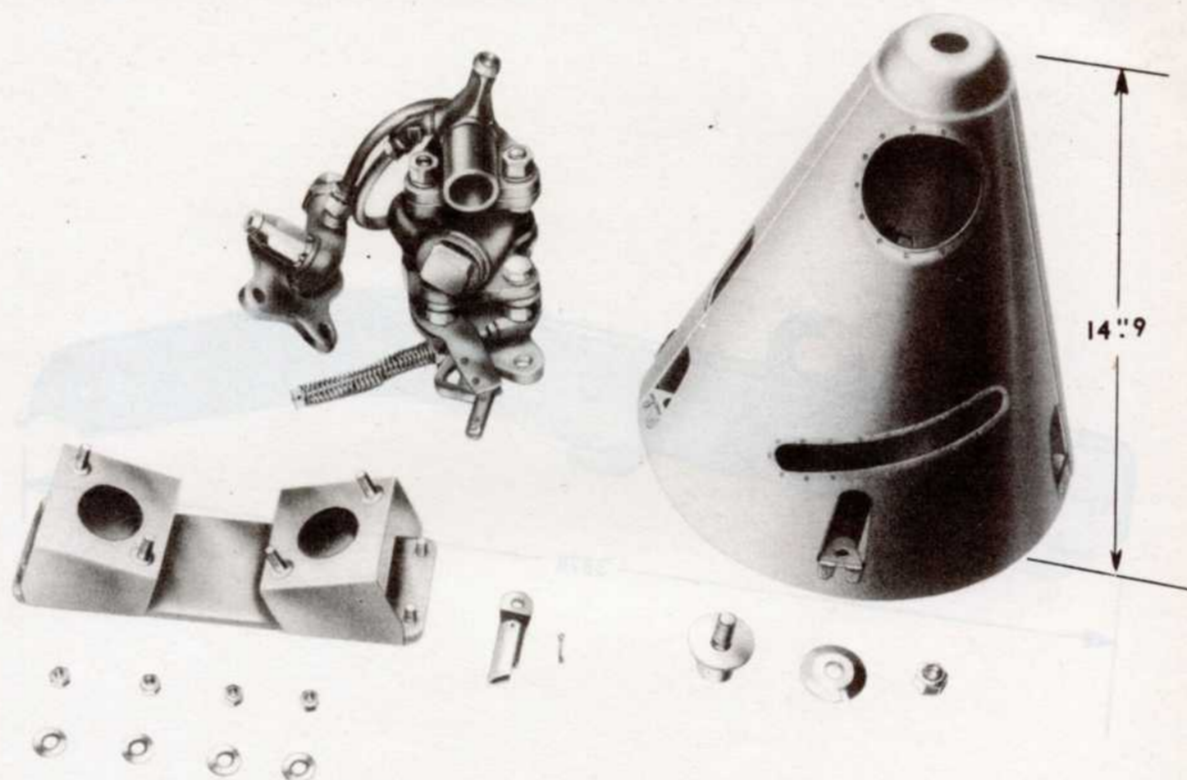
A lifting shackle at the other end of the carrier is used for vertical carrying. This end of the carrier is bent about 15 degrees, to conform to the contour of the smoke tank. Both vertical lifting and carrying are required to stow tanks vertically in close quarters, or to lift the tanks through restricted openings.

DIMENSIONS: approx. 38.8 x 12.0 x 5.0 inches.

WEIGHT: approx. 17.5 pounds.

BuORD DWG: Gen. Arr. 328095.

TAIL CONE ASSEMBLY FOR SMOKE SCREEN TANKS, MARK 5 AND MODS. AND MARK 6 AND MODS.



TAIL CONE ASSEMBLY FOR SMOKE SCREEN TANKS, MARK 5 AND MODS.

STOCK No. 3-T-125

THE Tail Cone Assembly is an essential part of the Smoke Screen Tanks Mark 5 and Mods. It is a cone shaped unit containing the intake connection and check-safety valve and relief tube for the carbon dioxide lines. It also contains the discharge valve and release lever; and the swivel joint to which the exhaust tube is connected.

This tail cone may be used with a Smoke

Screen Tank Mark 6 by altering the relief valve and using a shorter tube. This is necessary due to the angular difference in the connecting flanges of the 2 types of tanks.

DIMENSIONS: approx. 14.9 x 12.3 x 12.3 inches.

WEIGHT: approx. 23.8 pounds.

PUBLICATIONS: O.P. 723, O.C.L. V-24-43.

BuORD DWG: Gen. Arr. 267898.

TAIL CONE ASSEMBLY FOR SMOKE SCREEN TANKS MARK 6 AND MODS.

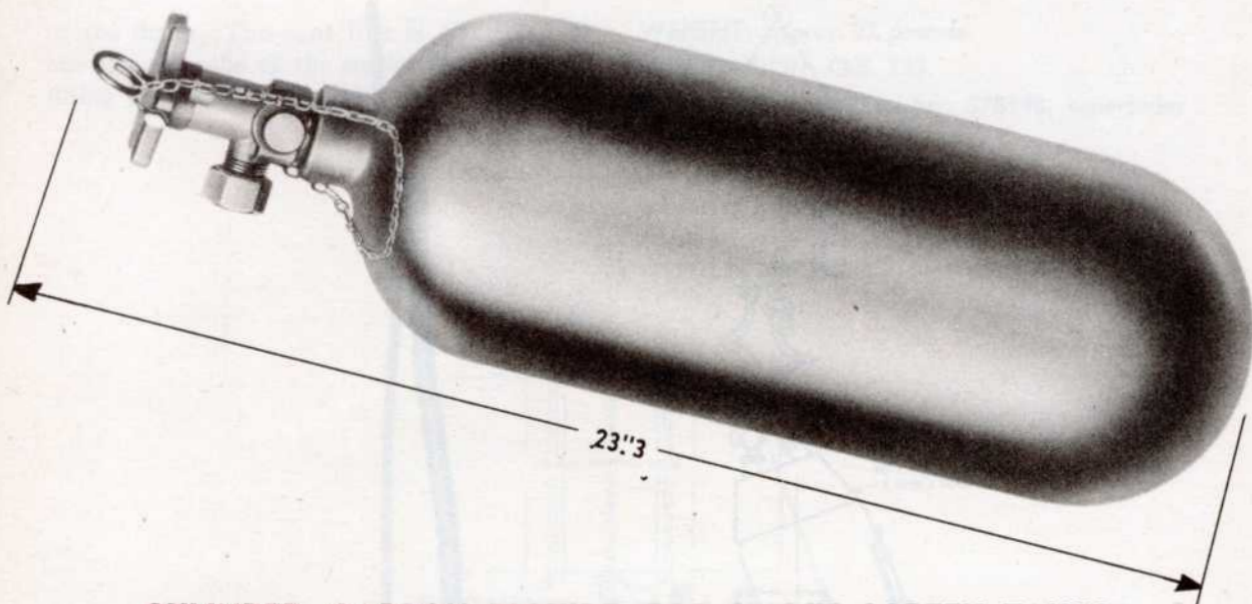
STOCK No. 3-T-126

THE Tail Cone Assembly for Smoke Screen Tanks Mark 6 and Mods. is identical with the one for Tanks Mark 5 and Mods. except it has a shorter relief tube leading from the relief

valve to the swivel joint.

This tail cone may be installed on Smoke Screen Tanks Mark 5 and Mods. by using a longer tube.

CYLINDER, CARBON DIOXIDE, FOR SMOKE SCREEN TANKS, MARK 5 AND MODS. AND MARK 6 AND MODS.



CYLINDER, CARBON DIOXIDE, FOR SMOKE SCREEN TANKS, MARK 5 AND MODS.

STOCK No. 3-C-2520

THE Carbon Dioxide Cylinder for Smoke Screen Tanks Mark 5 and Mods. is filled with carbon dioxide under pressure and is used to force the smoke mixture out of the tank when laying a smoke screen. It is connected to the smoke screen tank by copper tubing. The steel cylinder, used with the Carbon Dioxide Regulator Valve (Stock No. 3-V-120),

is equipped with a nozzle-protecting cup and a quick-opening valve operated by a hand wheel.

The cylinder which has a capacity of 12.6 pounds of carbon dioxide, is standard equipment for Smoke Screen Tanks Mark 5 and Mods. It may also be used with Smoke Screen Tanks Mark 6 and Mods.

DIMENSIONS: approx. 23.3 x 6.8 x 6.8 inches.

PUBLICATION: O.P. 723.

WEIGHT: approx. 20.0 pounds.

BuORD DWG: Outline 199095.

CYLINDER, CARBON DIOXIDE, FOR SMOKE SCREEN TANKS, MARK 6 AND MODS.

STOCK No. 3-C-2525

THE Carbon Dioxide Cylinder for Smoke Screen Tanks Mark 6 and Mods. is similar to the one used for Tanks Mark 5 and Mods.,

except that it has a capacity of only 7.25 pounds of carbon dioxide, and is used only with the Tanks Mark 6 and Mods.

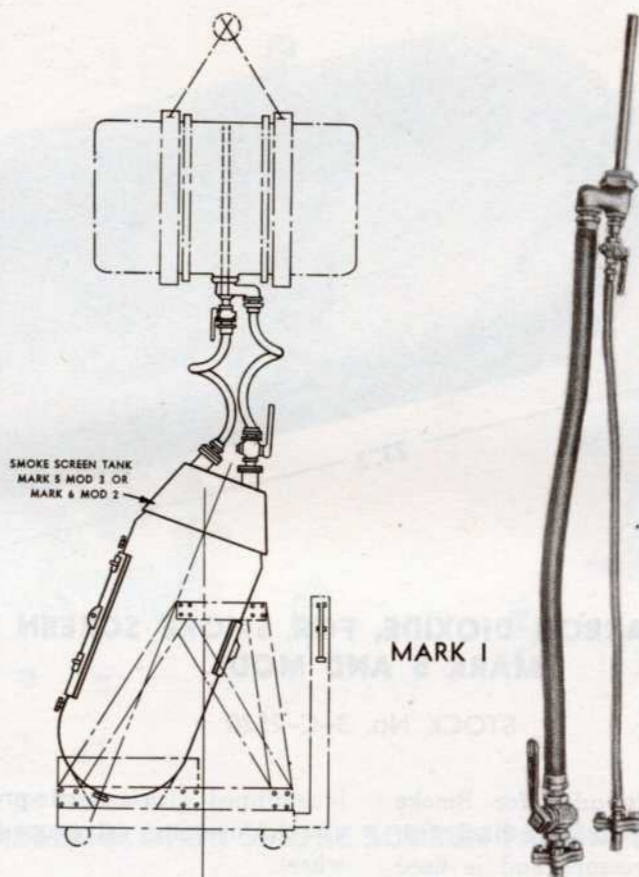
DIMENSIONS: approx. 22.5 x 5.3 x 5.3 inches.

PUBLICATION: O.P. 723.

WEIGHT: approx. 15.3 pounds.

BuORD DWG: Outline 199095.

FILLING EQUIPMENT, CHEMICAL, MARK 1 AND MOD.



FILLING EQUIPMENT, CHEMICAL, MARK 1

STOCK No. 3-F-110

THE Chemical Filling Equipment Mark 1 connects the Smoke Screen Tanks Mark 5 and Mods. and Mark 6 and Mods., during filling operations, to a suspended shipping drum of smoke screen chemical or other liquid chemical.

The equipment consists of a special drainage elbow with a replaceable strainer, snap ring, and gasket; a vent pipe with bushing; a Monel metal, braid-covered filling hose with male couplings, flange and nipple; a straightway filling cock; a Monel vent hose with male couplings; a straightway vent cock; and 2 ring (flange) gaskets. The elbow is screwed into the side outlet fitting of the suspended drum

and the vent pipe is inserted into the drum.

Safety equipment, including gas masks, protective clothing and decontaminating agents for cleaning the equipment is provided for personnel operating the chemical filling equipment.

During the filling operation the smoke screen tank is normally supported on its nose end in a special rack set on a platform scale. The longitudinal axis of the tank is placed at an angle of 20 degrees from the vertical. The scale measures the required weight of chemical which flows from the drum into the tank. The vent hose and pipe release the air displaced from the tank into the upper part

FILLING EQUIPMENT, CHEMICAL, MARK 1 AND MOD.

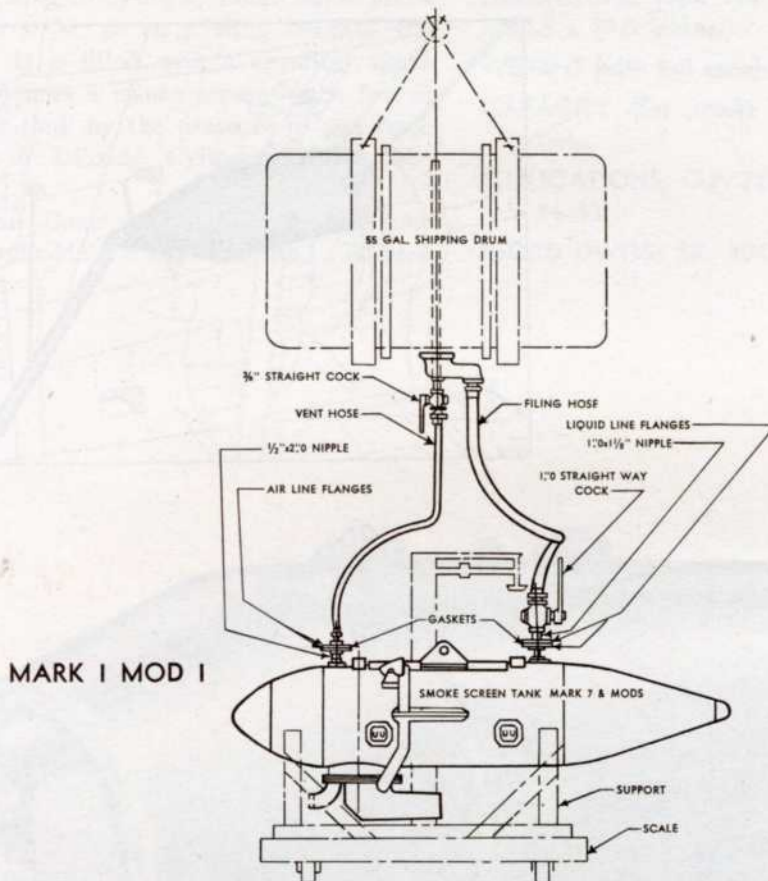
FILLING EQUIPMENT, CHEMICAL, MARK 1 (Cont'd)

of the drum. The vent line is connected to one flanged tube of the smoke tank, and the filling line to the other tube.

WEIGHT: approx. 22 pounds.

PUBLICATION: O.P. 723.

BuORD DWGS: Gen. Arr. 375148, supersedes 328899.



FILLING EQUIPMENT, CHEMICAL, MARK 1, MOD. 1

STOCK No. 3-F-112

THE Chemical Filling Equipment Mark 1, Mod. 1 is used to fill Smoke Screen Tanks Mark 7 and Mods. It consists of the same parts as Filling Equipment Mark 1. In addition, it has 2 flange adapters comprising 2 flanges, 2 nipples, and 8 stud bolts with hexagon nuts.

The supporting rack for the smoke screen tank is of different design from the Mark 1.

It supports the tank horizontally, with the vent and filling hose fittings on top. The filling operation is similar to that for the Mark 1.

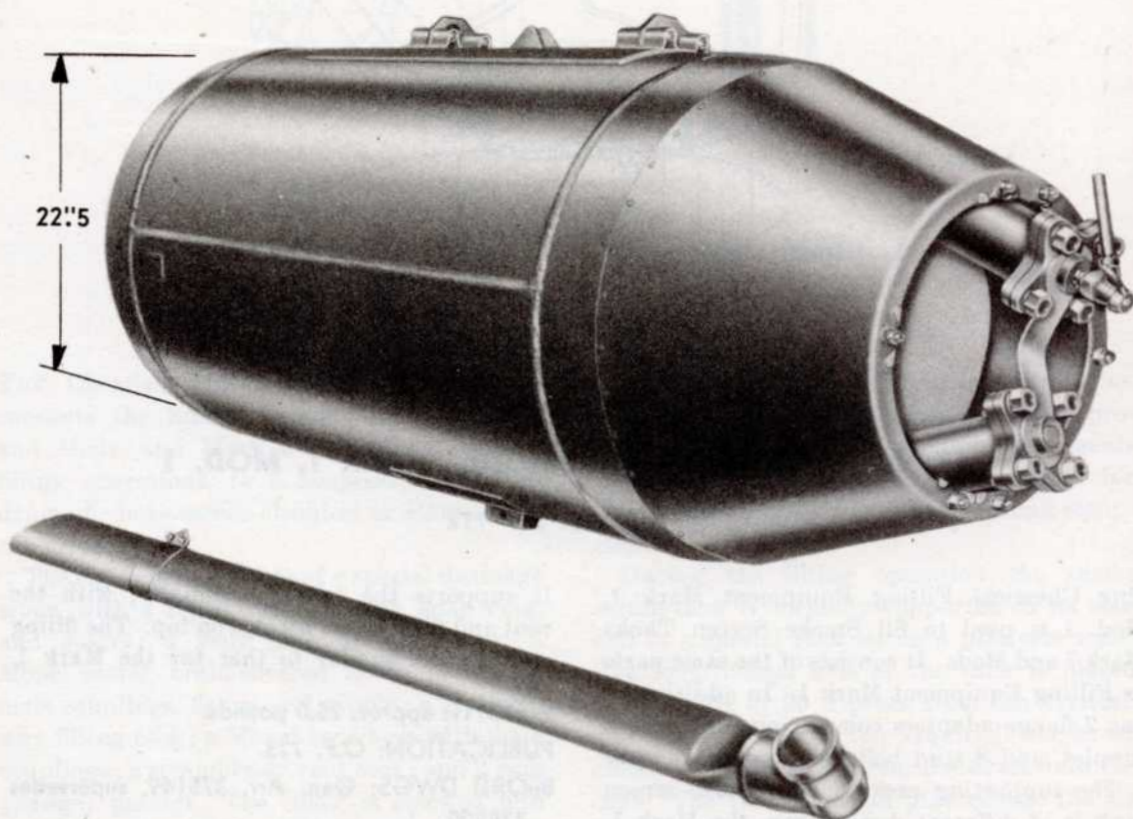
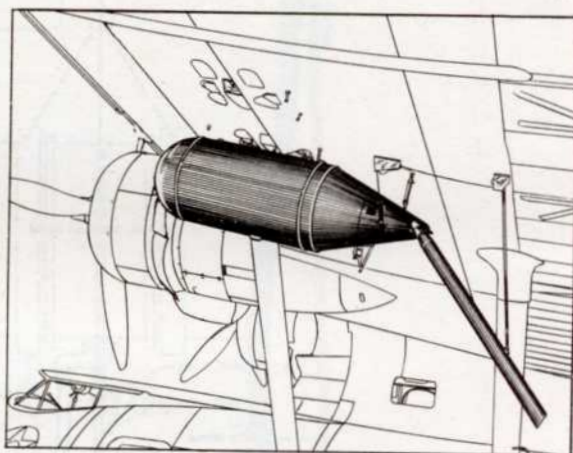
WEIGHT: approx. 25.0 pounds.

PUBLICATION: O.P. 723.

BuORD DWGS: Gen. Arr. 375149, supersedes 328900.

TANK, SMOKE SCREEN, MARK 5, MOD. 3

MARK 5 MOD 3 WITH TAIL CONE AND EXHAUST TUBE



TANK, SMOKE SCREEN, MARK 5, MOD. 3 (CONT'D)

TANK, SMOKE SCREEN, MARK 5, MOD. 3

STOCK Nos. 3-T-152 (WITH TAIL CONE) and 3-T-273 (WITHOUT TAIL CONE)

THE Smoke Screen Tank Mark 5, Mod. 3 is a bomb-shaped, monel metal cylinder, having 2 suspension lugs on 14-inch centers and a single hoisting lug. The tank may be carried under the airplane wing by Bomb Racks Mark 35 or Mark 51, or in a sling beneath the fuselage. It is filled with a chemical agent which produces a smoke screen when forced out of the tank by the pressure of gas from the Carbon Dioxide Cylinder (Stock No. 3-S-2520).

The Tail Cone Assembly for the Smoke Screen Tanks Mark 5 and Mods. and a Hinged

Exhaust Tube Mark 1, Mark 2, or Mark 3, are used with the tank in addition to the carbon dioxide cylinder and regulator valve.

DIMENSIONS (with tail cone): approx. 67.2 x 22.5 x 19.0 inches.

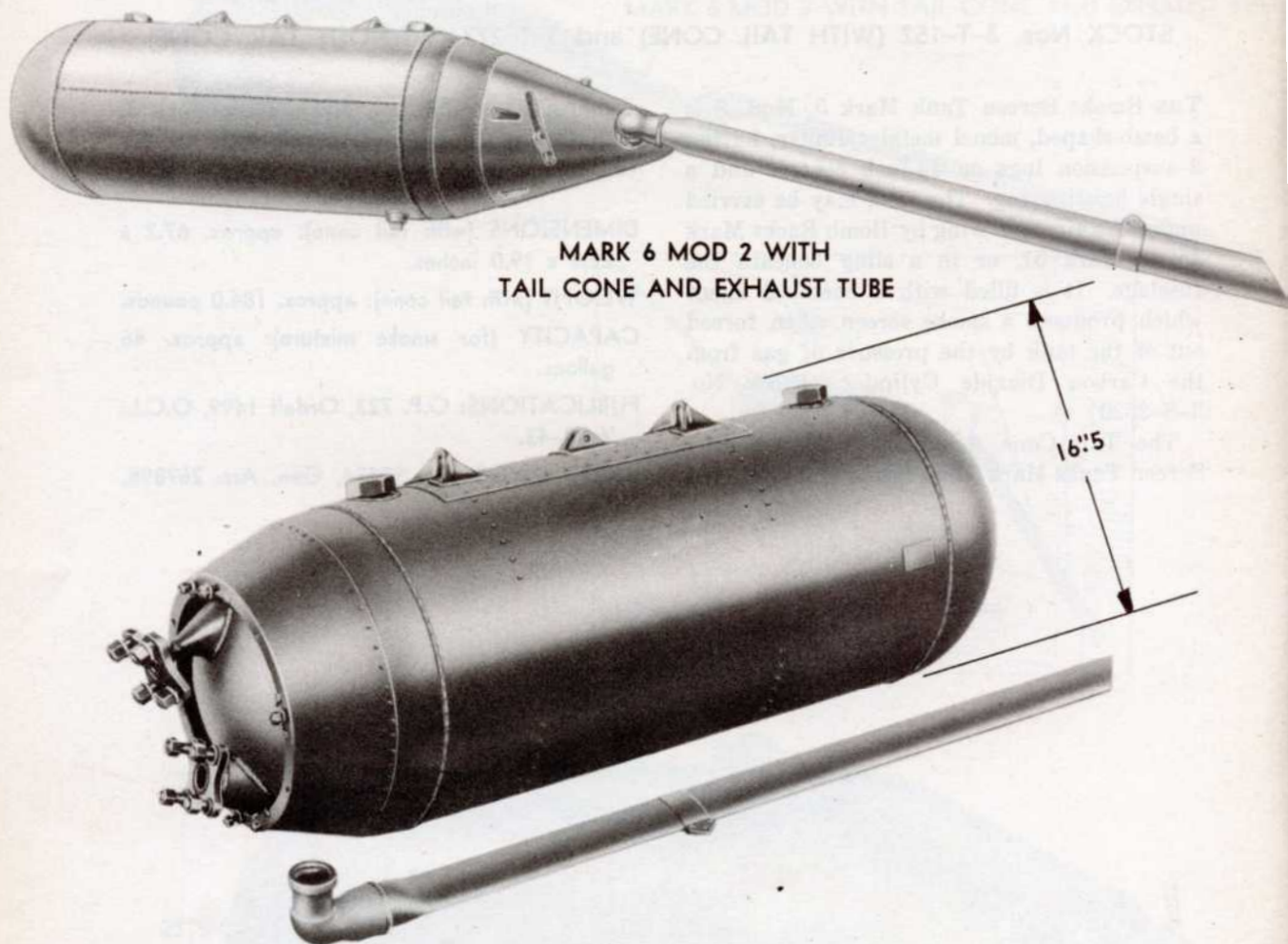
WEIGHT (with tail cone): approx. 184.0 pounds.

CAPACITY (for smoke mixture): approx. 46 gallons.

PUBLICATIONS: O.P. 723, Ordalt 1499, O.C.L. V-24-43.

BuORD DWGS: SK. 90424, Gen. Arr. 267898.

TANK, SMOKE SCREEN, MARK 6, MOD. 2



TANK, SMOKE SCREEN, MARK 6, MOD. 2

STOCK Nos. 3-T-156 (WITH TAIL CONE) and 3-T-273-50 (WITHOUT TAIL CONE)

THE Smoke Screen Tank Mark 6, Mod. 2 is similar to but smaller than the Mark 5, Mod. 3. It has a hoisting lug and 2 suspension lugs on 14-inch centers for use with Bomb Racks Mark 35 or Mark 51. It is filled with a chemical agent which produces a smoke screen when forced out of the tank by the pressure of gas from the Carbon Dioxide Cylinder (Stock No. 3-C-2525).

It uses the Tail Cone Assembly for the Smoke Screen Tanks Mark 6 and a Hinged Exhaust Tube Mark 1, Mark 2, or Mark 3 in addition to the carbon dioxide cylinder and

regulator valve.

This tank is obsolescent, but is still issued where stocks are available.

DIMENSIONS (with tail cone): approx. 58.6 x 16.5 x 15.0 inches.

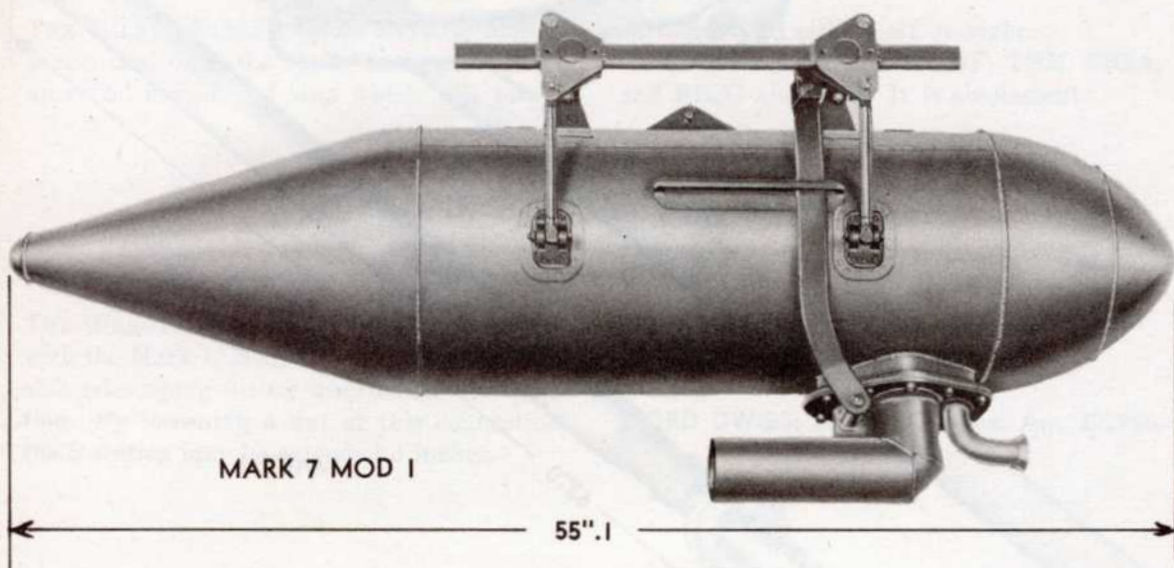
WEIGHT (with tail cone): approx. 115.0 pounds.

CAPACITY (for smoke mixture): approx. 28 gallons.

PUBLICATIONS: O.P. 723, Ordalt 976, O.C.L. V-24-43.

BuORD DWGS: SK. 90426, Gen. Arr. 267899.

TANK, SMOKE SCREEN, MARK 7, MOD. 1



TANK, SMOKE SCREEN, MARK 7, MOD. 1

STOCK No. 3-T-160

THE Smoke Screen Tank Mark 7, Mod. 1 is a bomb-shaped monel metal tank equipped with detachable suspension rigging and brackets originally intended for use with the now obsolete Bomb Rack Type A-3. A single suspension lug permits the tank to be carried by Bomb Racks Mark 41, Mod. 2 or Mark 50 and Mods.

This tank requires no accessories. The smoke mixture is drawn into the slipstream directly through a valve mechanism. This unit

has a funnel-shaped tube facing forward with an air inlet valve through which the air enters. The mixture is forced out of the tank through a larger tube facing aft.

The Smoke Screen Tank Mark 7, Mod. 1 is obsolescent.

DIMENSIONS: approx. 55.1 x 21.1 x 12.0 inches.

WEIGHT: approx. 56.5 pounds.

PUBLICATION: O.P. 723.

BuORD DWGS: SK. 57970, Gen. Arr. 182711.

TANK, SMOKE SCREEN, MARK 7, MOD. 2

STOCK No. 3-T-162

THE Smoke Screen Tank Mark 7, Mod. 2 is similar to the Mark 7, Mod. 1 except that the detachable suspension rigging with its lugs and 2 after braces have been removed.

This tank is also obsolescent.

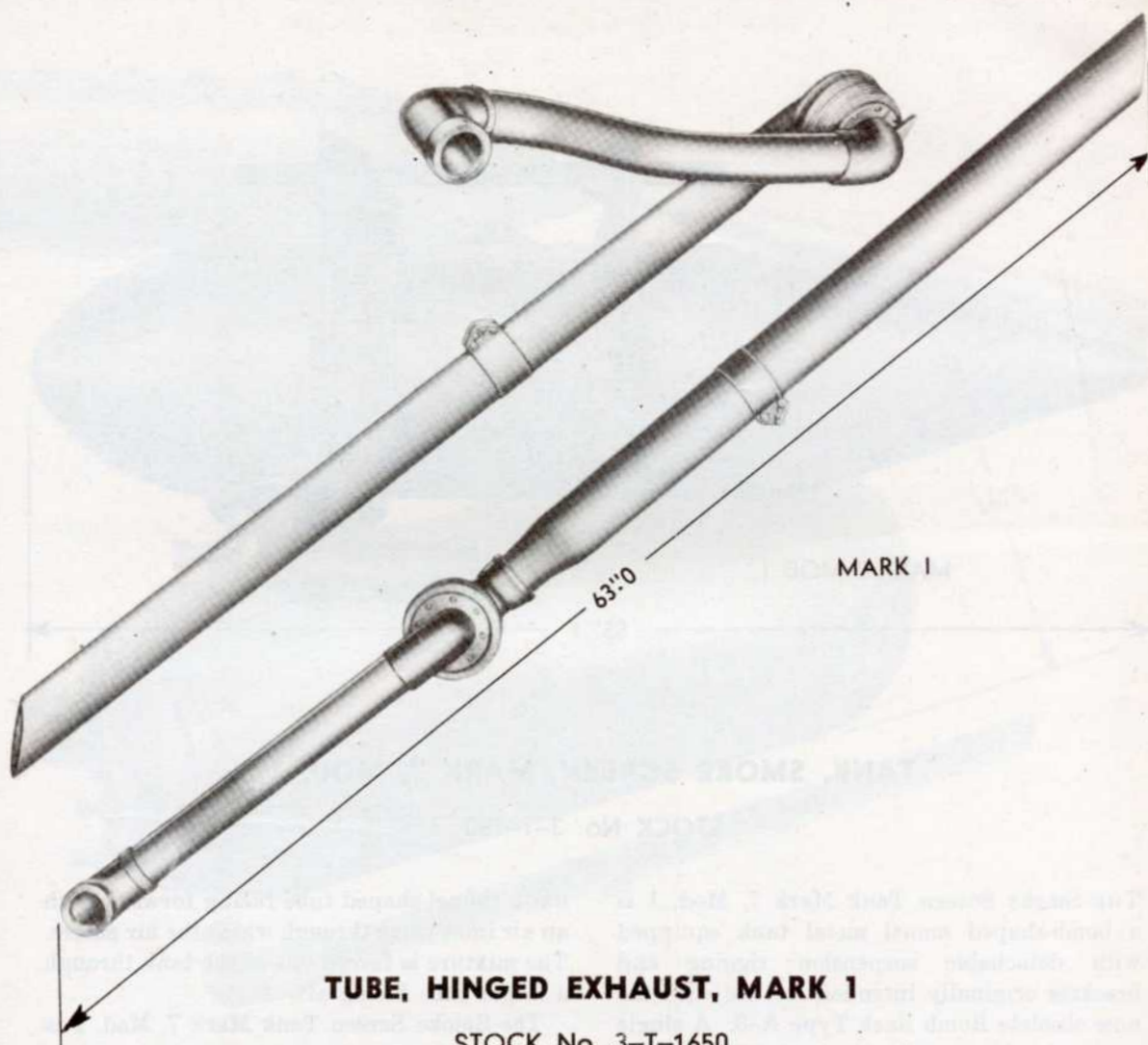
DIMENSIONS: approx. 55.1 x 12.0 x 12.0 inches.

WEIGHT: approx. 45.0 pounds.

PUBLICATION: O.P. 723.

BuORD DWGS: SK. 91287, Gen. Arr. 329921.

TUBE, HINGED EXHAUST, MARK 1, MARK 1 MOD. 1, MARK 3



THE Hinged Exhaust Tube Mark 1 is used with smoke screen tanks as an outlet for the smoke mixture. It consists of 2 sections. One section is composed of an S-shaped piece of iron pipe 18 inches long and 1.8 inch in diameter having an elbow soldered at each end. One elbow connects to the tail cone assembly and the other elbow to a spring-wound hinge or swivel. The other section consists of a straight length of pipe, elliptical in shape, (2.5 inches by 1.25 inches) and 40 inches long. This section is also fastened to the hinge and may be adjusted angularly in relation to the 18-inch pipe.

In stowed position, the oval tube is held nearly parallel to the lower contour of the

fuselage and against the spring tension of the hinge by a lanyard secured around the tube. When the oval tube is to be carried in the "smoke" position, the lanyard is released and the action of the spring causes the oval tube to swing downward until checked by an adjustable stop placed at the desired angle with the lower line of the fuselage.

The hinged exhaust tube was designed for use on SB2A, SB2C and TBF airplanes. Procurement of it has been cancelled.

DIMENSIONS: approx. 63.0 x 4.5 x 7.5 inches.

WEIGHT: approx. 12.5 pounds.

PUBLICATIONS: O.P. 723, O.C.L. V-24-43.

BuORD DWGS: SK. 90797, Gen. Arr. 275146.

TUBE, HINGED EXHAUST, MARK 1, MARK 1 MOD. 1, MARK 3 (CONT'D)

TUBE, HINGED EXHAUST, MARK 1, MOD. 1

STOCK No. 3-T-1651

THE Hinged Exhaust Tube Mark 1, Mod. 1 is identical with the Mark 1 except it has a universal swivel and stop which will take a

spring wound either left or right.

This tube is for use on TBF, TBM, SB2A, and SB2C airplanes. It is obsolescent.

TUBE, HINGED EXHAUST, MARK 3

STOCK No. 3-T-1656

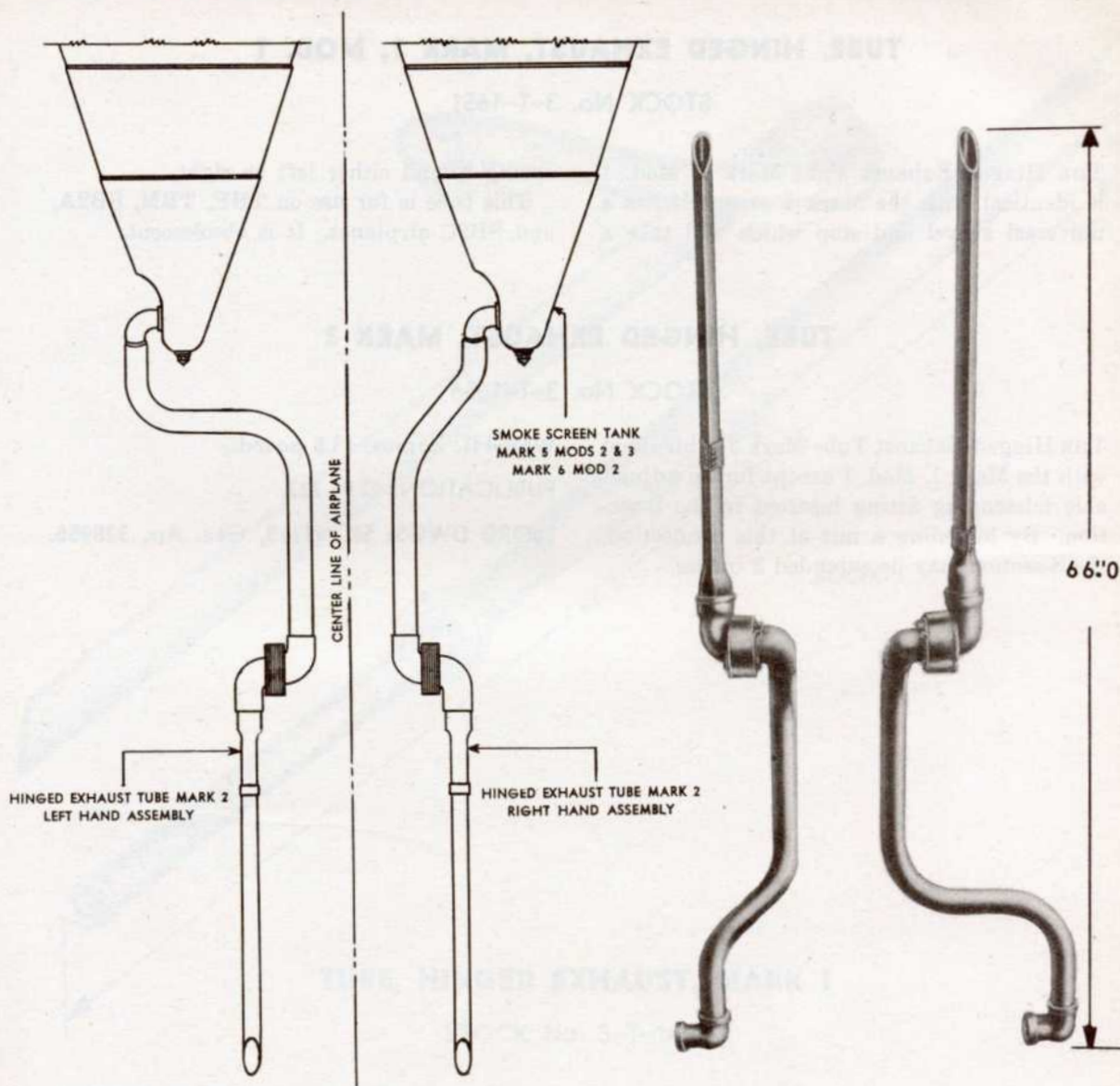
THE Hinged Exhaust Tube Mark 3 is identical with the Mark 1, Mod. 1 except for an adjustable telescoping fitting inserted in the S-section. By loosening a nut at this connection, the S-section may be extended 3 inches.

WEIGHT: approx. 13.5 pounds.

PUBLICATION: O.P. 723.

BuORD DWGS: SK. 91113, Gen. Arr. 328956.

TUBE, HINGED EXHAUST, MARK 2 (PAIRS)



TUBE, HINGED EXHAUST, MARK 2 (PAIRS)

STOCK No. 3-T-1655

THE Hinged Exhaust Tube Mark 2 consists of one right hand and one left hand unit which are attached to smoke tanks on opposite sides of the center line of an airplane. The left and right hand units differ in the S-sections

which have different contours.

All parts of the Mark 2 except the S-sections are interchangeable with the Mark 1, Mod. 1 and the Mark 3.

DIMENSIONS:

Left hand, approx. 66.0 x 4.5 x 15.0 inches.

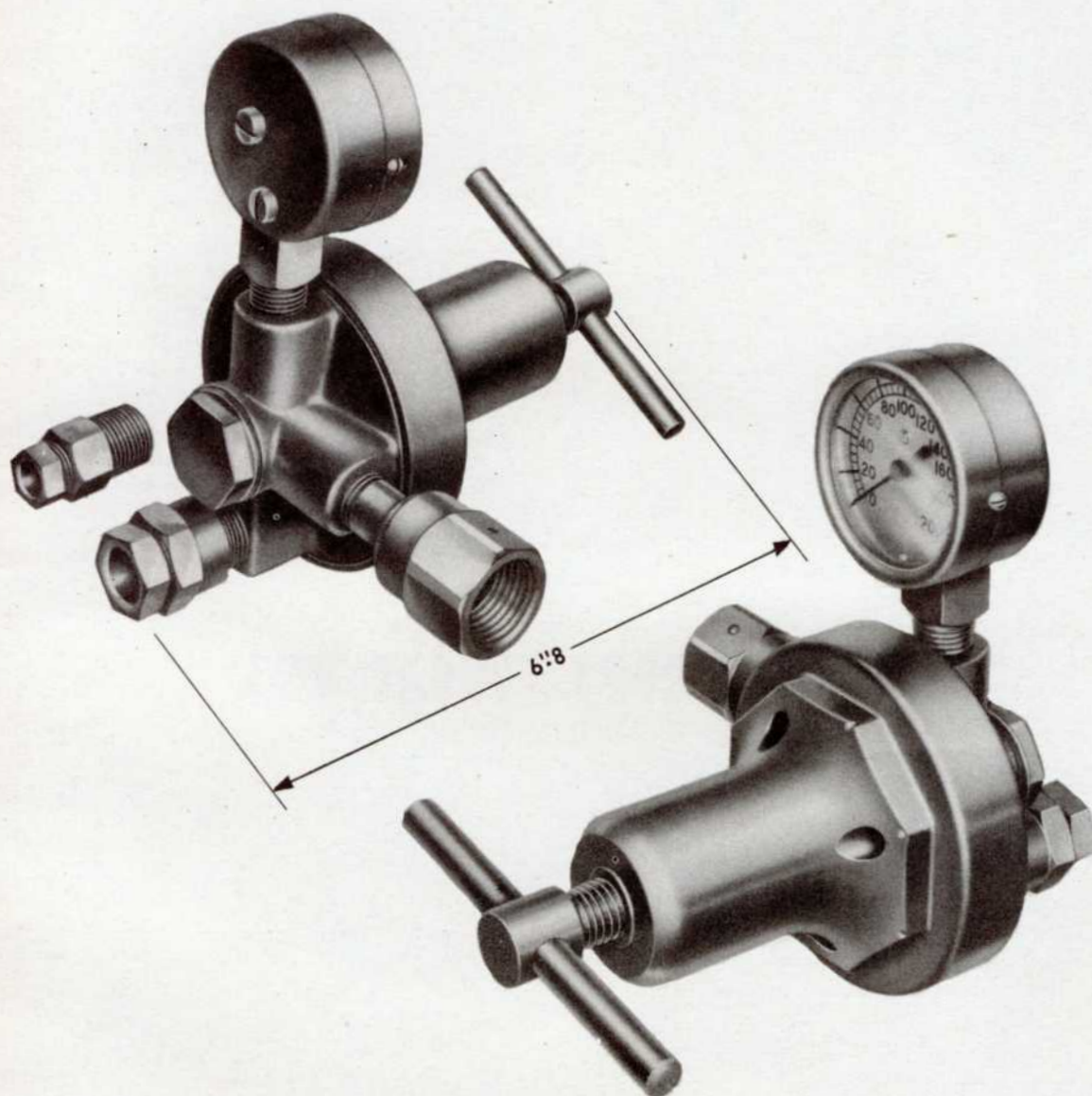
Right hand, approx. 66.0 x 4.5 x 7.5 inches.

WEIGHT (pair): approx. 27.0 pounds.

PUBLICATION: O.P. 723.

BuORD DWGS: SK. 91112, Gen. Arr. 328911.

**VALVE, CARBON DIOXIDE CYLINDER REGULATOR,
FOR SMOKE TANKS MARK 5 AND MODS. AND MARK 6 AND MODS.**



**VALVE, CARBON DIOXIDE CYLINDER REGULATOR, FOR SMOKE
TANKS MARK 5 AND MODS. AND MARK 6 AND MODS.**

STOCK No. 3-V-120

THE Carbon Dioxide Cylinder Regulator Valve with attached pressure gage controls the rate of flow of carbon dioxide into the smoke screen tank, thereby regulating the pressure

inside the tank. It is used with the carbon dioxide cylinder for Smoke Screen Tanks Mark 5 or Mark 6 but is issued separately.

DIMENSIONS: approx. 6.8 x 6.5 x 6.0 inches.

WEIGHT: approx. 2.5 pounds.

PUBLICATION: O.P. 723.

BuORD DWG: Gen. Arr. 199095.

NOTES

TOW TARGET EQUIPMENT

TOW TARGET EQUIPMENT

ADAPTERS, AIRCRAFT TARGET CONTAINER

CABLE, TARGET

CONTAINERS, TARGET

DRIVE, HYDRAULIC

LEADER, TARGET

LIGHT, TARGET

MESSENGERS

REELS, TARGET

REFLECTORS, RADAR

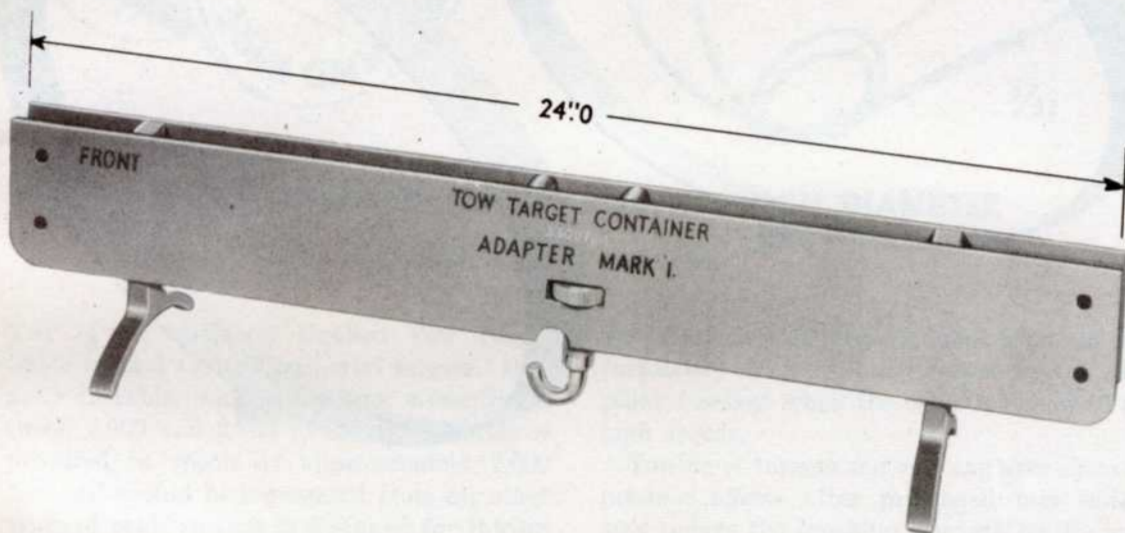
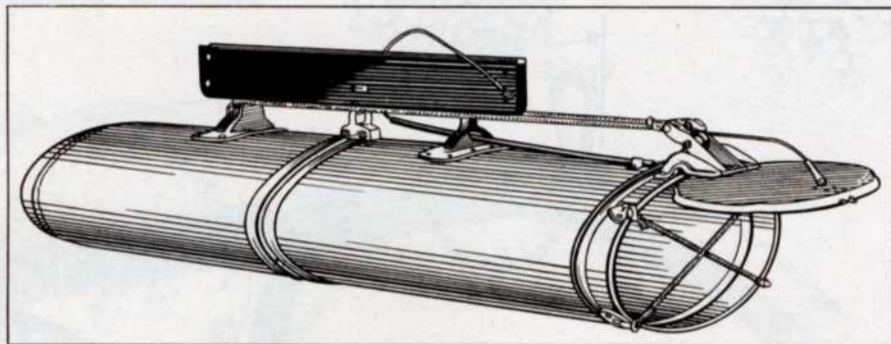
RELEASES, TARGET

RING, TARGET

TARGETS

NOTES

ADAPTER, TARGET CONTAINER, MARK 1



ADAPTER, TARGET CONTAINER, MARK 1

STOCK No. 3-A-110

THE Target Container Adapter Mark 1 is used for suspending the Target Container Mark 1, Mod. 1 or Mod. 2 on VTB class aircraft. It consists of 2 side plates, a hook which extends from the bottom middle portion of the adapter, and a sway brace fore and aft. The sway braces are not adjustable. The hook has a threaded shank and is adjusted by a knurled nut which permits tightening of the container against the sway braces.

This adapter replaces the Bomb Racks Mark 41, Mod. 2 and Mark 50 and Mods. on VTB class aircraft for suspending the target container.

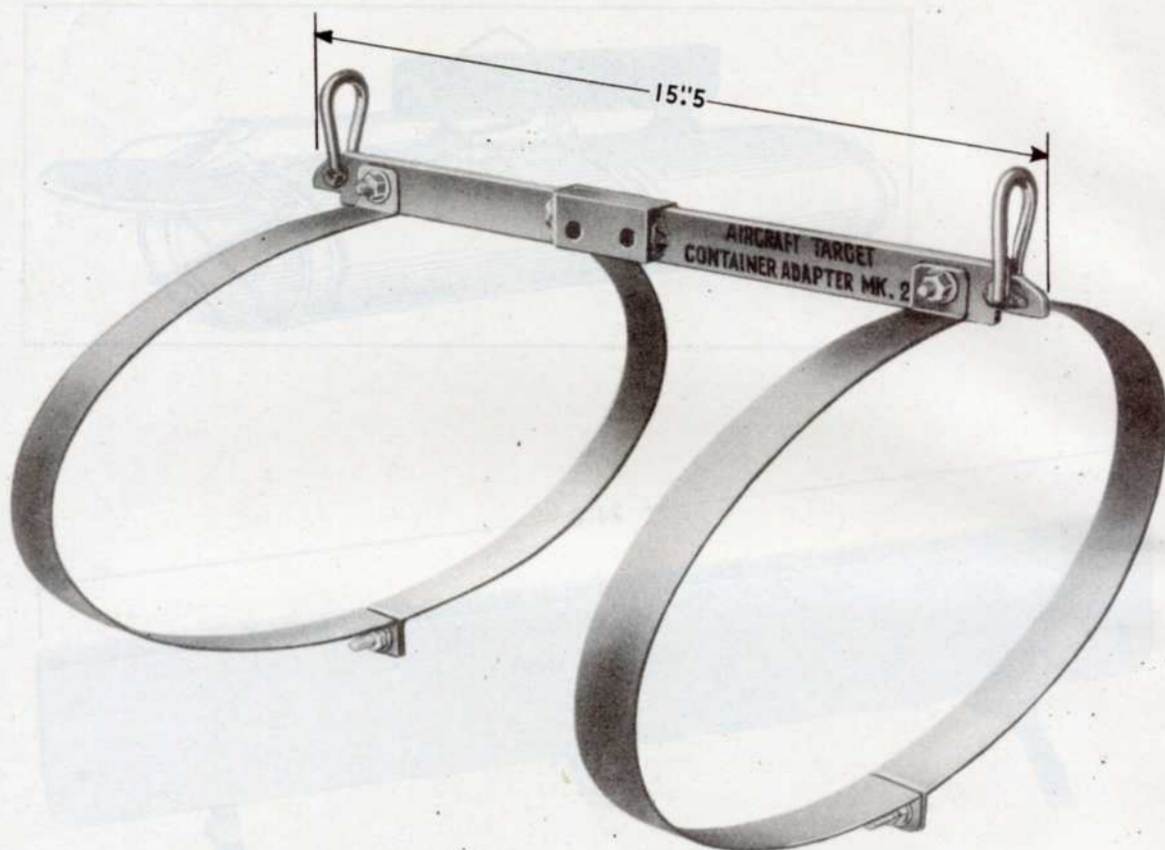
DIMENSIONS: approx. 24.0 x 5.5 x 4.5 inches.

WEIGHT: approx. 5.8 pounds.

PUBLICATION: O.T.I. V-11-43.

BuORD DWG: Gen. Arr. 330077.

ADAPTER, TARGET CONTAINER, MARK 2



ADAPTER, TARGET CONTAINER, MARK 2

STOCK No. 3-A-112

THE Target Container Adapter Mark 2 is used for suspending the Target Container Mark 1, Mod. 1 from a double suspension bomb rack of the Mark 35 or Mark 51 type. It consists of a bar and 2 elliptical bands. The bar fits between the 2 sway brace supports on the container, and has suspension

lugs at each end by which it is attached to the 2 hooks of the bomb rack. The bands bolt together at the bottom of the container which they encircle.

In using this adapter, the suspension lug on the container, used for attaching the container to a single hook bomb rack, must be removed.

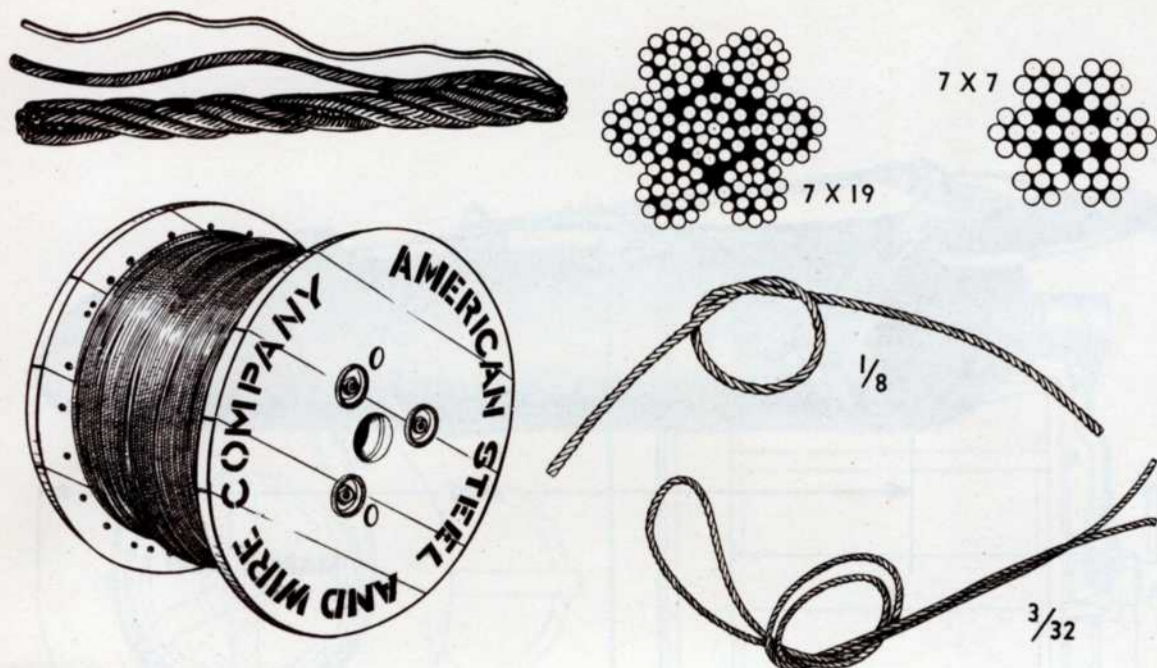
DIMENSIONS: approx. 15.5 x 11.3 x 18.0 inches.

WEIGHT: approx. 3.5 pounds.

PUBLICATION: O.T.I. V-11-43.

BuORD DWG: Gen. Arr. 330856.

CABLE, UNOILED TOW TARGET



CABLE, UNOILED TOW TARGET, $\frac{1}{8}$ -INCH DIAMETER

STOCK No. 3-C-655

THE $\frac{1}{8}$ -inch diameter Unoled Tow Target Cable is used for towing aerial targets. It is a 7 x 19 cable, with a breaking strength between 2,000 and 2,100 pounds. The cable is procured in spools of approximately 7,000 feet and should be segregated from all other types of cable since it is designed for towing aerial targets only and should be used for no other purpose.

Grease, oil, paraffin or other lubricant must not be left on the cable because their presence

would create a fire hazard. This is due to the formation of an explosive vapor in the airplane fuselage when the cable is unwound at high speeds.

Towing of targets and running over sheaves produce effects after prolonged use, which may reduce the breaking strength by 25 percent. Damaged sections may be cut out and the unaffected portions of the cable spliced together for further use.

WEIGHT (7,500 feet spools): approx. 240 pounds.

SPECIFICATION: AN-RR-C-43.

CABLE, UNOILED TOW TARGET, $\frac{3}{32}$ -INCH DIAMETER

STOCK No. 3-C-650

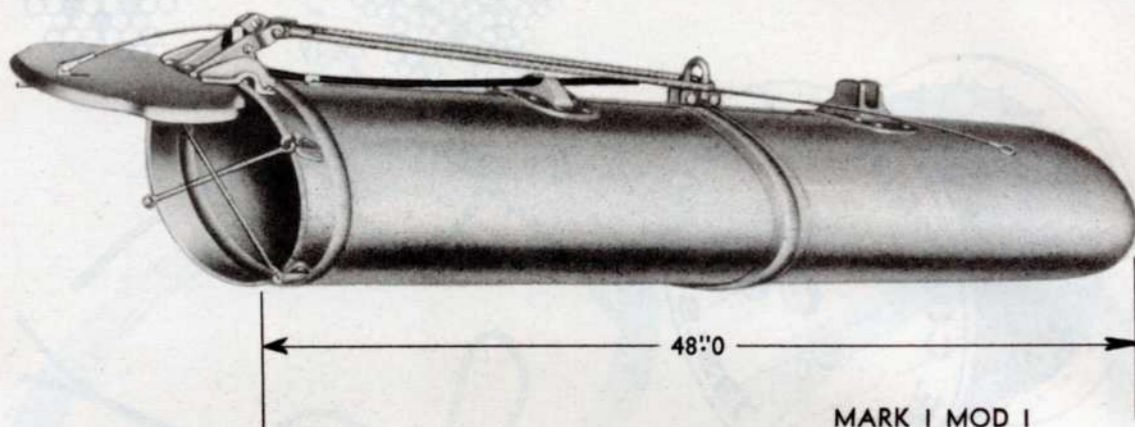
THE $\frac{3}{32}$ -inch diameter Unoled Tow Target Cable is used for towing aerial targets. It is a 7 x 7 cable having a breaking strength of 1,100 pounds. It is procured in spools of approximately 10,000 feet. Other information

and remarks concerning the $\frac{1}{8}$ -inch cable apply also to the $\frac{3}{32}$ -inch cable.

WEIGHT (10,000-foot spools): approx. 183 pounds.

SPECIFICATION: AN-RR-C-43.

CONTAINER, TARGET, MARK 1 MODS.



CONTAINER, TARGET, MARK 1, MOD. 1

STOCK No. 3-C-1782

THE Target Container Mark 1, Mod. 1 is used to carry and release an Aircraft Target Mark 7 or Mods. during aircraft gunnery practice. It is an elliptical container equipped with a single hook for suspension from Bomb Rack Mark 41 and Mods. or Mark 50 and Mods. A door on the after end is latched under tension by a length of elastic bungee cord.

During flight, releasing the latch from the cockpit causes the door to snap open, ejecting the target, which has been stowed under tension of 2 crossed bungee cords from the mouth of the container.

The container may be used on all airplanes

carrying a single hook bomb rack. On VTB class aircraft, it is suspended from a Target Container Adapter; Mark 1. To suspend it from a 2-hook bomb rack, the Target Container Adapter Mark 2 is used.

The Target Container Mark 1, Mod. 1 is obsolescent and will be replaced by the Mark 1, Mod. 2.

DIMENSIONS: approx. 48.0 x 18.0 x 10.0 inches.

WEIGHT: approx. 18.2 pounds.

PUBLICATION: N.A.F. Report No. M-4135.

BuORD DWGS: SK. 68321, Gen. Arr. 275998.

CONTAINER, TARGET, MARK 1, MOD. 2

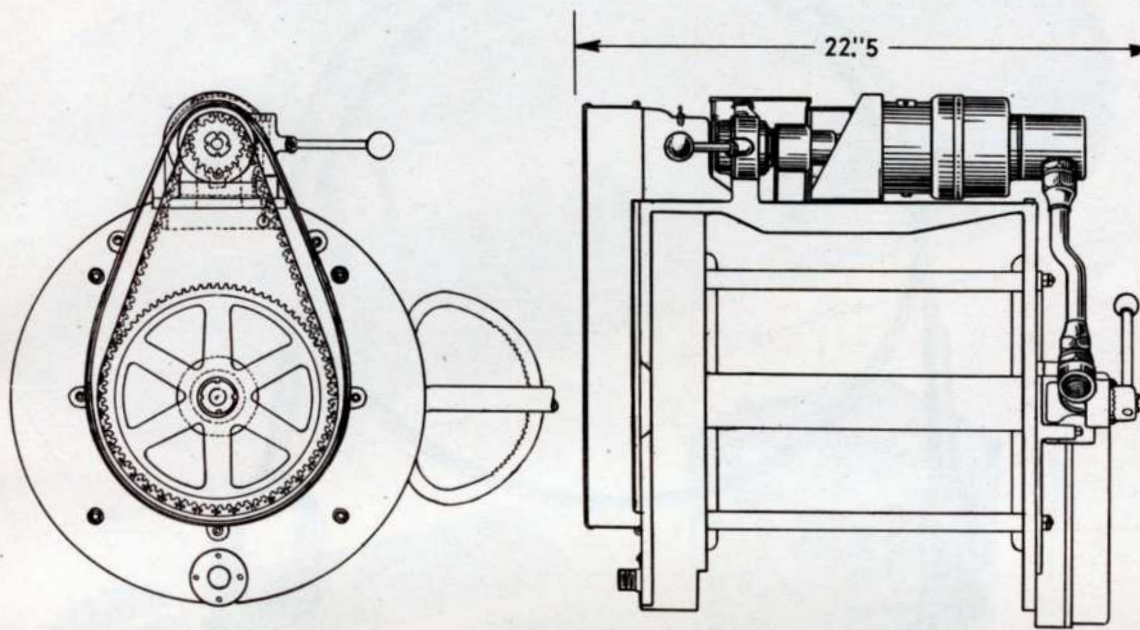
STOCK No. 3-C-1802

THE Target Container Mark 1, Mod. 2 is the same as the Mark 1, Mod. 1 except for two changes: provision has been made for double as well as single-hook suspension, and an angle

has been welded to the bottom of the door which prevents sagging of the loaded container and consequent unlatching of the door.

BuORD DWG: Gen. Arr. 394774.

DRIVE, HYDRAULIC FOR ANTI-AIRCRAFT TARGET REEL MARK 9



DRIVE, HYDRAULIC FOR ANTI-AIRCRAFT TARGET REEL MARK 9

STOCK No. 3-D-762

THE Hydraulic Drive for Anti-aircraft Target Reel Mark 9 is used in place of the Air Associates Inc. EE-800 series electric rewind motor on Anti-aircraft Target Reel Type C-5 when the latter is installed in JM-1 aircraft. This drive derives its power from the hydraulic system of the aircraft and is a Dennison Engineering Company Model Number MA-15-CP motor. It includes a speed control bypass valve and a clutch. The drive uses aircraft hydraulic fluid Specification Number AN-VV-O-366a.

When this hydraulic drive is installed on Aircraft Target Reel Type C-5, the assembly is known as Anti-aircraft Target Reel Mark 9. The Bureau of Ordnance does not intend to furnish the Mark 9 reel as such but will only furnish the hydraulic drive to convert the Type C-5 reel to Mark 9.

DIMENSIONS: approx. 22.5 x 10.0 x 4.5 inches.

WEIGHT: approx. 40.0 pounds.

PUBLICATION: Ordalt 1920.

BuORD DWGS: SK. 108753, Gen. Arr. 388801.

LEADER, ANTIAIRCRAFT TARGET, MARK 1



LEADER, ANTIAIRCRAFT TARGET, MARK 1

STOCK No. 3-L-350

THE Antiaircraft Target Leader Mark 1 is a 34-inch length of steel cable with swaged end-fittings, and is used to attach an anti-aircraft target (or the sleeve-type target release messenger) to the release ring. It is designed for high speed towing, and replaces the manila rope leaders formerly used.

Prior to streaming an antiaircraft target from the airplane, the bridle eye of the target is placed in the yoke end of the leader, and the yoke is closed with a bolt, spacer and lock washer. The other end of the leader is secured by a shackle to the Target Release Ring Mark 7, Mod. 1 which slides on the tow cable. The target (or a sleeve-type target release mes-

senger) may then be streamed down the tow cable, the target leader retaining the anti-aircraft target when it reaches the outer end of the tow cable. The leader is dropped with the target and should be recovered after the towing mission is completed. One Target Leader Mark 1 is usually furnished for every 2 antiaircraft targets and for every release messenger.

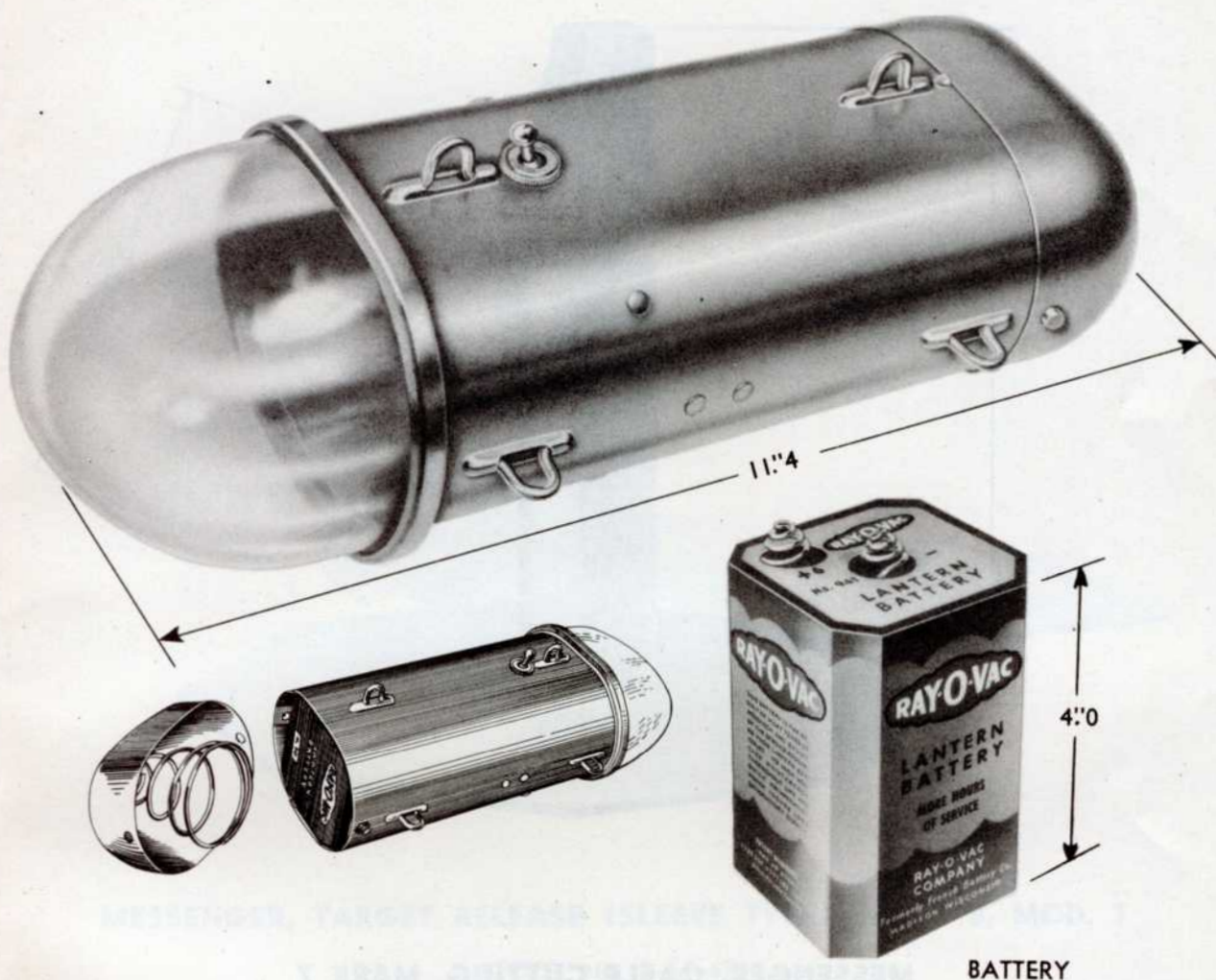
DIMENSIONS: approx. 37.0 x 1.0 x 0.5 inches.

WEIGHT: approx. 0.4 pound.

PUBLICATION: O.T.I. V-6-43.

BuORD DWG: Gen. Arr. 330352.

LIGHT, TOW TARGET



LIGHT, TOW TARGET

STOCK No. 3-L-1090

THE Tow Target Light is used to illuminate sleeve targets for firing at night, or to provide an illuminated point-of-aim. It is a flattened cylindrically-shaped flashlight, with two 3.6-volt lamps powered by the Target Light Battery (Stock No. 3-B-760). This lantern battery is a 6-volt Ray-O-Vac No. 941 or Eveready No. 409 or equivalent. It contains 4 size F cells.

Nine securing eyes are attached to the casing for suspending the light inside the

target bridle by cords before the target is released. The toggle switch lever of the light may be tied in the "on" position by a short cord.

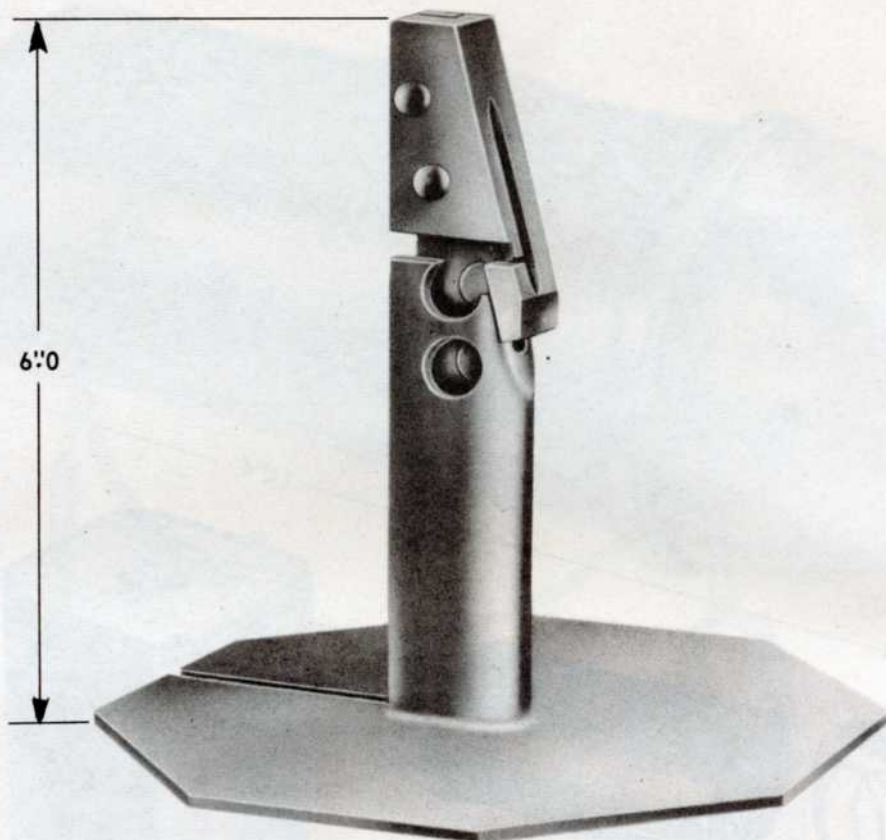
The light will render targets visible at an altitude of 6000 feet.

DIMENSIONS: approx. 11.4 x 2.7 x 3.7 inches.

WEIGHT (without battery): approx. 2.6 pounds.

MFR'S DWG: Delta Electric Co., A-1998.

MESSENGER, CABLE CUTTING, MARK 7



MESSENGER, CABLE CUTTING, MARK 7

STOCK No. 3-M-460

THE Cable Cutting Messenger Mark 7 is used to cut off the outer end of a target towing cable in flight when the extended cable becomes tangled, or a fouled target release fails to release a target. The messenger consists of a hexagonal windplate 6 by 6 inches, slotted to slip over the cable, and a grooved body 6 inches long welded to the center of the windplate, with a cutter attached to the outer end of the body.

In operation, the messenger is placed on the cable with the cutting end toward the target, and latched to retain it on the cable. When released, air pressure against the windplate forces the messenger down the cable, and

when the tapered nose end strikes any obstruction, such as a tangled section of the cable or the inclined surface of a fouled target release, the pivoted cutting knife shears the cable at that point, and the severed portion falls clear. The messenger also drops off, and the cable can then be reeled in for attaching another target release, prior to further target towing operations.

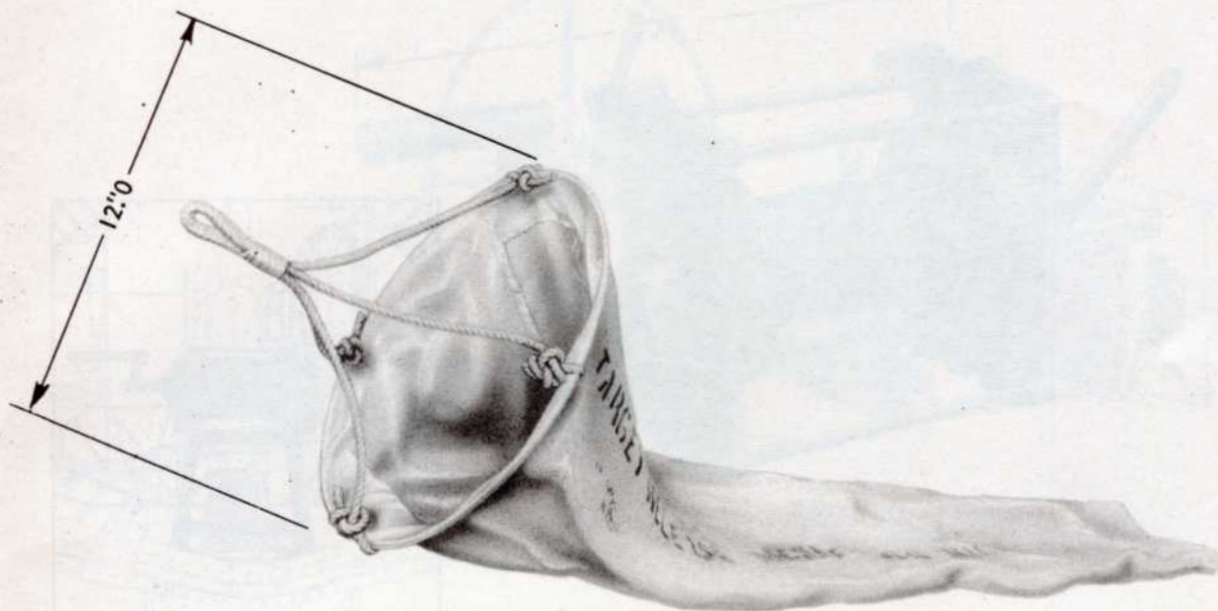
DIMENSIONS: approx. 6.0 x 6.0 x 6.0 inches.

WEIGHT: approx. 1.8 pounds.

PUBLICATION: O.P. 726.

BuORD DWG: Gen. Arr. 227451.

MESSENGER, TARGET RELEASE, MARK 8, MOD. 1



MESSENGER, TARGET RELEASE (SLEEVE TYPE), MARK 8, MOD. 1

STOCK No. 3-M-471

THE Target Release Messenger Mark 8, Mod. 1 is a white fabric sleeve which is streamed down the tow cable in flight, and used in releasing targets. It also serves as a whip-preventing drag when the cable is being payed out or reeled in. When targets are being exchanged, the sleeve messenger may be used to release the used target. The sleeve messenger is also used as a point-of-aim target for VF class aircraft, and an illuminated point-of-aim for night gunnery practice.

When inflated, the sleeve messenger is a tapered bag 32 inches long, with a nose ring 12 inches in diameter, and a tail opening 4 inches in diameter. Four bridle ropes attach the messenger to a towing swivel. The messenger is attached to an antiaircraft target

leader and a target release ring, and then streamed out. At the outer end of the towing cable, the target release ring operates the trigger of the target release which drops the used target. The drag of the retained messenger straightens the target release more nearly into line with the cable, thereby eliminating the strain that would be caused by the impact of the new target. When a new target is streamed, the sleeve messenger with its target leader and target release ring are dropped from the end of the cable.

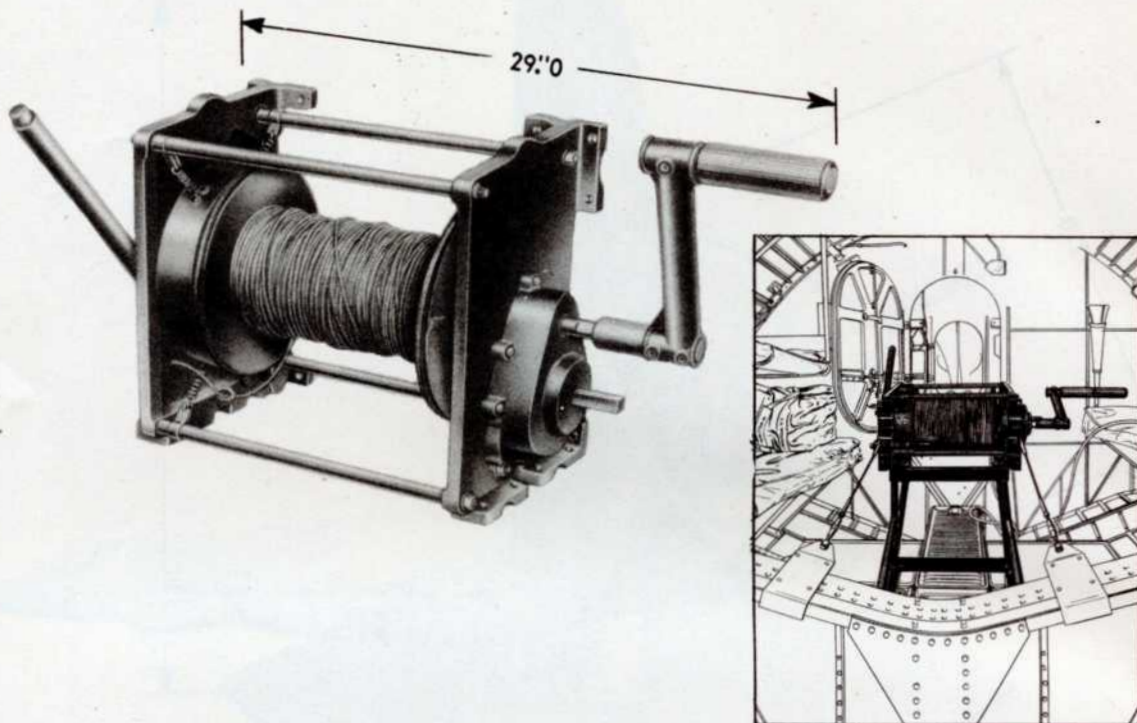
DIMENSIONS: approx. 32.0 x 12.0 x 12.0 inches.

WEIGHT: approx. 1.3 pounds.

PUBLICATION: O.T.I. V-10-43.

BuORD DWG: Gen. Arr. 375622.

REEL, AIRCRAFT TARGET, MARK 7



REEL, AIRCRAFT TARGET, MARK 7

STOCK No. 3-R-488

THE Aircraft Target Reel Mark 7 is a hand-cranked reel designed to hold, pay out, and reel in the steel cable used in towing targets for aircraft practice in flight. The reel consists of a gear-driven drum mounted between rectangular side plates, and a detachable crank handle for rotating the drum when the cable is being reeled in. A brake handle pivoted on the outer side plate applies a brake band against the drum to control the speed of paying out. A ratchet and pawl enable the operator to set the brake and stop the unreeling as desired. A separate cable clamp should be used to hold the extended cable and attached target during towing operations; the clamp is secured to the airplane and takes the strain from the reel as soon as the cable

has been paid out. Sole reliance should not be placed on the hand brake to hold the cable when towing. Cable clamps are not furnished by the Bureau of Ordnance. In place of a level-winding mechanism, a cable guide with 2 rollers is slipped on the cable and held in the hand while the cable is being reeled in.

The Aircraft Target Reel Mark 7 supersedes the Mark 4.

DIMENSIONS: approx. 29.0 x 13.5 x 13.0 inches.

WEIGHT (without cable): approx. 55.0 pounds.

CABLE CAPACITY: approx. 2500 feet of $\frac{1}{8}$ -inch or 4500 feet of $\frac{3}{32}$ -inch cable.

PUBLICATIONS: O.P. 726, O.T.I. V-16-43.

BuORD DWG: Gen. Arr. 267407.

REEL, ANTI-AIRCRAFT TARGET, MARK 5 MODS.



REEL, ANTI-AIRCRAFT TARGET, MARK 5, MOD. 2 AND MOD. 3

STOCK No. 3-R-492

THE Anti-aircraft Target Reel Mark 5, Mod. 2 and Mod. 3 is used for holding, paying out, and reeling in cable for towing anti-aircraft and aircraft targets. It is mounted in VJ, VJR, VPB, VTB and VSB class aircraft.

The equipment furnished under the above stock number includes a reel mounted in a rectangular frame, an impeller which drives the reel, and parts necessary to convert Mark 5, Mod. 2 into Mark 5, Mod. 3.

The impeller, installed on the outside of the airplane fuselage, is engaged to the reel by a clutch. It is driven by the slipstream, from the airplane propeller, and provides power for reeling in the cable. A stop, bearing against one of the impeller blades, holds the impeller stationary when not in use.

A brake, operated by a lever-type handle, is provided on the reel to prevent excessive unwinding speed and to stop and lock the reel drum when the desired length of cable has

been paid out. A cable length indicator on the side of the reel indicates the amount of cable unreeled.

The reel is equipped with a level winding device to provide even laying of the cable when it is reeled in. Six intermediate gears for the level winder are provided, which permit use of either $\frac{3}{32}$ -inch diameter cable (Mark 5, Mod. 2) or $\frac{1}{8}$ -inch diameter cable (Mark 5, Mod. 3).

DIMENSIONS (reel): approx. 26.0 x 15.5 x 18.5 inches.

WEIGHT (without cable): approx. 100 pounds.

CABLE CAPACITY:

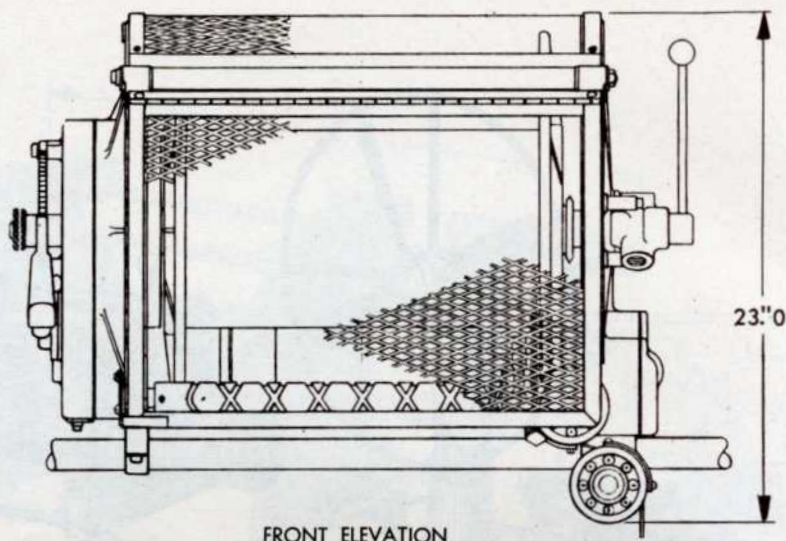
MARK 5, MOD. 2, approx. 10,000 feet of $\frac{3}{32}$ -inch cable.

MARK 5, MOD. 3, approx. 5,600 feet of $\frac{1}{8}$ -inch cable.

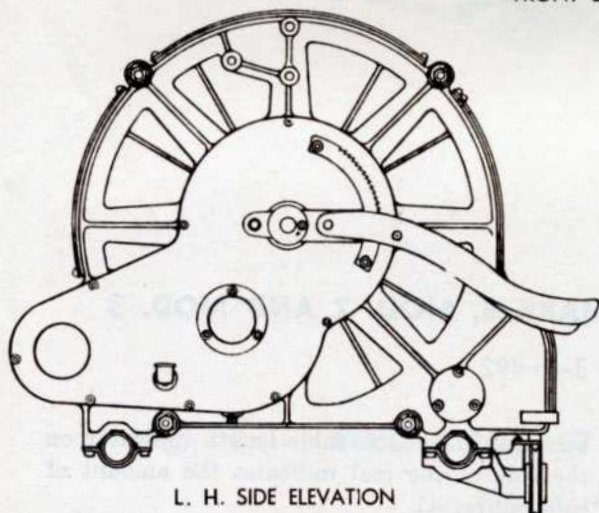
PUBLICATIONS: O.P. 726, Ordalt 1393.

BuORD DWG: Gen. Arr. 375554.

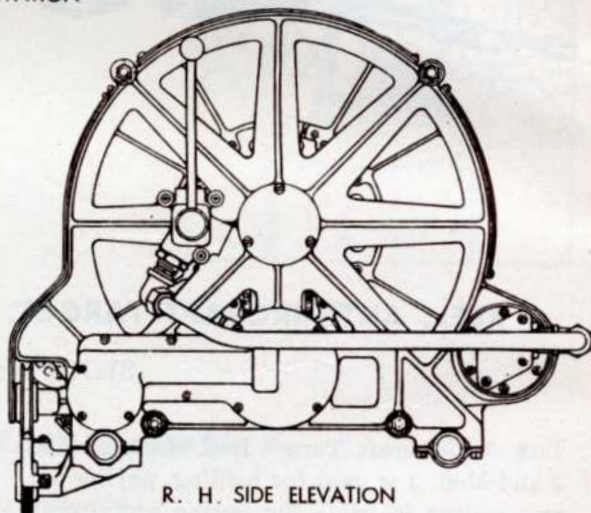
REEL, ANTI-AIRCRAFT TARGET, MARK 8



FRONT ELEVATION



L. H. SIDE ELEVATION



R. H. SIDE ELEVATION

REEL, ANTI-AIRCRAFT TARGET, MARK 8

STOCK No. 3-R-494-150

THE Anti-aircraft Target Reel Mark 8 is used for towing anti-aircraft targets. It consists of a drum, a free wheeling type ratchet, a Den-nison Engineering Corporation Hydraulic Fluid Rewind Motor Model No. MA-15-CP-2 and a Vickers Model AA-12100 Control Valve, a level-wind mechanism, and a com-bined brake and clutch unit with hand lever control.

When the brake is set, it will release the free wheeling ratchet. This ratchet will then per-mit rotation of the rewind motor drive shaft

in the reeling in direction only.

Complete release of the brake permits free rotation of the drum in the reeling out direc-tion.

DIMENSIONS: approx. 30.9 x 24.8 x 23.0 inches.

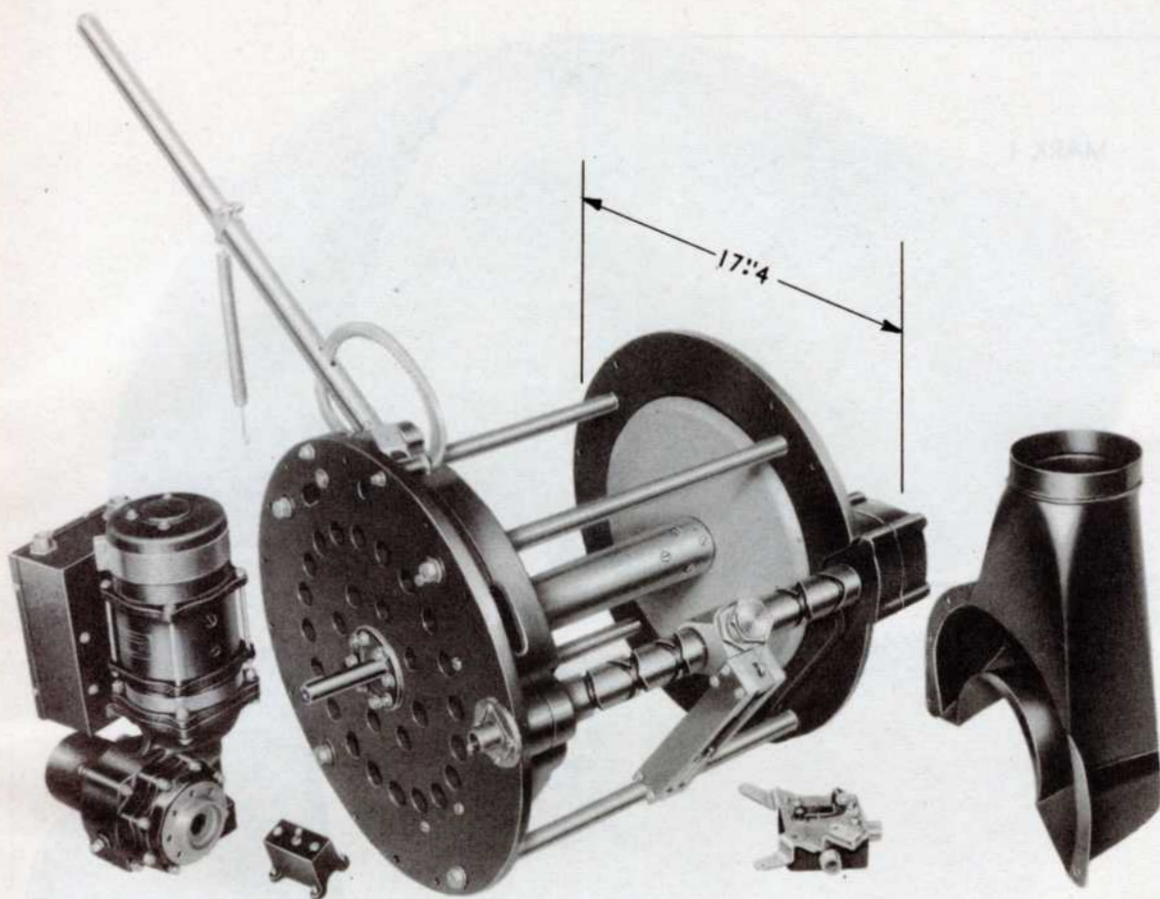
WEIGHT: approx. 215 pounds.

CABLE CAPACITY: approx. 12,000 feet of $\frac{1}{8}$ -inch cable.

PUBLICATION: O.S. 2983.

BuORD DWG: Gen. Arr. 388687.

REEL, ANTI-AIRCRAFT TARGET, TYPE C-5



REEL, ANTI-AIRCRAFT TARGET, TYPE C-5

STOCK No. 3-R-497

THE Anti-aircraft Target Reel Type C-5 is used to hold, pay out, and reel in the steel cable used in towing targets for aircraft or anti-aircraft practice. The reel consists of a cable drum with level-wind mechanism, mounted between 2 circular sideplates, and an integral brake drum and air scoop to cool the drum during unreeling operations. A detachable handle operates a contracting band brake. A button in the top end of the brake handle when depressed, releases the key on a toothed ratchet quadrant, so that the cable may be payed out. The brake may be used to lock the drum against unreeling of the cable. A cable meter is provided, to check the length

of cable reeled in or payed out.

For reeling in the cable, the assembly includes an Air Associates, Inc. EE-800 Series, 24-volt electric rewind motor equipped with starting switch and clutch (Stock No. 3-M-474-50).

DIMENSIONS (overall but less brake handle):
approx. 25.0 x 19.0 x 17.4 inches.

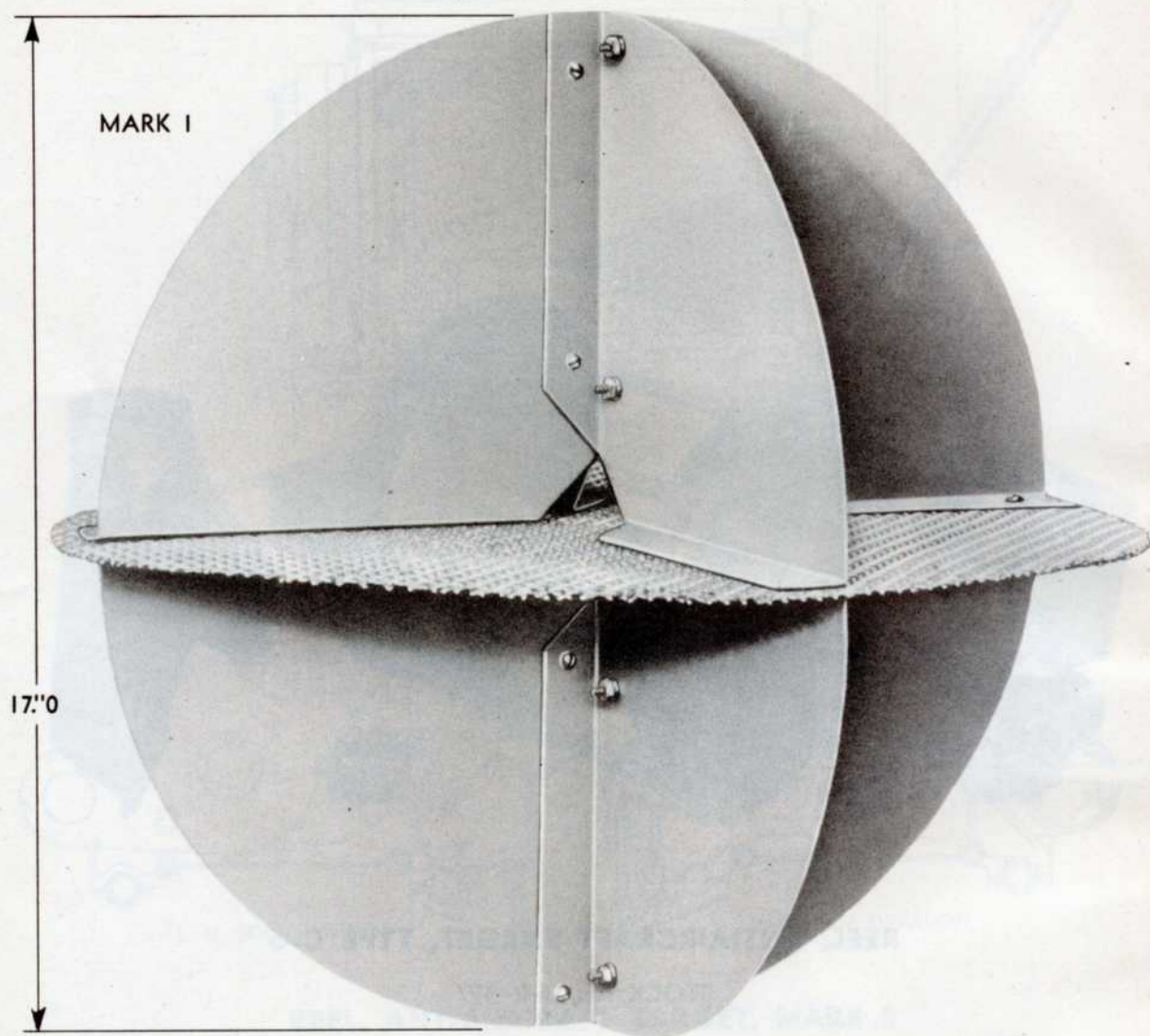
WEIGHT (without cable): approx. 144.5 pounds.

CABLE CAPACITY: approx. 7,000 feet of 1/8-inch cable.

PUBLICATION: AAF Tech. Order 11-40-19.

BuORD DWGS: SK. 108980, Assembly 226698.

REFLECTOR, TRIHEDRAL RADAR, MARK 1 AND MOD.



REFLECTOR, TRIHEDRAL RADAR, MARK 1

STOCK No. 3-R-501

THE Trihedral Radar Reflector Mark 1 is used with the Antiaircraft Target Mark 17, or Mark 17, Mod. 1 and the Antiaircraft Target Mark 19 to render them radar reactive. It is composed of an aluminum wire mesh disc from either side of which extend 4 quarter-circle metal vanes assembled as illustrated.

The reflector is suspended within the nose

ring of the target with the wire mesh disc at right angles to the direction of flight.

DIMENSIONS: approx. 17.0 x 17.0 x 16.0 inches.

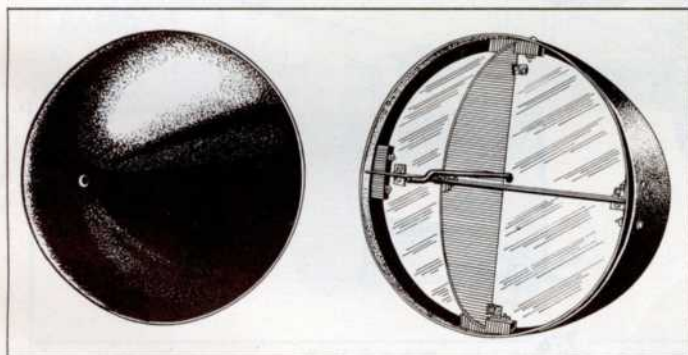
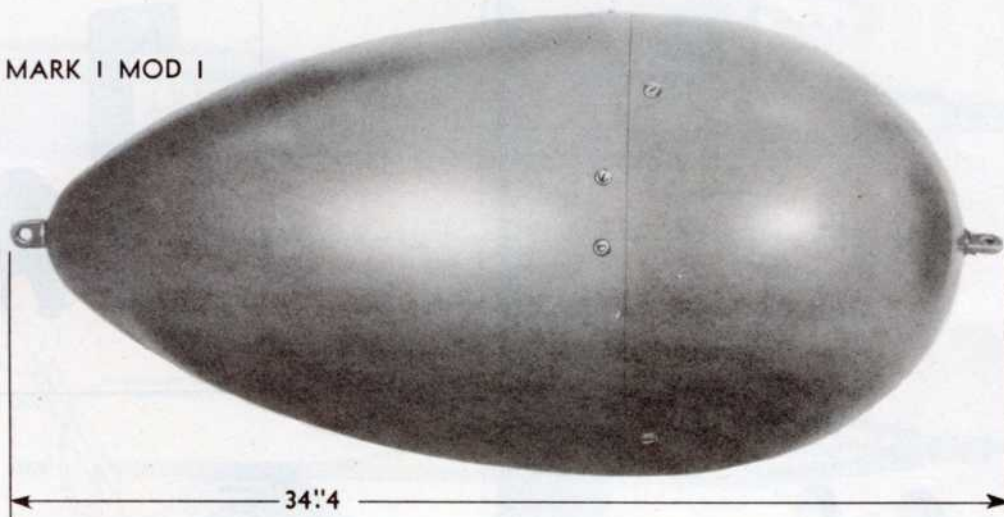
WEIGHT: approx. 3.0 pounds.

PUBLICATION: O.T.I. V-1-44.

BuORD DWG: 394776.

REFLECTOR, TRIHEDRAL RADAR, MARK 1 AND MOD. (CONT'D)

MARK 1 MOD 1



REFLECTOR, TRIHEDRAL RADAR, MARK 1, MOD. 1

STOCK No. 3-R-501-50

THE Trihedral Radar Reflector Mark 1, Mod. 1 is used with the Aircraft Target Mark 7 and Mods. or the Antiaircraft Target Mark 15, Mod. 1 to render them radar reactive. This reflector consists essentially of a red plastic ellipsoidal container enclosing 2 circular metal vanes placed at right angles to each other. A rod, with eyes at both ends,

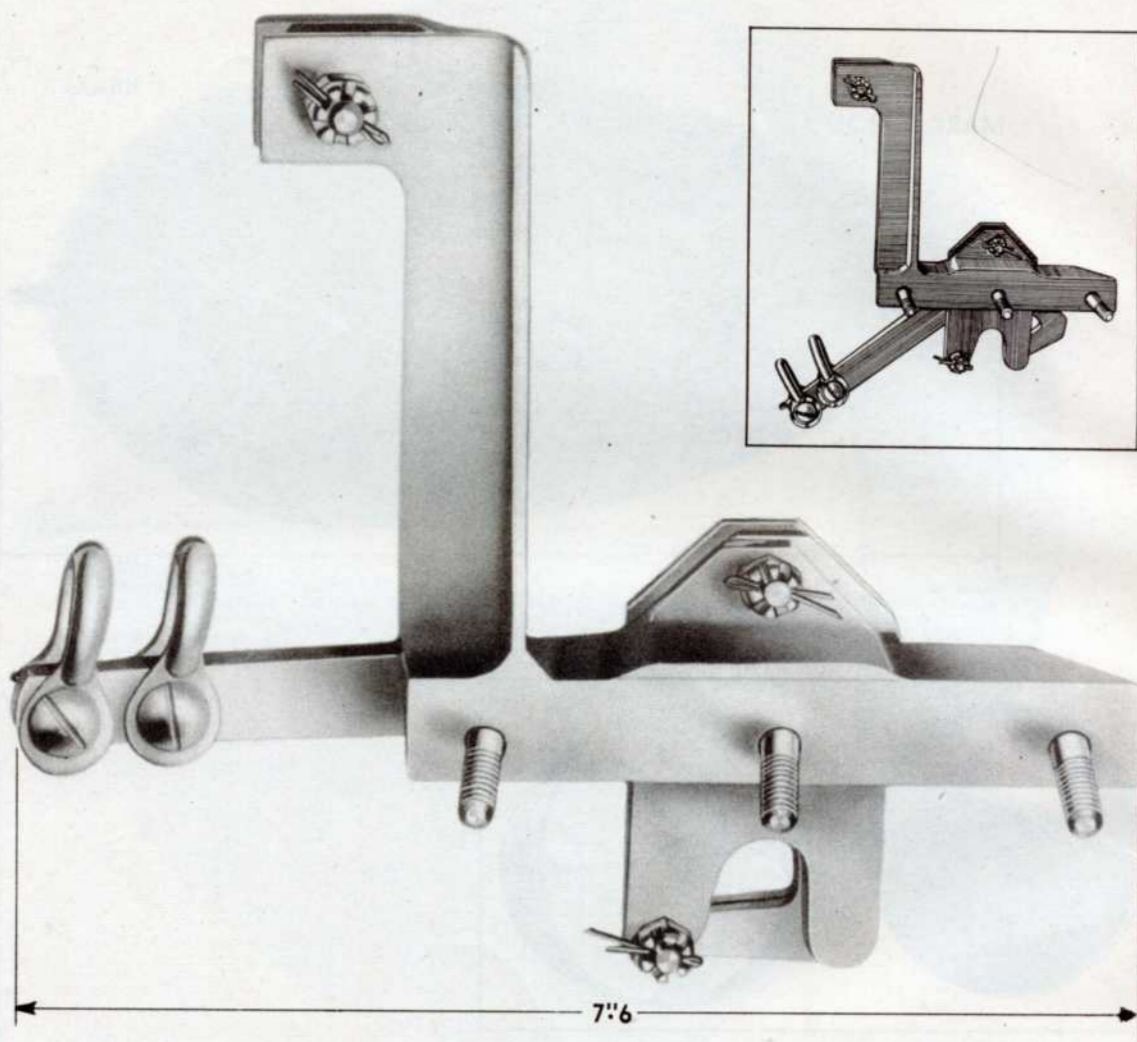
extends longitudinally through the container. The front eye attaches to the target leader and the rear eye to the target.

DIMENSIONS: approx. 34.4 x 16.0 x 16.0 inches.

WEIGHT: approx. 10.2 pounds.

BuORD DWG: SK. 123103.

RELEASE, TARGET LINE, MARK 1



RELEASE, TARGET LINE, MARK 1

STOCK No. 3-R-509

THE Target Line Release Mark 1 is a cable-actuated releasing hook, mounted on SNJ aircraft, and used to release the inboard end of a target line. When used with Aircraft Target Container Mark 1, Mod. 1, the target line from the target in the container is attached to the hook of the target line release. At the end of a towing mission, the target line and attached target are released by pulling

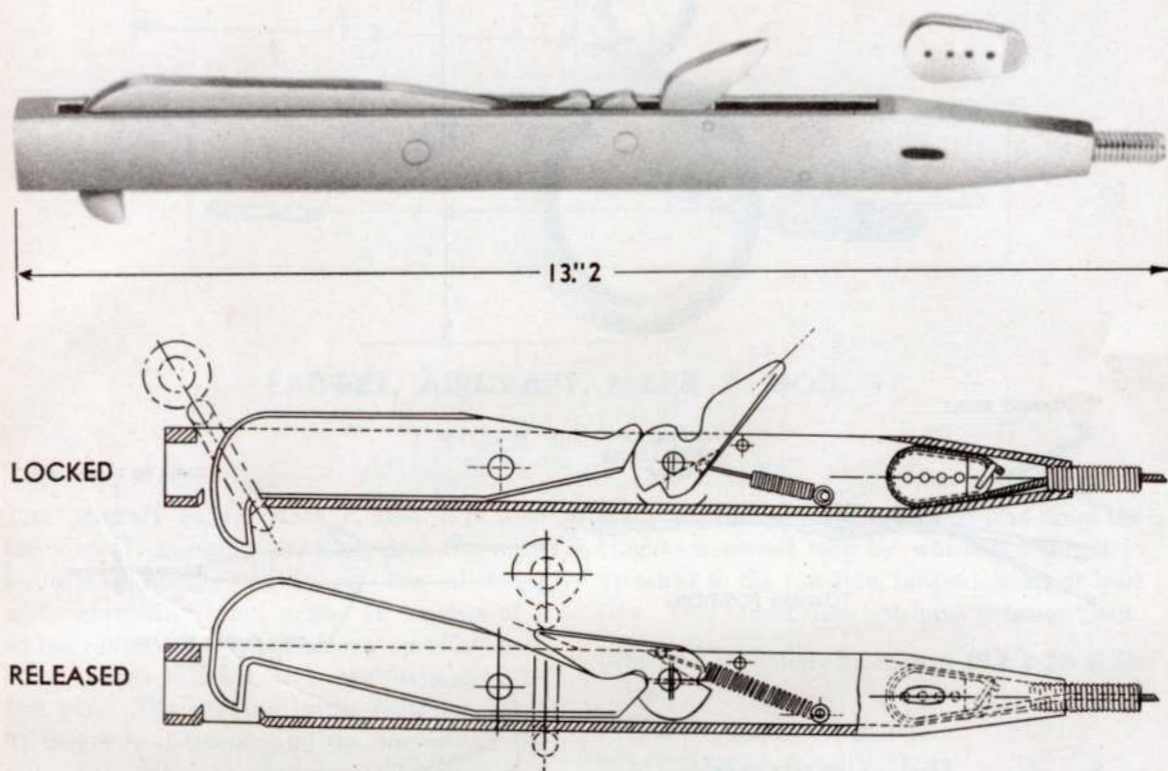
a cable secured to the pivoted arm of the hook. An elastic shock cord returns the hook to the closed position. The target line release may also be used when flying the target off the ground without the use of a container.

DIMENSIONS: approx. 7.6 x 7.0 x 2.5 inches.

WEIGHT: approx. 1.5 pounds.

BuORD DWGS: SK. 91367, Gen. Arr. 330285.

RELEASE, TARGET, MARK 7, MOD. 1



RELEASE, TARGET, MARK 7, MOD. 1

STOCK No. 3-R-517

THE Target Release Mark 7, Mod. 1 is used to hold and permit the exchange of targets at the end of a towing cable while in flight. It is a light, trigger-operated hook device made of case-hardened steel.

The hook, which holds the target, is located at the after end of the release. When the target is to be released, a target release messenger attached by a leader to a target release ring is streamed out from the plane. The messenger is carried down the cable by the force of the drag, and the ring trips the trigger, causing

the hook to rise and release the target. As the ring passes the trigger, the hook returns to its original position and retains the messenger.

A new target is streamed in the same manner as the messenger, the latter being released when the trigger is again tripped.

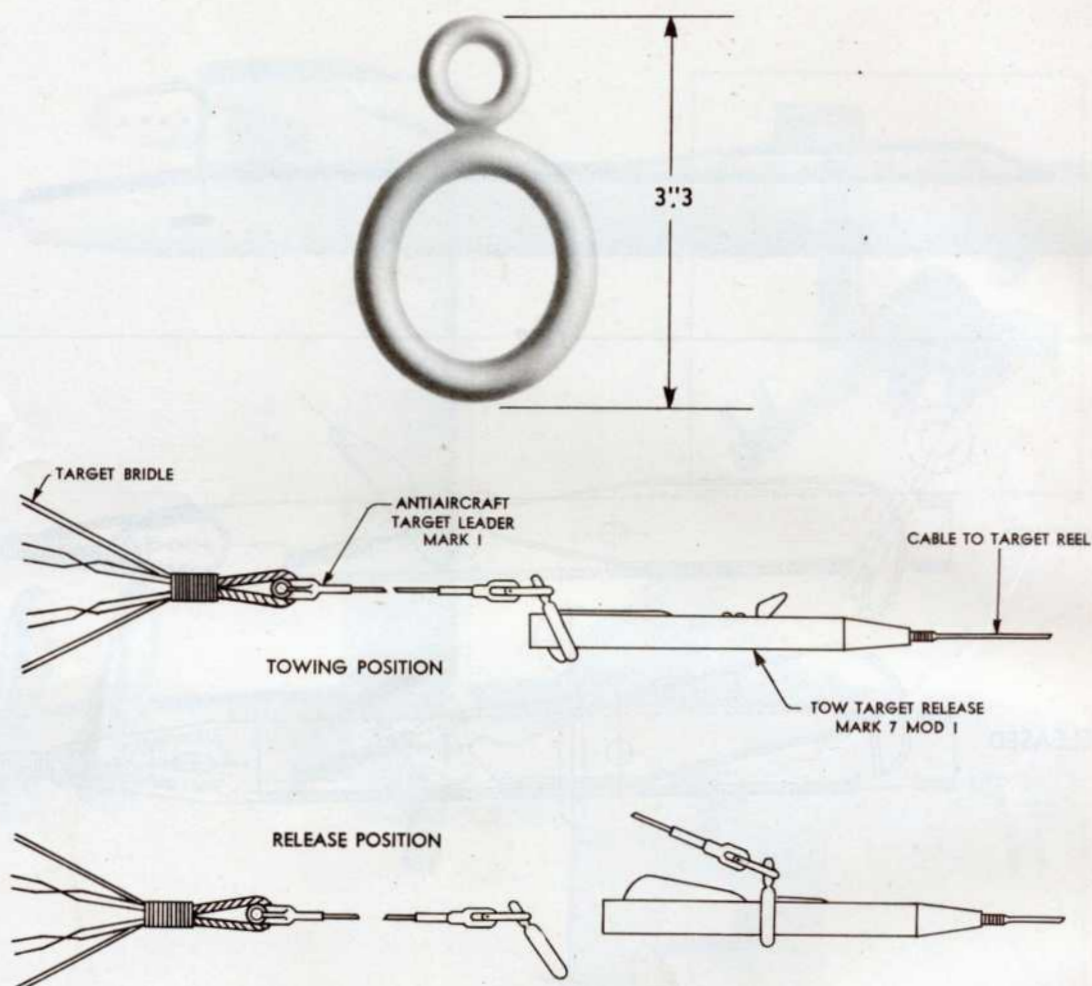
DIMENSIONS: approx. 13.2 x 0.8 x 2.5 inches.

WEIGHT: approx. 1.8 pounds.

PUBLICATION: O.T.I. V-8-43.

BuORD DWG: Gen. Arr. 284393.

RING, AIRCRAFT TARGET RELEASE, MARK 7, MOD. 1



RING, AIRCRAFT TARGET RELEASE, MARK 7, MOD. 1

STOCK No. 3-R-536

THE Aircraft Target Release Ring Mark 7, Mod. 1 is used during towing operations to connect the target leader or lead line to the tow cable. It consists of a large loop and small loop joined at their perimeters. The large loop fits over the tow cable and has a stellite insert to reduce wear caused when the ring slides down the cable.

Several of these rings are usually slipped on a towing cable before the Mark 7, Mod. 1 release is attached. A short length of line, or

a target leader, is made fast to the small loop on each ring. The free ends of these lines or leaders are attached to new targets when targets are to be streamed, or are attached to a releasing messenger prior to releasing used targets.

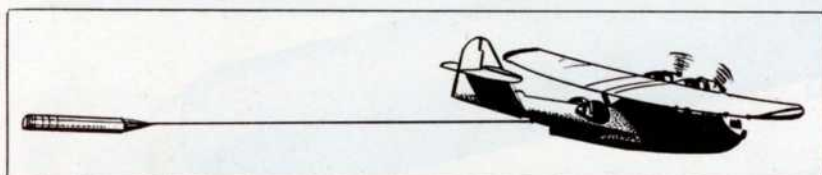
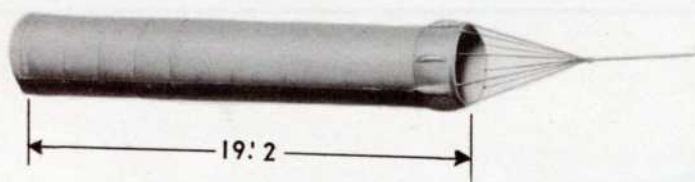
DIMENSIONS: approx. 3.3 x 2.1 x 1.0 inches.

WEIGHT: approx. 0.2 pound.

PUBLICATIONS: O.P. 726, O.T.I. V-7-43.

BuORD DWG: SK. 87283.

TARGET, AIRCRAFT, MARK 7 MODS.



TARGET, AIRCRAFT, MARK 7, MOD. 5

STOCK No. 3-T-355

THE Aircraft Target Mark 7, Mod. 5 is used for aircraft gunnery practice, and for anti-aircraft gunnery practice at low altitudes when exercising small arms. It consists of a white rayon cylindrical sleeve open at both ends. When inflated, it is approximately 19 feet long. The opening in the forward end is 31 inches in diameter and the opening in the tail is 21 inches in diameter. The nose ring consists of piano wire sewed into the cloth.

Eight bridle lines of cotton rope lead from the ring to a served loop by which the target is attached to the tow line, target leader, or lead line. This target does not have flotation pads.

DIMENSION (inflated): approx. 19.2 x 2.6 x 2.6 feet.

WEIGHT: approx. 8.5 pounds.

PUBLICATION: O.T.I. V-35-43.

BuORD DWG: Gen. Arr. 330851.

TARGET, AIRCRAFT, MARK 7, MOD. 6

STOCK No. 3-T-356

THE Aircraft Target Mark 7, Mod. 6 is similar in size and appearance to the Mark 7, Mod. 5. It is made of red rayon and has four 80-inch lengths of No. 2 picture wire sewed to the target at right angles to the nose ring, and spaced evenly around the sleeve to make it radar re-

active. It is equipped with flotation pads.

The target is intended principally for use in antiaircraft target practice in connection with fire control radar. It may also be used for aircraft gunnery practice.

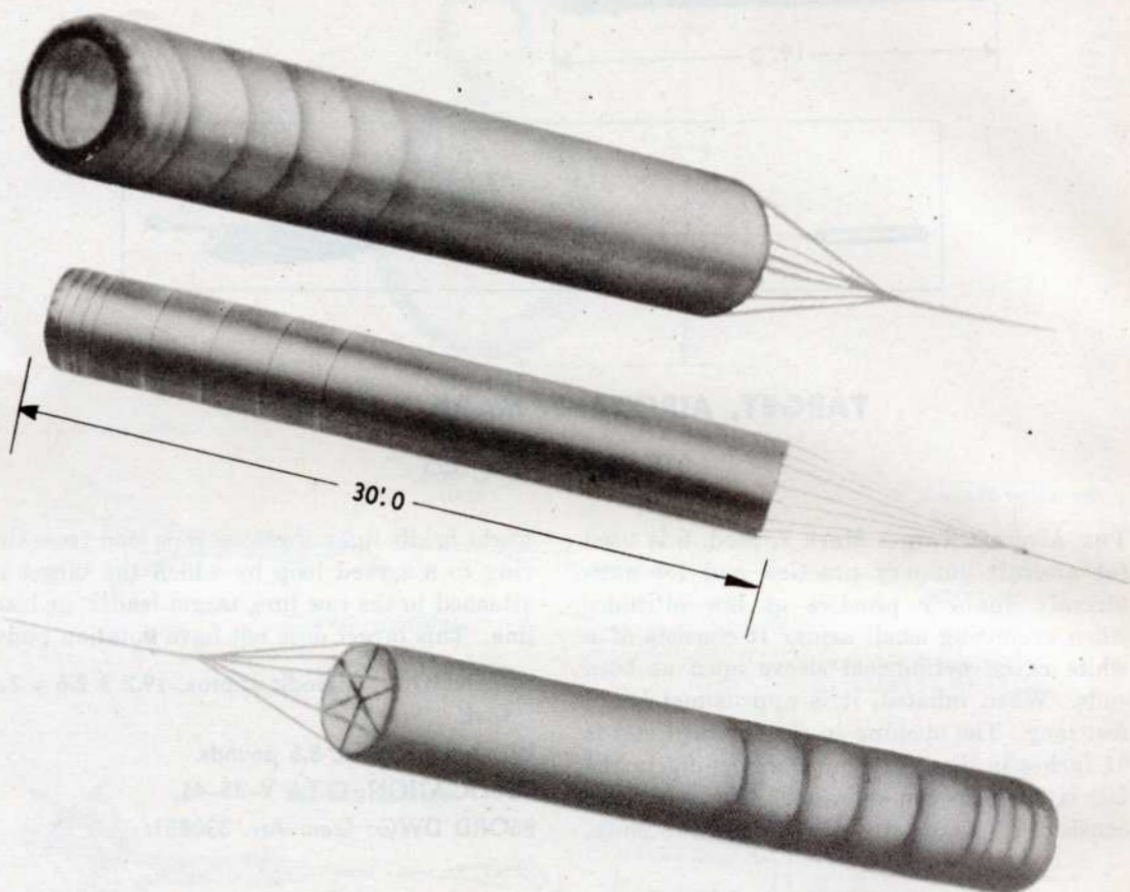
TARGET, AIRCRAFT, MARK 7, MOD. 7

STOCK No. 3-T-357

THE Aircraft Target, Mark 7, Mod. 7 is made

of black rayon but otherwise is the same as the Mark 7, Mod. 6.

TARGET, ANTI-AIRCRAFT, MARK 15, MOD. 1



TARGET, ANTI-AIRCRAFT, MARK 15, MOD. 1

STOCK No. 3-T-387-10

THE Anti-aircraft Target Mark 15, Mod. 1 is a radar target. It consists of a red rayon cylindrical sleeve open at both ends. When inflated, it is approximately 30 feet long. The forward opening is 39 inches in diameter, and the restricted aft opening is 26 inches in diameter. Four 80-inch lengths of No. 2 picture wire secured lengthwise in the seams of the sleeve and evenly spaced around the sleeve make it radar reactive.

The nose is held open by a steel tubular ring which is hinged to permit folding in half. Flotation pads are provided at the forward end.

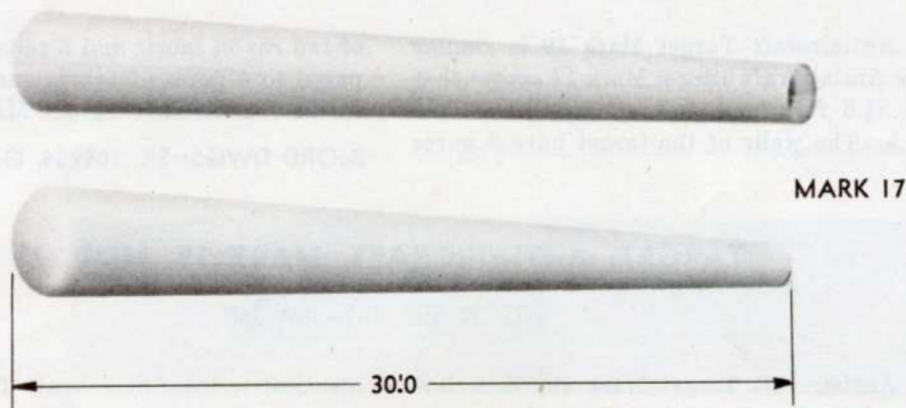
DIMENSIONS: approx. 30.0 x 3.3 x 3.3 feet.

WEIGHT: approx. 15.0 pounds.

PUBLICATIONS: O.T.I. V-5-43, O.C.L. V-16-43.

BuORD DWG: SK. 91296, Gen. Arr. 329955.

TARGET, ANTI-AIRCRAFT, MARK 17 AND MODS., MARK 19 AND MODS., AND TARGET AIRCRAFT MARK 20 AND MOD.



TARGET, ANTI-AIRCRAFT, MARK 17

STOCK No. 3-T-389

THE Antiaircraft Target Mark 17 is made of red low-porosity, calendered, acetate rayon cloth and is in the form of a truncated cone 30 feet long. The forward end is open and is 18.5 inches in diameter. The aft end is 39 inches in diameter, flat and closed. Target walls are of 4 gores of cloth. A steel ring is provided in the nose for attachment of 6 bridle lines. Four lengths of No. 2 picture wire,

96 inches long, are spaced evenly around the target to make it radar reactive. Three flotation pads are provided.

DIMENSIONS: as noted above.

WEIGHT: approx. 15.0 pounds.

PUBLICATION: O.T.I. V-1-44.

BuORD DWGS: SK. 108960, Gen. Arr. 394546.

TARGET, ANTI-AIRCRAFT, MARK 17, MOD. 1

STOCK No. 3-T-389-50

THE Antiaircraft Target Mark 17, Mod. 1 is made of black rayon but otherwise is identical

with the Mark 17.

BuORD DWGS: SK. 108961, Gen. Arr. 394546.

TARGET, ANTI-AIRCRAFT, MARK 17, MOD. 2

STOCK No. 3-T-389-100

THE Antiaircraft Target Mark 17, Mod. 2 is made of white cloth and has no radar wires,

but in other respects is identical with the Mark 17.

BuORD DWGS: SK. 108962, Gen. Arr. 394546.

TARGET, ANTI-AIRCRAFT, MARK 19 AND MODS., MARK 20 AND MODS.

TARGET, ANTI-AIRCRAFT, MARK 19

STOCK No. 3-T-389-350

THE Anti-aircraft Target Mark 19 is similar to the Anti-aircraft Target Mark 17 except that it is 31.6 feet long and is rounded in the breech. The walls of the target have 8 gores

of red rayon fabric and 8 radar wires as compared to 4 gores of fabric and 4 radar wires in the Anti-aircraft Target Mark 17.

BuORD DWGS: SK. 109254, Gen. Arr. 423164.

TARGET, ANTI-AIRCRAFT, MARK 19, MOD. 1

STOCK No. 3-T-389-360

THE Anti-aircraft Target Mark 19, Mod. 1 is made of black rayon fabric, but otherwise is

identical to the Anti-aircraft Target Mark 19.

TARGET, ANTI-AIRCRAFT, MARK 19, MOD. 2

STOCK No. 3-T-389-370

THE Anti-aircraft Target Mark 19, Mod. 2 is made of white rayon fabric, but otherwise is

identical to the Anti-aircraft Target Mark 19.

TARGET, AIRCRAFT, MARK 20

STOCK No. 3-T-363-100

THE Aircraft Target Mark 20 is a non-radar target made of low-porosity, white calendered acetate rayon fabric in the form of a truncated cone 21.3 feet long. The forward end is open and is 15 inches in diameter. The breech end, 31 inches in diameter, is closed

and rounded. Target walls are of 8 gores of fabric. A steel ring is provided in the nose for the attachment of 6 bridle lines.

No flotation pads are provided with this target.

DIMENSIONS: as noted above.

WEIGHT: approx. 8.5 pounds.

BuORD DWGS: SK. 109257, Gen. Arr. 423159.

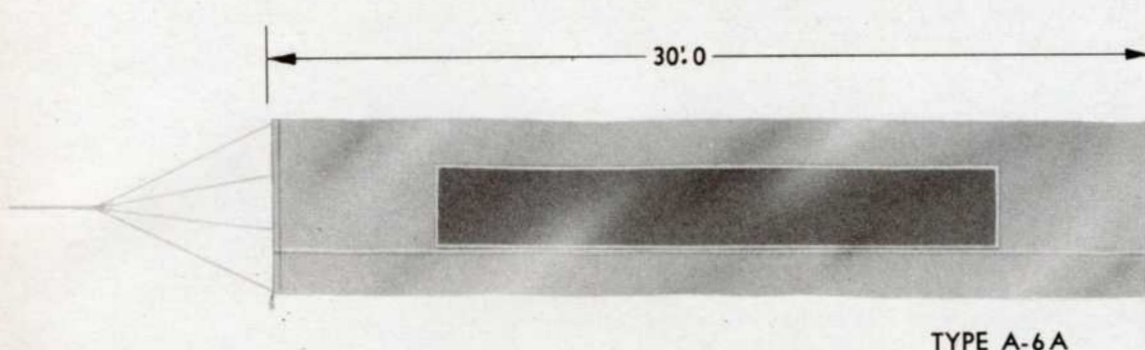
TARGET, AIRCRAFT, MARK 20, MOD. 1

STOCK No. 3-T-363-115

THE Aircraft Target Mark 20, Mod. 1 is similar to and has the same dimensions as the Mark 20, but incorporates several differences. The target, which consists of red rayon cloth instead of white, is made radar reactive by

the inclusion of eight 96-inch pieces of No. 2 picture wire, which are attached to the target body. Two flotation pads are also included with this target.

TARGET, BANNER, TYPE A-6A AND A-10



TARGET, BANNER, TYPE A-6A

STOCK No. 3-T-397

THE Banner Target Type A-6A is used as a target for either aircraft or antiaircraft gunnery. It is a rectangular, radar-reactive, cloth-covered, wire mesh banner with a spreader made of steel tubing at the towing end. The target has a 6-foot long bridle consisting of 4 bridle lines and a towing eyelet. An adjustable counterweight on the spreader provides a means of holding the target vertically or horizontally in flight. The counterweight is fastened to the center of the spreader

tube for horizontal towing and to one end of the spreader tube for vertical towing.

The banner target is not intended to be exchanged in flight. The used target must be released, and the cable reeled in before a new target can be launched.

DIMENSIONS (exclusive of bridle): approx. 30.0 x 6.0 feet.

WEIGHT: approx. 37.5 pounds.

AAF DWG: 41G8831-I.

TARGET, BANNER, TYPE A-10

STOCK No. 3-T-397-500

THE Banner Target Type A-10 is a smaller version of the Type A-6A.

DIMENSIONS (exclusive of bridle): approx. 20.0 x 4.0 feet.

WEIGHT: approx. 25.0 pounds.

AAF DWG: 42G11567-I.

NOTES

MOBILE ORDNANCE EQUIPMENT

MOBILE ORDNANCE EQUIPMENT

BATTERY, ELECTRIC TRUCK

CHARGERS, BATTERY

CRANES

HOIST

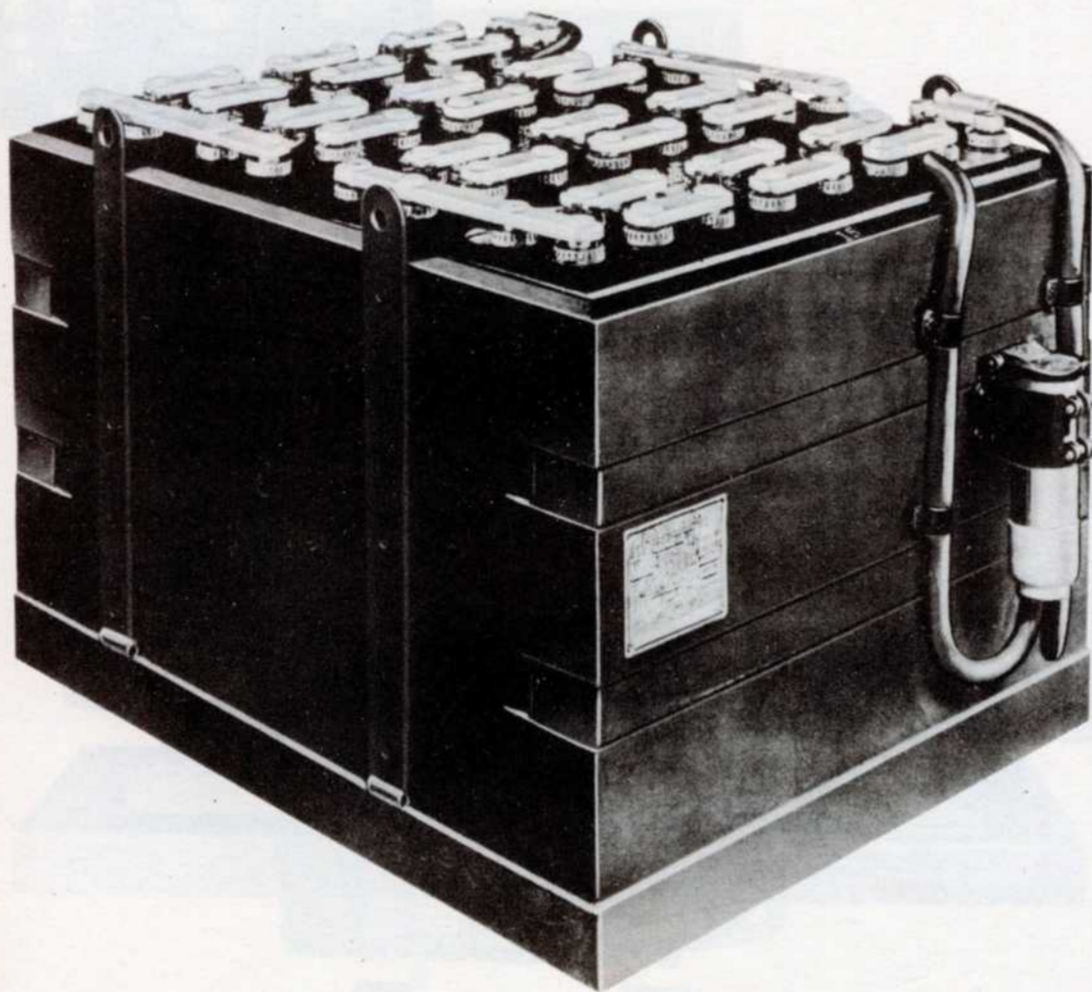
TRACTORS

TRAILERS

TRUCKS

NOTES

BATTERY, ELECTRIC, INDUSTRIAL TRUCK



BATTERY, ELECTRIC, INDUSTRIAL TRUCK

THE Electric Battery for Industrial Trucks comes in 2 types: a 16-cell Model XL 19-plate lead acid battery rated at 495-ampere hours at a 6-hour discharge rate; and a 16-cell Model TLM 19-plate lead acid battery rated at 450-ampere hours at a 6-hour discharge rate.

When shipped for export, the batteries are shipped dry-charged with electrolyte in separate containers.

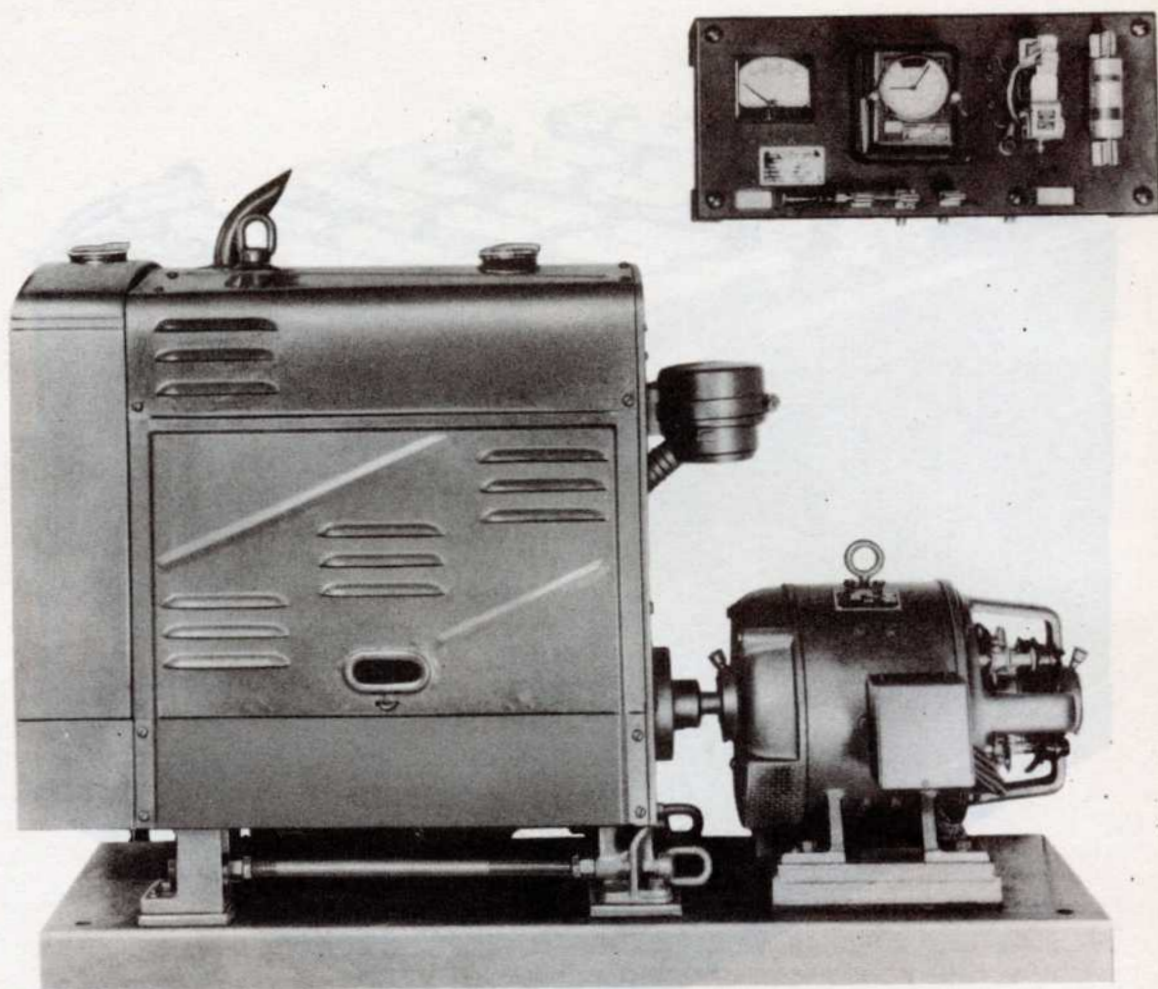
Order repair parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Model XL, Philco Corporation, Trenton, N. J., Model TLM, Electric Storage Battery Co., Philadelphia, Pa.

DIMENSIONS: approx. 51.0 x 32.0 x 27.0 inches.

WEIGHT: approx. 1640 pounds.

CHARGER, BATTERY, ENGINE-DRIVEN, FOR ELECTRIC TRUCK BATTERIES



CHARGER, BATTERY, ENGINE-DRIVEN, FOR ELECTRIC TRUCK BATTERIES

THIS Battery Charger is an engine-driven generator set complete with control panels for charging 16 cell, 450-ampere hour lead-acid batteries. The generator charges batteries in approximately 7 hours and is equipped with an ampere-hour control meter. The engine is controlled by an automatic governor to regulate the output of the generator according to the amount of charge required for the battery.

This unit is used at outlying stations where electric power is not readily available.

Spare parts may be obtained from the

Naval Ammunition Depot, Crane, Indiana. When ordering parts, a duplicate information copy should be sent to the Bureau of Ordnance.

MANUFACTURER: Electric Products Co., Cleveland, Ohio.

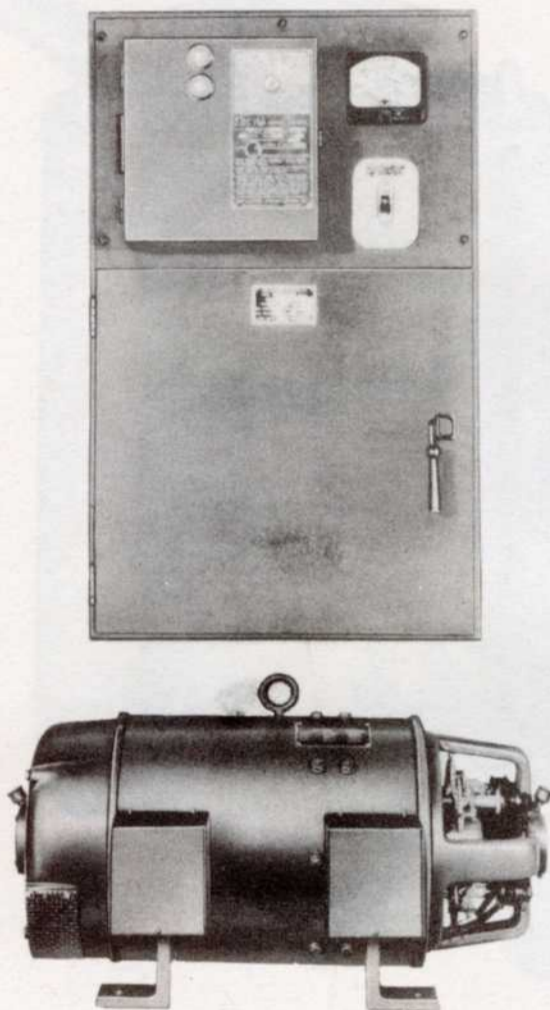
DIMENSIONS:

Engine and Generator, approx. 64.0 x 24.0 x 45.0 inches.

Control Panel, approx. 20.0 x 16.0 x 24.0 inches.

WEIGHT: approx. 1300 pounds.

CHARGER, BATTERY, FOR ELECTRIC TRUCK BATTERIES



CHARGER, BATTERY, MOTOR GENERATOR, SINGLE PANEL FOR ELECTRIC TRUCK BATTERIES

THIS Battery Charger will charge a 16-cell, 450-ampere hour lead-acid battery in approximately 7 hours. It is a single-panel motor generator set operating on a 220-volt, 3-phase, 60-cycle current.

The unit is for use at established bases where power is readily available.

Order spare parts from the manufacturer.

MANUFACTURER: Electric Products Co., Cleveland, Ohio.

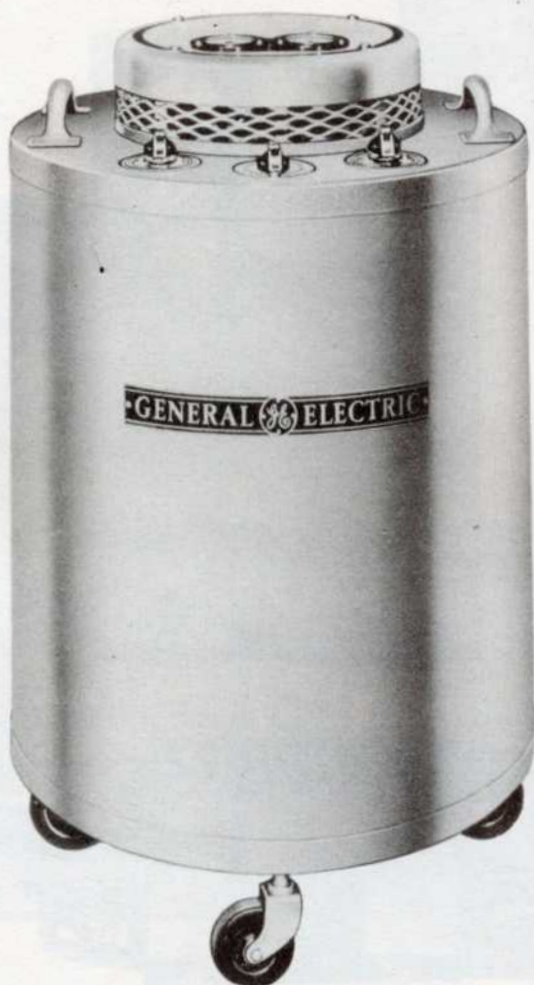
DIMENSIONS:

Panel, approx. 30.0 x 17.0 x 14.0 inches.

Motor generator, approx. 20.0 x 16.0 x 24.0 inches.

WEIGHT: approx. 566 pounds.

CHARGER, BATTERY, FOR AUTOMOBILE BATTERIES



CHARGER, BATTERY, FOR AUTOMOBILE BATTERIES

THIS Battery Charger will charge any standard automotive type lead-acid battery to 80 percent of its capacity in one hour. The unit operates on 110-volt, 60-cycle, AC and is used with the engine generator set of the flood-light trailer. It is complete with all necessary meters, time charts and operating instructions.

The unit should be required only at activities having large numbers of gasoline-powered automotive vehicles supplied by the Bureau of Ordnance.

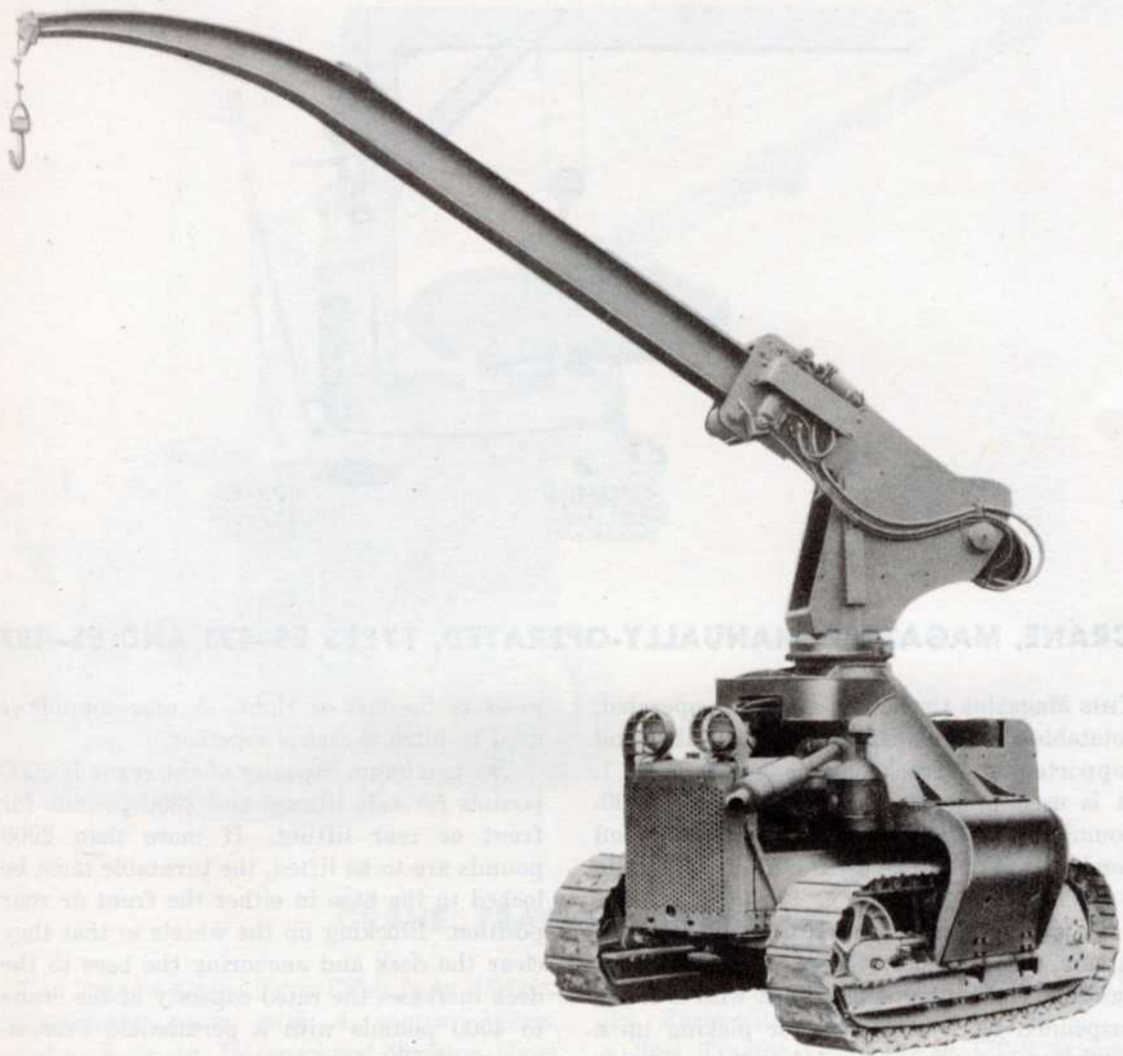
Order spare parts from the manufacturer. The shortage of the copper oxide-type units may necessitate the substitution of bulb-type units. Each bulb-type unit is shipped with 2 extra bulbs; additional bulbs may be ordered from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: General Electric Co., Bridgeport, Conn.

DIMENSIONS: approx. 23.5 x 18.0 x 18.0 inches.

WEIGHT: approx. 147 pounds.

CRANE, TRACTOR, AUSTIN-WESTERN HYDRAULIC



CRANE, TRACTOR, AUSTIN-WESTERN HYDRAULIC

THE Austin-Western Tractor Crane is a retractable boom crane with a 360-degree swing. It is supported on a pedestal and mounted on an International Tractor, Type T-9.

The retractable boom makes it possible to extend the lifting radius of the crane to 16 feet or to retract it to 8 feet. The lifting capacity of the crane is 5000 pounds at 8 feet, and 2500 pounds at 16 feet.

Maximum lifting height from the ground is 18 feet, 10 inches. By using an auxiliary

cable reel, a load 2 feet below ground may be picked up.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

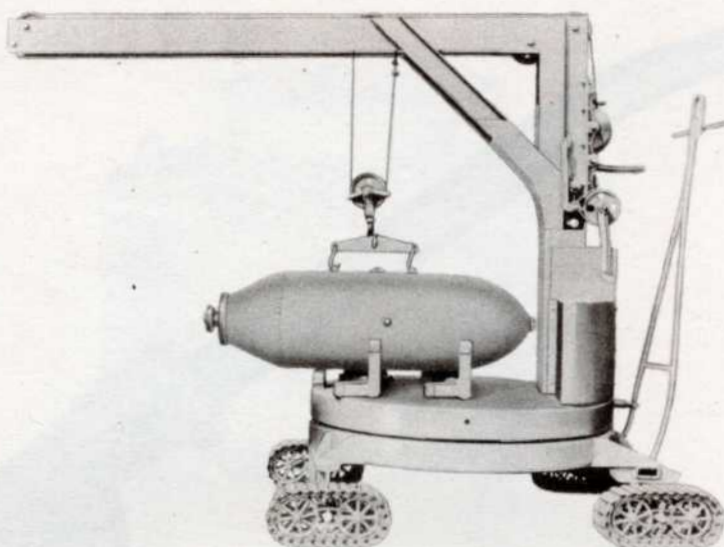
MANUFACTURER: Austin-Western Road Machinery Co., Aurora, Ill.

WEIGHT:

Tractor unit (only), approx. 11,600 pounds.

Crane unit (only), approx. 5,250 pounds.

CRANE, MAGAZINE, MANUALLY-OPERATED, TYPES ES-433 AND ES-437



CRANE, MAGAZINE, MANUALLY-OPERATED, TYPES ES-433 AND ES-437

THIS Magazine Crane is a manually-operated, rotatable crane mounted on a turntable and supported on 4 Track Laying Wheels Mark 1. It is used to hoist and transport one 2000-pound or one 1000-pound and two 500-pound bombs. It may also be used to load bombs onto a trailer.

On the overhanging beam is a trolley which is moved back and forth by rotating a crank handle. The trolley is equipped with a cable-suspended block and hook for picking up a bomb carrier and bomb. A brake lever holds the load at any point.

Bomb cradles on the turntable are used when the load is to be transported by the crane. The circular turntable may be locked in any one of 4 positions, 90 degrees apart. The crane may be moved manually by a drawbar. The drawbar also makes it possible to turn the front axle and track laying wheels 90 de-

grees to the left or right. A rear coupler is used to hitch 2 cranes together.

The maximum capacity of the crane is 2000 pounds for side lifting, and 2800 pounds for front or rear lifting. If more than 2000 pounds are to be lifted, the turntable must be locked to the base in either the front or rear position. Blocking up the wheels so that they clear the deck and anchoring the base to the deck increases the rated capacity of the crane to 4000 pounds with a permissible over-capacity of 800 pounds.

Magazine Crane Type ES-433 is being replaced by Type ES-437. The latter type has the same capacity but is considerably lighter. Two designs of different weights were produced in Type ES-433 as shown below.

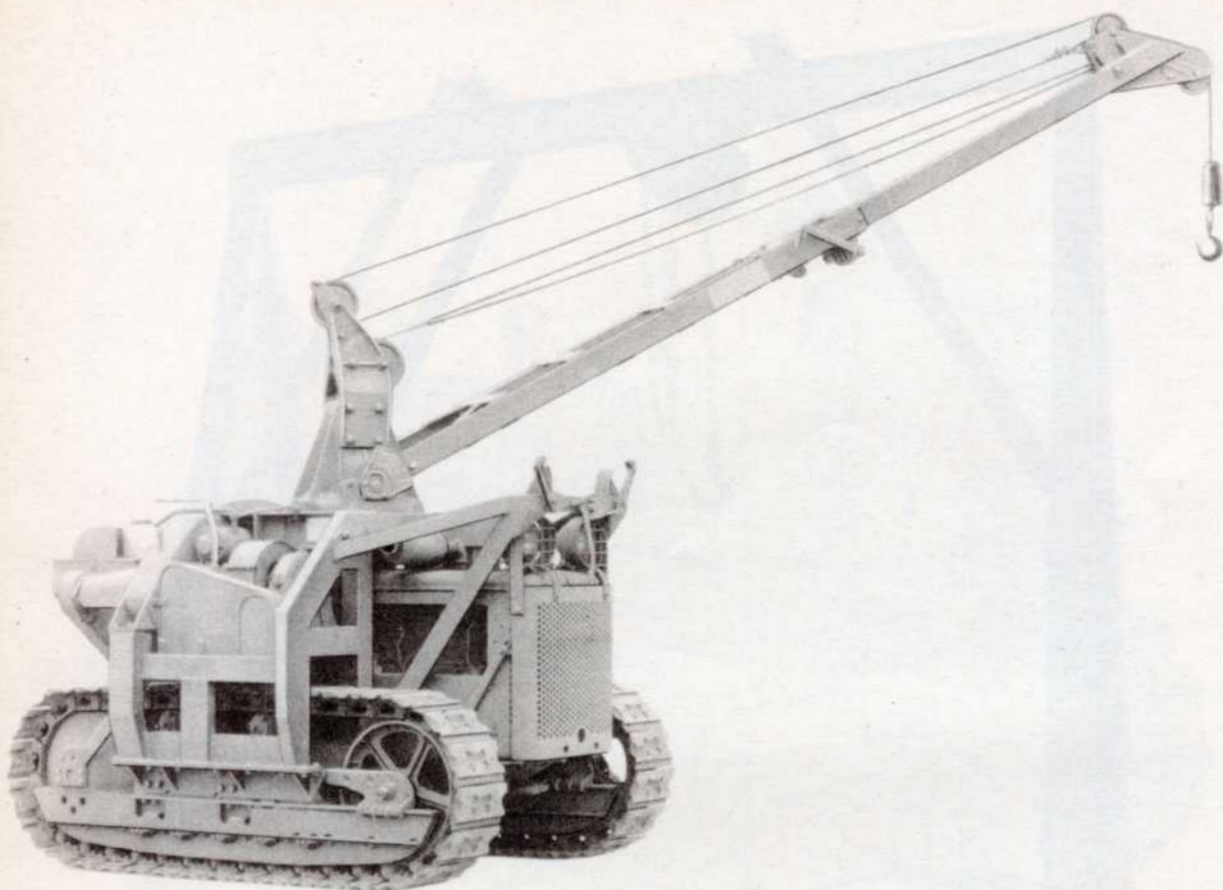
Order spare parts from the Naval Ammunition Depot, Crane, Ind.

MANUFACTURER: Athey Truss Wheel Co., Chicago, Ill.

	Model ES-433	Model ES-437
DIMENSIONS:		
Lifting height from floor to hook,	approx. 8.8 x 4.5 x 7.5 feet. approx. 6 feet 1 inch.	11.7 x 4.5 x 7.5 feet. 6 feet 3 inches.
WEIGHT:	approx. 3900 pounds, 4360 pounds. 3,260 pounds.	

PUBLICATION: Operating Maintenance Manual and Parts Catalog No. 1, Athey Truss Wheel Co.

CRANE, TRACTOR, TYPE CT-9



CRANE, TRACTOR, TYPE CT-9

THE Tractor Crane Type CT-9 is an 18-foot, retractable crane with 4 control levers, mounted on an International Tractor Type T-9. It may be used as a lifting unit, as a tractor, or for combination lifting and transporting.

The 3 crane mechanisms, boom swing, boom lift, and load lift, are operated by power taken from the rear power take-off of the tractor through a friction clutch. The boom swing may be stopped instantaneously by a special brake mechanism. Four control levers make it possible to operate the 3 crane mechanisms independently or simultaneously.

The crane has a 270-degree swing and a lifting capacity of 2300 pounds at 16 feet, or 5000 pounds at 9 feet when it is equipped with an 18-foot boom.

This crane supersedes the Tractor Crane

Type T-6 and the Tractor Crane Type TD-14. Parts will be stocked.

The Tractor Crane Type CT-9 is interchangeable as a complete assembly with the Austin-Western tractor crane.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURERS: Trackson Co., Milwaukee, Wis.; Heil Co., Milwaukee, Wis.; Superior Equipment Division of Ohio Locomotive Works, Bucyrus, Ohio.

DIMENSIONS (without boom): approx. 10.0 x 7.5 x 9.3 feet.

WEIGHT: approx. 18,435 pounds.

PUBLICATION: Operators Manual and Parts Manual Model CT-9, Swing Crane, Trackson Co.

HOIST, DOUBLE "A" FRAME



HOIST, DOUBLE "A" FRAME

THE Double A-Frame Hoist consists of 2 A-frames connected at the top by an I-beam and suitable channel bracing. A spur geared pul-

MANUFACTURER: Thomas Langan & Associates, Annapolis, Md.

DIMENSIONS: approx. 12.5 x 8.0 x 14.8 feet.

WEIGHT: approx. 1836.0 pounds.

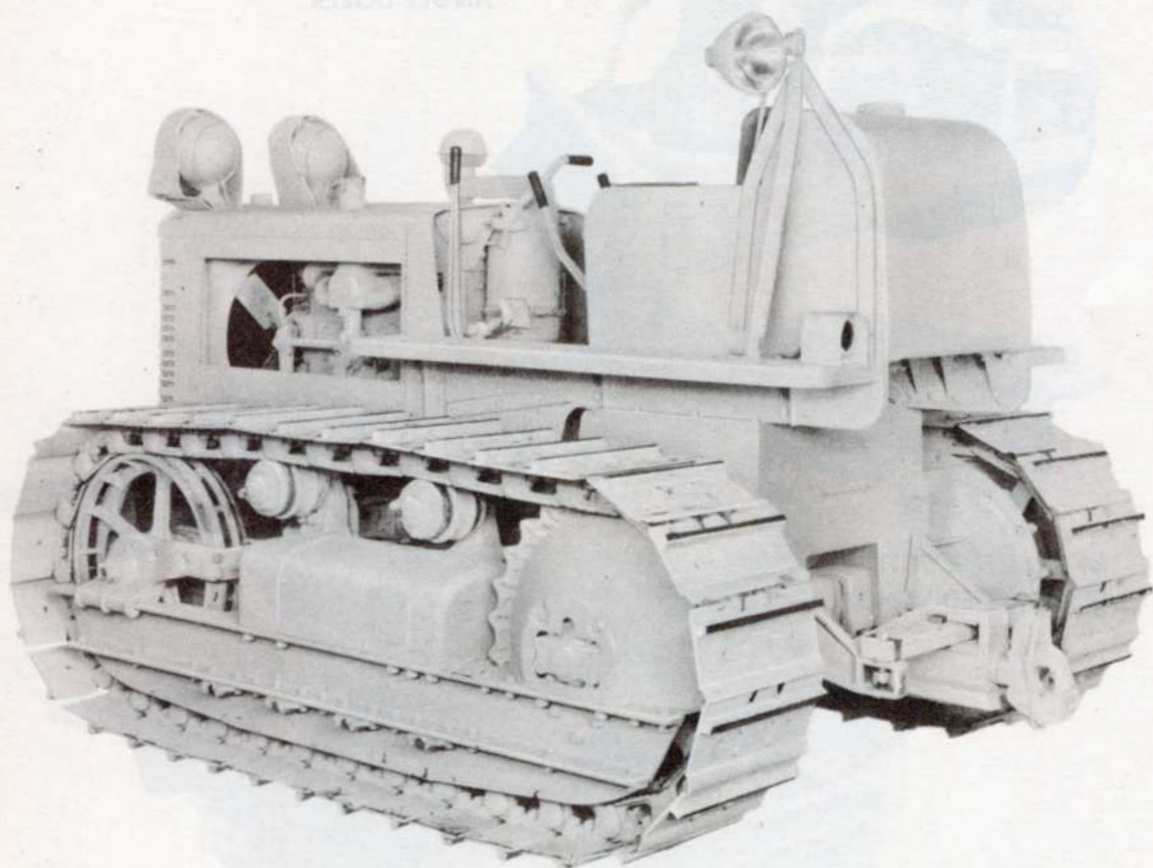
ley block with chains runs along the I-beam. The unit is mounted on 4 rollers placed beneath the legs of the A-frames.

CAPACITY: approx. 3 tons.

MODEL NUMBER: 101A.

MFR'S DWG: Thomas Langan and Associates, SK. 101.

TRACTOR, GASOLINE, TYPE T-9



TRACTOR, GASOLINE, TYPE T-9

THE Track Laying Tractor Type T-9 is a gasoline-powered military model equipped with steel grouser shoes. It is primarily used to tow trailers but it also furnishes power for and supports other types of equipment. It is equipped with a 4-cylinder gasoline engine, hand levers for steering, and headlights. The tractor has 5 forward speeds and one reverse speed.

Spare parts for all types of tractors are extremely critical and should not be ordered un-

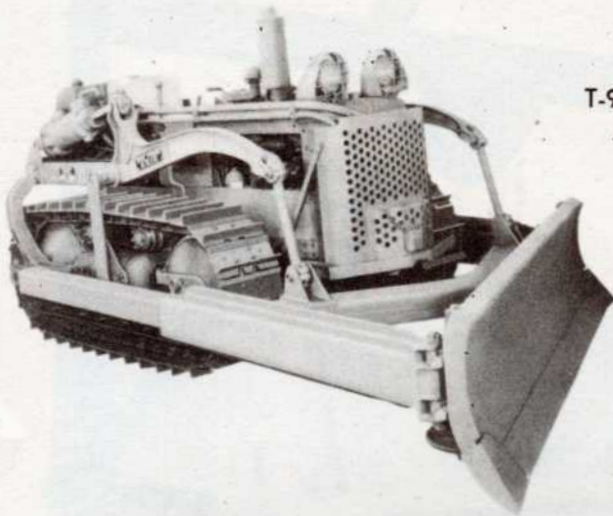
less absolutely necessary. Order spare parts from the Naval Ammunition Depot, Crane, Indiana, and send an information copy to the Bureau of Ordnance.

DIMENSIONS: approx. 9.5 x 6.8 x 5.3 feet.

WEIGHT: approx. 9,700 pounds.

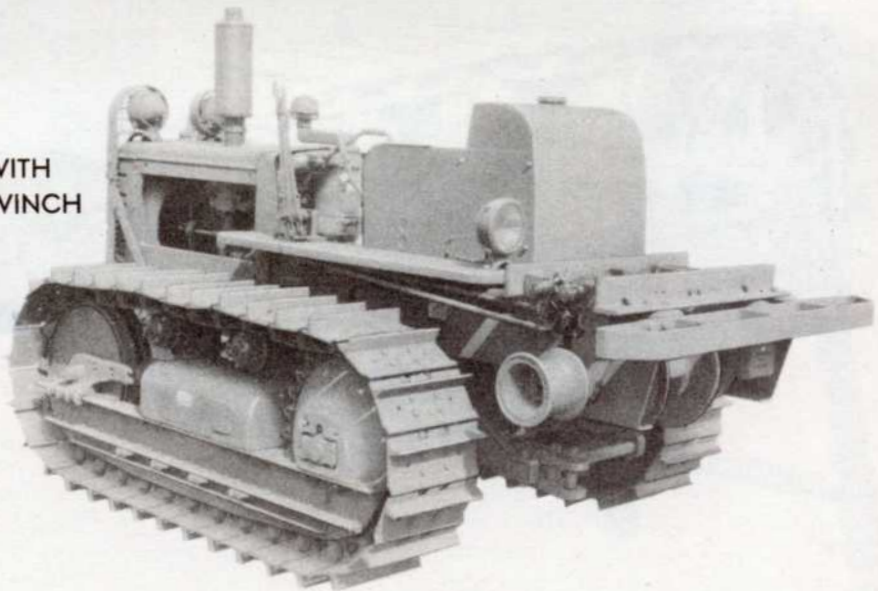
PUBLICATION: Instruction Manual and Parts List, International Harvester Co., 180 North Michigan Avenue, Chicago, Ill.

TRACTOR, GASOLINE, TYPE T-9 (CONT'D)



T-9 TRACTOR WITH
ANGLE DOZER

T-9 TRACTOR WITH
REAR MOUNTED WINCH



TRACTOR, GASOLINE, TYPE T-9 WITH ANGLE DOZER

THE Gasoline Tractor Type T-9 may be equipped with an angle dozer identified by the manufacturer as a Bucyrus-Erie Model 20-21 Hydraulic Bullgrader, with Bucyrus-Erie

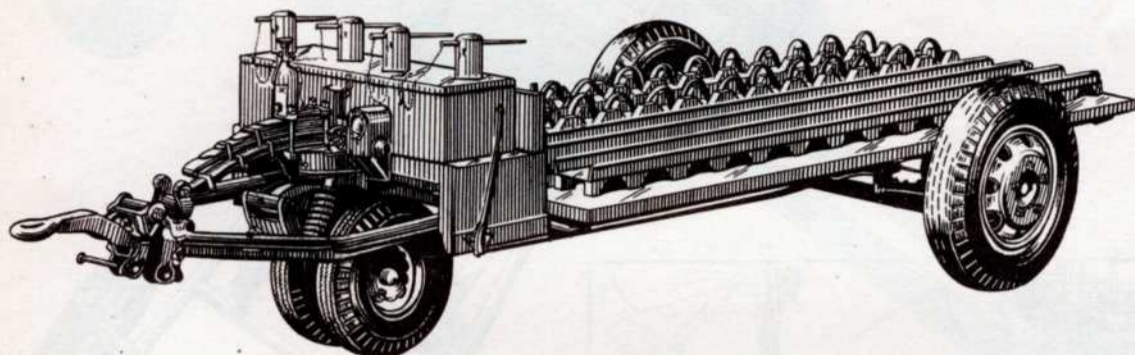
Model C-22 Power Control Unit. The blade of the angle dozer may be adjusted to any one of 3 angle positions.

TRACTOR, GASOLINE, TYPE T-9 WITH WINCH

THE Gasoline Tractor Type T-9 may be equipped with a Gar Wood winch, Model T4RBU, either front or rear. The capacity of

the winch is approximately 15,400 pounds with a bare drum, and 8,580 pounds with a full drum.

TRAILER, BOMB, TYPE M-5



TRAILER, BOMB, TYPE M-5

THE Bomb Trailer Type M-5 is a pneumatic-tired, 4-wheel trailer with a flat platform for boxed ammunition and detachable steel racks for bombs ranging from 100 to 4000 pounds. The racks are installed with the cradles cross-wise of the platform to hold 100-pound bombs, and with the cradles on end along the sides of the platform to hold four 1000-pound bombs. Bomb fuzes are carried in a fuze box mounted in front.

A yoke and hitch assembly joins the trailer to the prime mover, such as a bomb service truck. Electric brakes are provided. A standard pintle hook is attached to the rear frame to

permit connecting trailers in train. The frame is spring-supported on axles whose front wheels are placed close together, to shorten the turning radius.

MANUFACTURERS: Saginaw Products Corporation, Saginaw, Mich.; Oneida Ltd., Canostota Division, Canostota, N.Y.; Trailer Co. of America, Cincinnati, Ohio; and American Seating Company, Grand Rapids, Mich.

TIRES:

Rear, 7.5 x 18.

Front, 6.5 x 10.

PUBLICATION: Army Ord Part II, SNL G-74.

TRAILER, BOMB, LIGHTER-THAN-AIR TYPE, MARK 2



TRAILER, BOMB, LIGHTER-THAN-AIR TYPE, MARK 2

THE Lighter-Than-Air Type Bomb Trailer Mark 2, a light 4-wheel trailer with 2 cross-wise cradles, is used to carry two 325-pound or two 650-pound aircraft depth bombs. The cradles are placed crosswise to help keep the trailer and bombs parallel to the bomb racks of the airship as the craft shifts around its mooring mast. The frame is made of welded steel piping. Four hold-down webbing straps hold bombs up to a diameter of 18 inches securely in the cradles.

The pivoted drawbar bracket, tie-rods and wheels can be swung about 40 degrees either way by a drawbar handle. The minimum turning radius is about 12 feet.

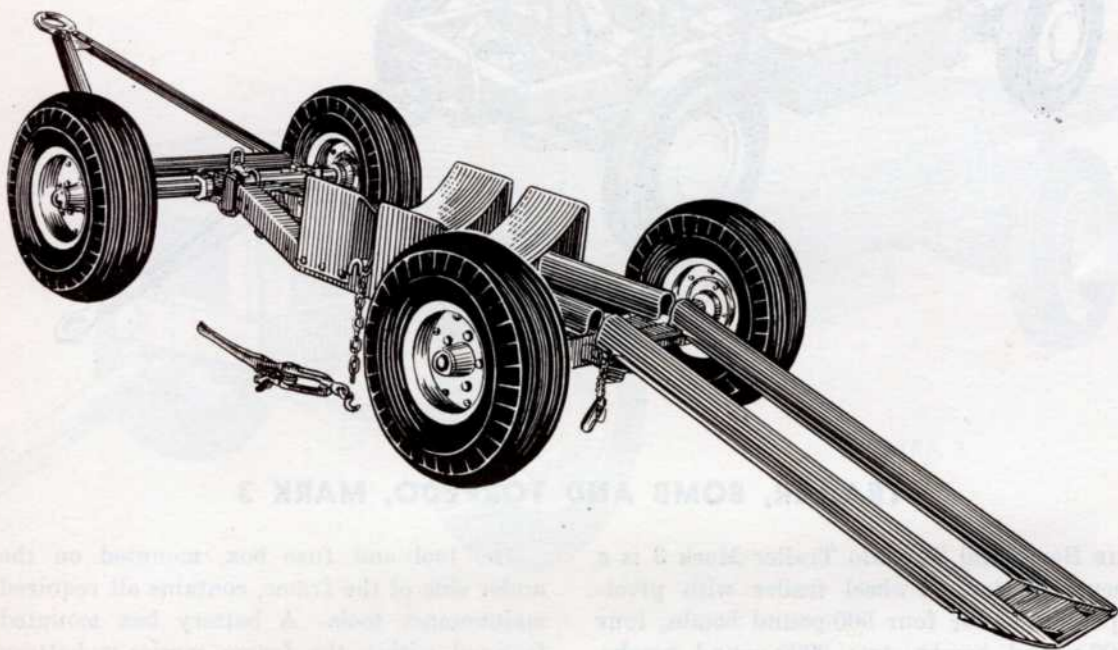
Spare parts for this trailer are not available.

MANUFACTURER: Highway Trailer Co., Edgerton, Wis.

TIRES (motorcycle type): 4.0 x 18.

PUBLICATION: Service Manual, Model SKD-2237, Highway Trailer Co.

TRAILER, BOMB, MARK 2 MODS.



TRAILER, BOMB, MARK 2, MOD. 1

THE Bomb Trailer Mark 2, Mod. 1 is a low-slung, heavy type trailer with a central bomb cradle for bombs up to and including the 2000-pound type. Bombs are held in the cradle by a load binder chain and eccentric tightener.

The trailer, which has small wheels, is used to position bombs under airplanes when there is little space between the fuselage and the

ground. A loading ramp stowed under the trailer is used when bombs are loaded by hand from the ground.

This trailer may be attached for towing to Bomb Trailer Mark 1 or Mark 3, or to bomb service trucks or cargo trucks.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Anthony Co., Streator, Ill.

TIRES: 6.0 x 9.

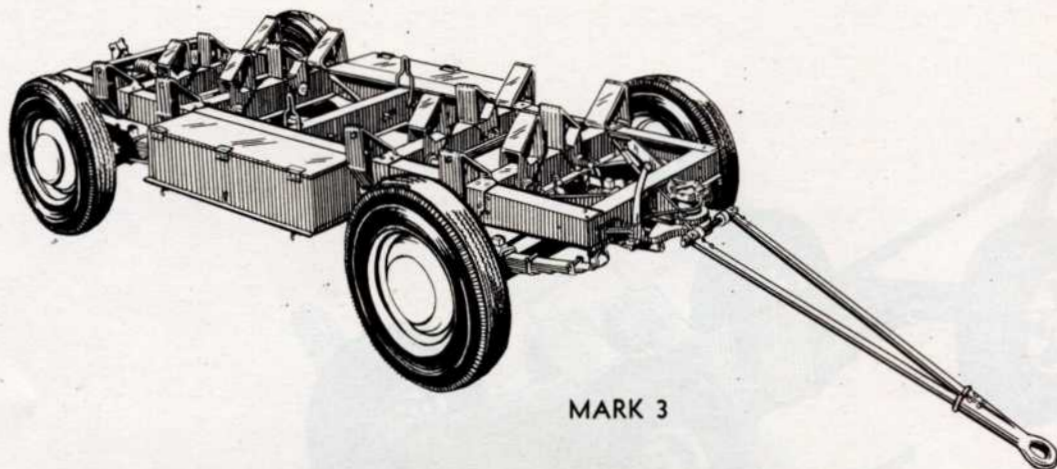
TRAILER, BOMB, MARK 2, MOD. 2

THE Bomb Trailer Mark 2, Mod. 2 is identical to the Bomb Trailer Mark 2, Mod. 1.

MANUFACTURER: Highway Trailer Co., Edgerton, Wis.

PUBLICATION: Service Manual, Model SKD-2306, Highway Trailer Co.; O.P. 1073.

TRAILER, BOMB AND TORPEDO, MARK 3 AND MOD.



TRAILER, BOMB AND TORPEDO, MARK 3

THE Bomb and Torpedo Trailer Mark 3 is a pneumatic-tired, 4-wheel trailer with pivot-type cradles for four 500-pound bombs, four 1000-pound bombs, two 2000-pound bombs, one 4000-pound bomb or an aircraft torpedo. The trailer has a fold-back drawbar with a coupling eye, and a pintle hook mounted on the rear frame. It can be towed in trains consisting of up to 4 trailers by the Bomb Service Truck Mark 1.

Bombs or torpedoes are held in place by an adjustable load binder and chain assembly tightened with a lever. Four load binders may be installed on a trailer. When not in use, they are carried in the tool box.

The 8 inboard, load-carrying cradles pivot outward to form a single cradle in the center for a 4000-pound bomb or torpedo, or inward to form with the outer brackets, 2 parallel cradles for 2 or 4 bombs.

The tool and fuze box, mounted on the under side of the frame, contains all required maintenance tools. A battery box mounted forward within the frame carries a battery for emergency operation of the Warner electric brakes on the rear wheels of the trailer. A hand lever operates the parking brakes.

Other equipment includes a blackout tail and stop light, a blackout switch, electric lantern, and a push-pull switch to cut out the individual tail and stop light when the trailer is not at the end of the train.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Anthony Co., Streator, Ill.

DIMENSIONS: approx. 11.3 x 2.3 x 5.3 feet.

WEIGHT: approx. 1,550 pounds.

TIRES: 6.00 x 16.

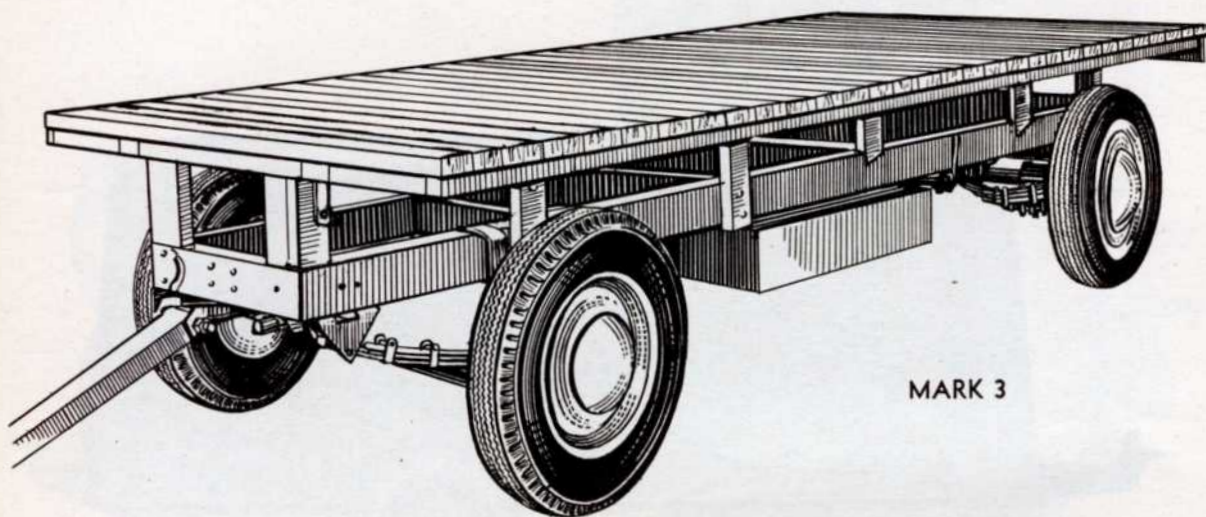
TRAILER, BOMB AND TORPEDO, MARK 3, MOD. 1

THE Bomb and Torpedo Trailer Mark 3, Mod. 1 is the same as the Mark 3, except that

it is manufactured by the Highway Trailer Company, Edgerton, Wisconsin.

PUBLICATION: Service Manual, Model SKD-2317 Highway Trailer Co.

TRAILER, BOMB AND TORPEDO, WITH PLATFORM, MARK 3 AND MOD.



MARK 3

TRAILER, BOMB AND TORPEDO, WITH PLATFORM, MARK 3

THE Bomb and Torpedo Trailer with Platform Mark 3 is used to move boxed ammunition or equipment. It is made from Bomb and Torpedo Trailer Mark 3 which has been stripped down to the frame and on which a wooden platform has been installed. The platform is made from the export box in which the trailer is shipped. Attachments removed from the

trailer during stripping are stored in the tool and storage box. The platform, which measures approximately 13 feet by 5 feet, is raised above the frame by short legs in order to clear the tires.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

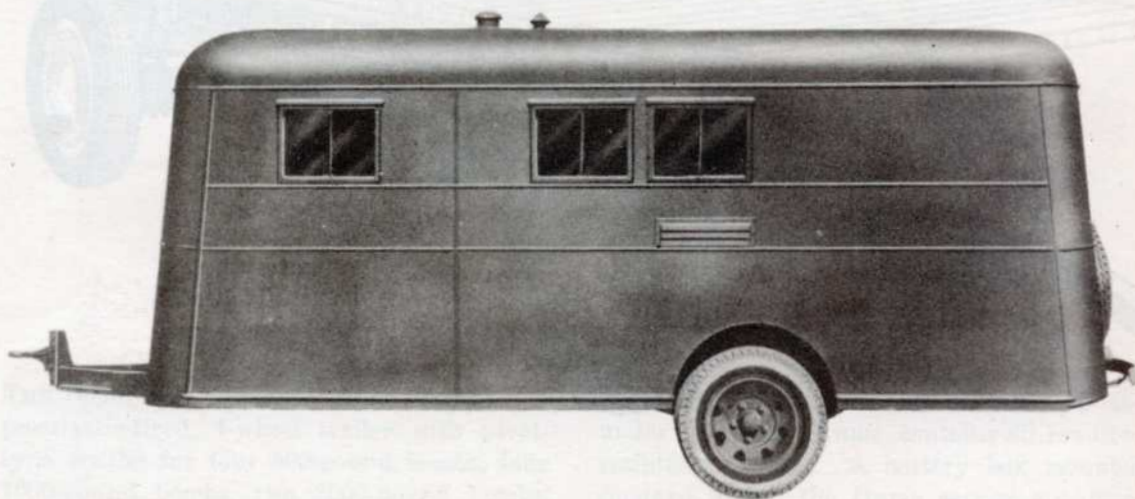
MANUFACTURER: Anthony Co., Streator, Ill.

TRAILER, BOMB AND TORPEDO, WITH PLATFORM, MARK 3, MOD. 1

THE Bomb and Torpedo Trailer with Platform Mark 3, Mod. 1 is the same as the Mark

3, except that it is manufactured by the Highway Trailer Co., Edgerton, Wis.

TRAILER, BUNKHOUSE, PNEUMATIC-TIRED



TRAILER, BUNKHOUSE, PNEUMATIC-TIRED

THE Bunkhouse Trailer is a one-ton van equipped with 8 sleeping bunks and complete cooking, heating, and sanitary facilities. It is supported by dual pneumatic rear wheels on

a single axle. There are no front wheels. A front towing eye attaches the trailer to the prime mover.

Order spare parts from the manufacturer.

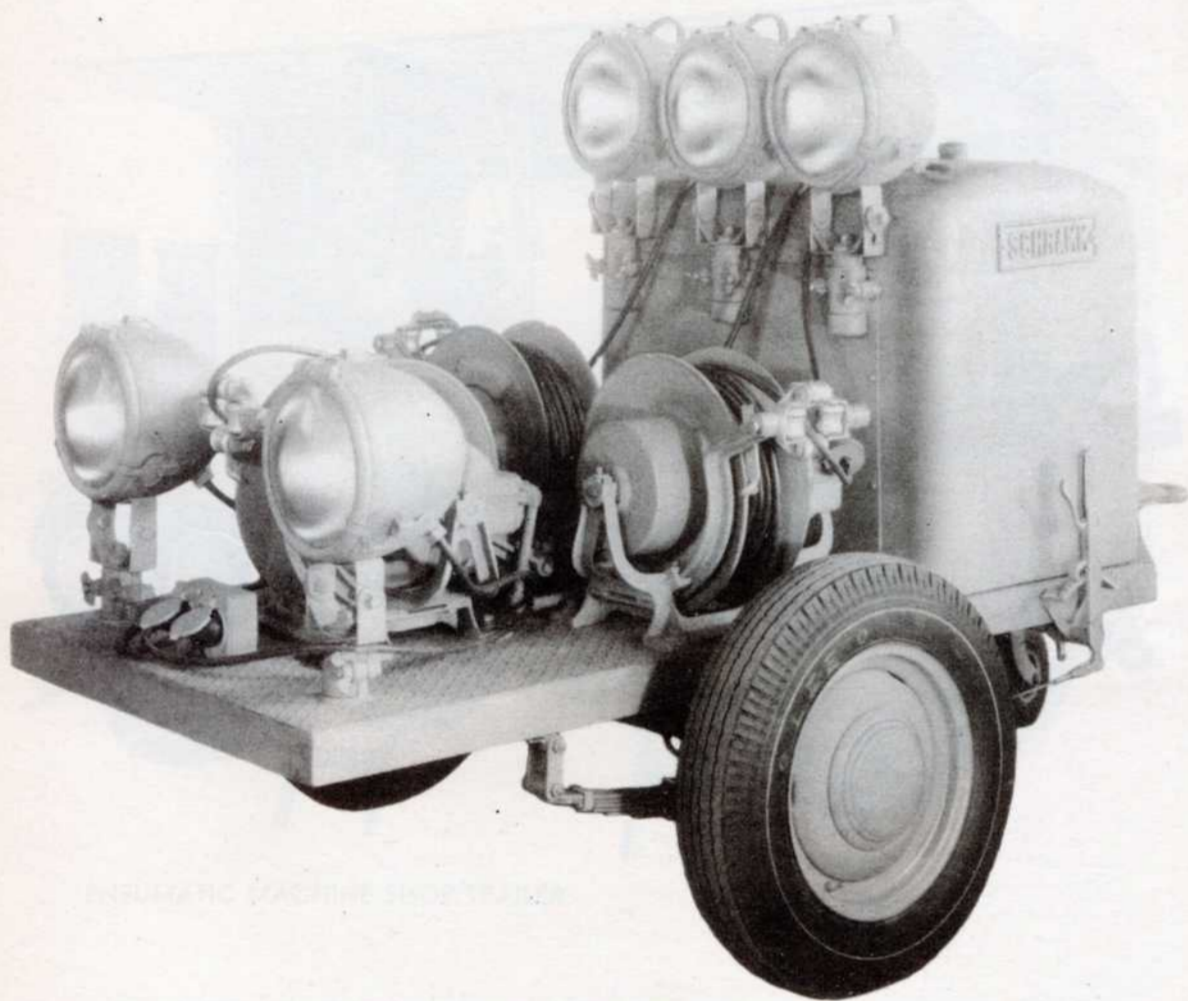
MANUFACTURER: A. J. Miller Auto Cruiser Trailer, Inc., Bradenton, Fla.

DIMENSIONS: approx. 21.3 x 7.0 x 8.6 feet.

WEIGHT: approx. 5,385 pounds.

TIRES: 7.00 x 20.

TRAILER, FLOODLIGHT, SCHRAMM 2 KW



TRAILER, FLOODLIGHT, SCHRAMM 2 KW

THE Floodlight Trailer is a 2-kilowatt portable unit used for night illumination. It is a 2-wheel platform equipped with Warner electric brakes and pneumatic tires carrying a gasoline engine, an AC generator, a control panel, 5 floodlights, 4 posts, 3 reels, and 3 tripods.

The engine is coupled to the 2000-watt, 110-volt, single-phase, 60-cycle generator.

An adjustable drop leg with a small pneumatic wheel is used to balance the trailer when it is detached from its prime mover. A draw-

bar in front provides a means for towing the trailer.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

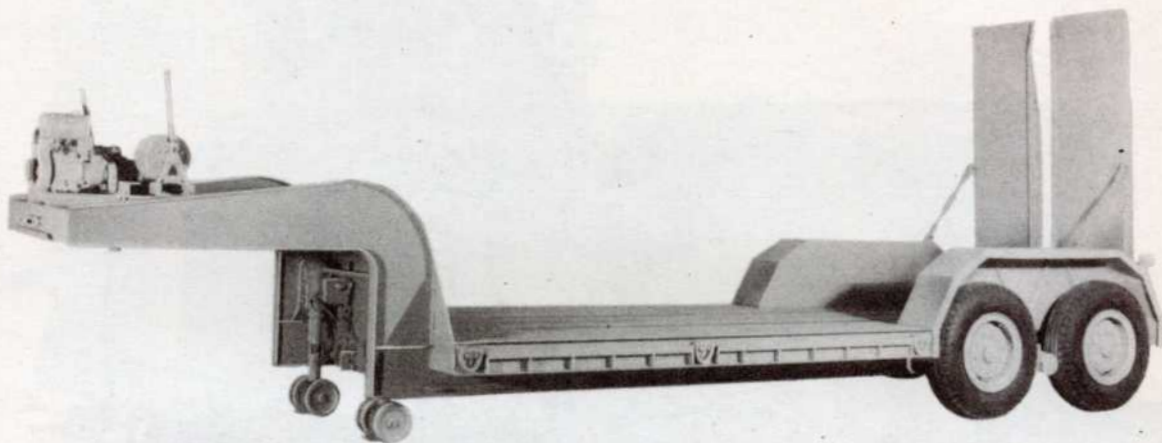
MANUFACTURER: Schramm, Incorporated,
West Chester, Pa.

DIMENSIONS: approx. 5.5 x 8.9 x 4.9 feet.

WEIGHT: approx. 1,950 pounds.

PUBLICATION: Operation, Maintenance Manual
No. FL-42 Parts List No. FL-43-S Schramm, Inc.

TRAILER, MACHINERY, LOW-BED, PNEUMATIC, MODEL SKD-2272



TRAILER, MACHINERY, LOW-BED, PNEUMATIC MODEL SKD-2272

THE Low-Bed Machinery Trailer is a semi-trailer used chiefly to transport electric industrial trucks between magazines and battery charging stations. The free height of the deck above the ground is 26.8 inches, loaded height, 25.1 inches.

Movable ramps, 9 feet long, hinged to the rear of the trailer, are carried in a vertical position during transportation. When electrical industrial trucks are being loaded, the ramps are lowered and the trucks are driven onto the trailer under their own power. A gasoline-powered winch on the trailer may be used to load trucks which lack power to run up the ramp.

The trailer has both a hand brake and an

air brake, and is being equipped with mine tracks for transporting assembled mines at advanced mine assembly units. The trailer is hauled by a Truck-Tractor C-90T, or a Sterling 4 x 4 Truck-Tractor.

MANUFACTURER: Highway Trailer Co., Edgerton, Wis.

DIMENSIONS: approx. 28.3 x 8.3 x 5.5 feet.

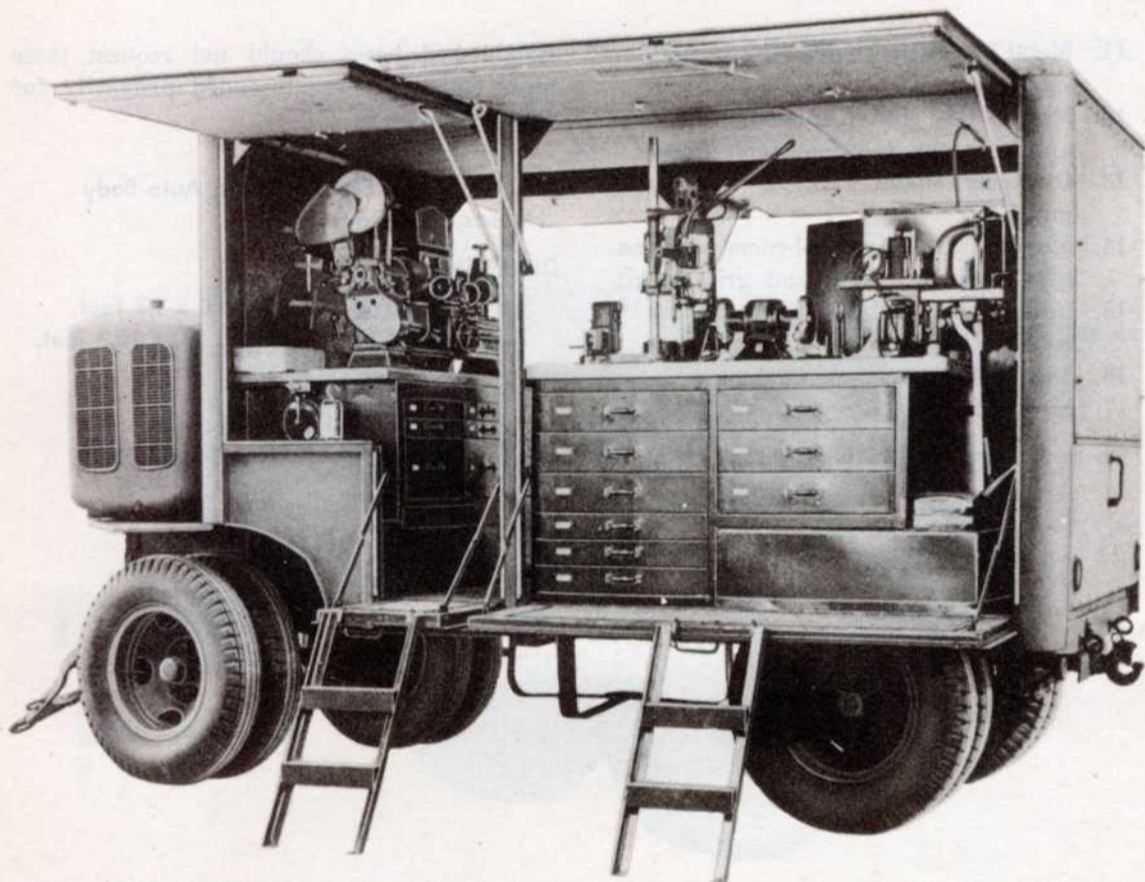
WEIGHT: approx. 11,900 pounds.

CAPACITY: approx. 12 tons.

TIRES: 10.00 x 20.

PUBLICATION: Parts List and Maintenance Manual, Model SKD-2272, Highway Trailer Co.

TRAILER, MACHINE SHOP, PNEUMATIC OR TRACK LAYING



PNEUMATIC MACHINE SHOP TRAILER

TRAILER, MACHINE SHOP, PNEUMATIC OR TRACK LAYING

THE Machine Shop Trailer is a mobile self-contained field automotive repair shop with all small power-driven and hand tools necessary to make major repairs to automotive equipment in the field. It is mounted either on pneumatic tires or track-laying wheels. The pneumatic trailer is equipped with electric brakes and lunette for towing behind an Army 2½-ton 6 x 6 truck. The track-laying trailer is a standard Athey Model BT-301-4 wagon.

The following major machine shop tools are furnished with the machine shop trailer:

1. 5 KW electric generator furnishing AC 60-cycle single-phase current.
2. 5.25 cubic feet air cooled compressor.
3. No. 1136 WBMQ Sheldon 11-inch lathe with ½-hp, 115-volt AC motor milling head.
4. ¼-hp, 6-inch U.S. utility bench grinder.
5. Barret B-25 brake drum lathe.
6. Barret B-51 reliner and grinder.
7. Press, arbor, bench motor service, 5-ton with 5 extra arbors.
8. Black and Decker No. 282 5/8-inch super-service wet grinding refacer with 2 collectors. Universal motor with A-15-H carborundum grinding wheel.
9. Electric portable heavy-duty drill.
10. Two extension lights, portable, with 25 feet of rubber-covered cord.

TRAILER, MACHINE SHOP, PNEUMATIC OR TRACK LAYING (CONT'D)

TRAILER, MACHINE SHOP, PNEUMATIC OR TRACK LAYING

11. Metal benches with drawers for holding small tools.
12. Model S-31 10-ton Blackhawk power unit with one Z-328 portable press.
13. Owatoma Model P.E. 12 wheel gear puller set.
14. Model No. 21 Aro tool-room combination pneumatic drill and grinder kit.
15. Special set of Hall automotive repair tools.
16. Marquette 100-ampere welder.
17. Metalizing spray.

These trailers are for advanced bases only.

Established bases should not request these units since they are intended primarily for field operation.

MANUFACTURER: Boyertown Auto Body Works, Boyertown, Pa.

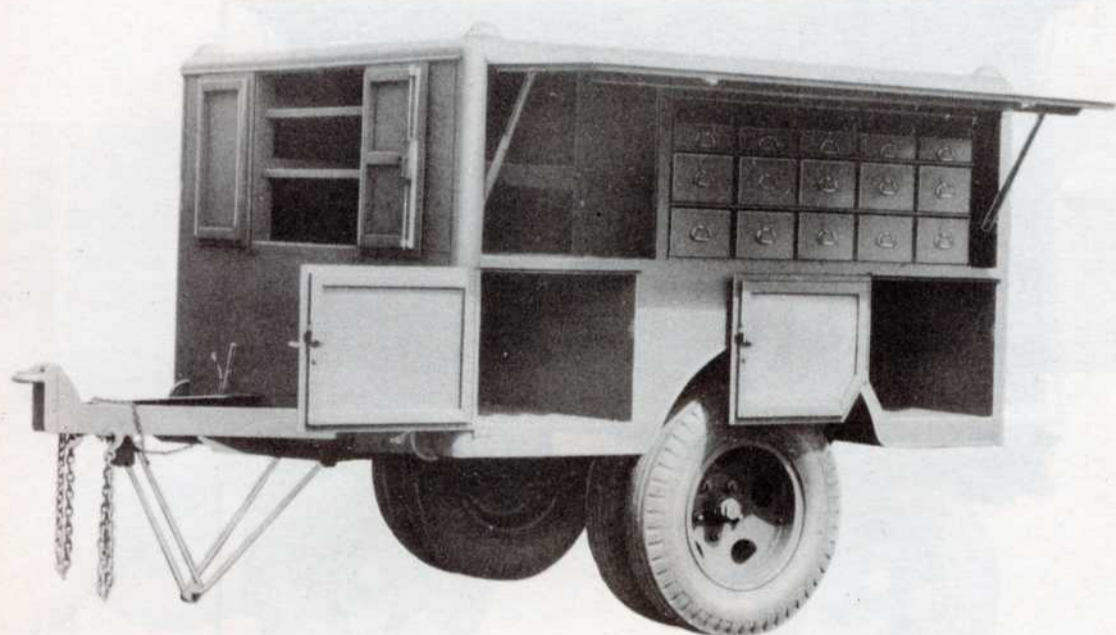
DIMENSIONS:

Pneumatic, approx. 15.3 x 8.0 x 9.3 feet.
Track-Laying, approx. 25.5 x 8.0 x 10.3 feet.

WEIGHT:

Pneumatic, approx. 12,000 pounds.
Track-Laying, approx. 16,000 pounds.

TRAILER, SPARE PARTS



TRAILER, SPARE PARTS

THE Spare Parts Trailer is a 2-wheel trailer equipped with front-mounted lunette, pneumatic tires, and with a special body designed for the transportation and storage of spare parts for automotive equipment. These trailers will be used with the mobile machine shops for advanced base activities having a large number of Ordnance-issued automotive units.

The trailers will be shipped to each major advanced base, and stocked with an initial stock of replacement parts for all types of

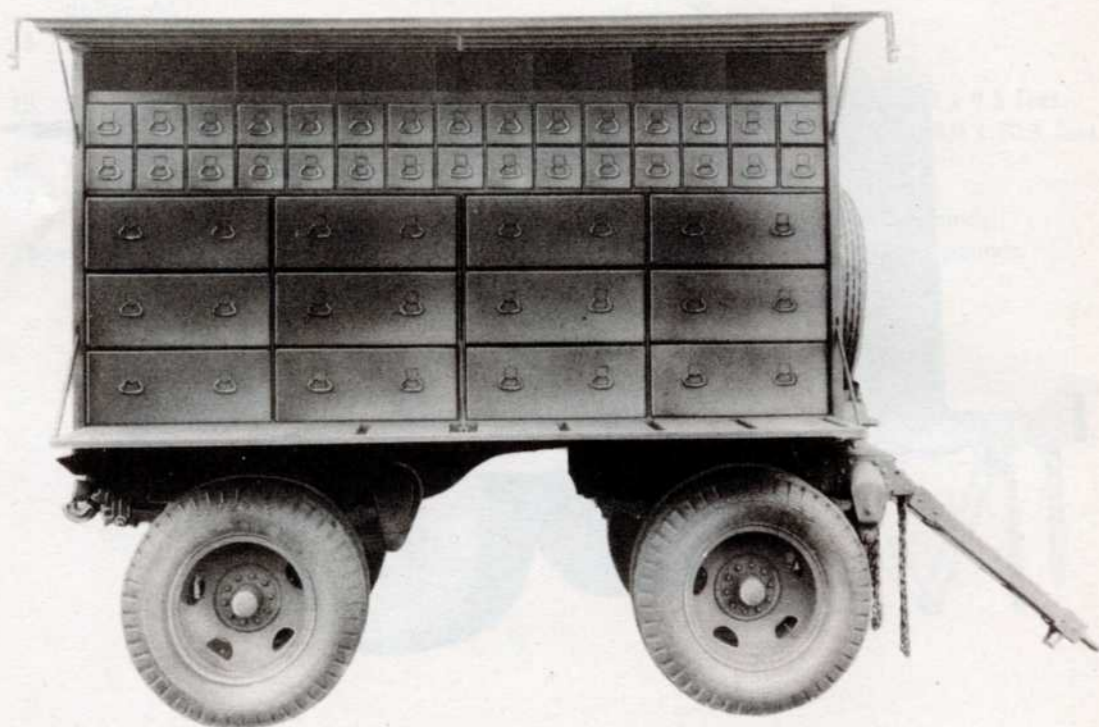
mobile equipment supplied by the Bureau of Ordnance. Order parts from those activities designated as spare parts storage depots, for the type equipment for which parts are required.

MANUFACTURER: Baker-Raulang Co., Cleveland, Ohio.

DIMENSIONS: approx. 12.8 x 7.5 x 7.2 feet.

WEIGHT: approx. 3,500 pounds.

TRAILER, FOUR WHEEL STOCK ROOM



TRAILER, FOUR WHEEL STOCK ROOM

THE Four Wheel Stock Room Trailer is equipped with 4 dual wheels, pneumatic tires, and a special body for the transportation and storage of major spare parts for automotive equipment. These trailers will be used with the mobile machine shops for advance base activities having a large number of Ordnance-issued automotive units.

The trailers will be shipped to each major advance base and stocked with an initial supply of replacement parts for all types of mo-

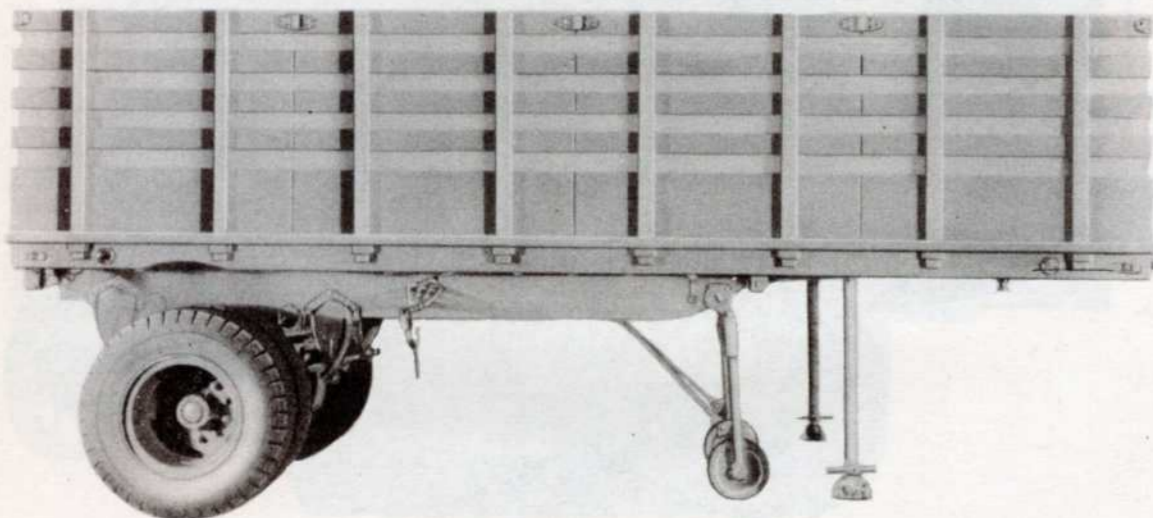
bile equipment supplied by the Bureau of Ordnance. Order additional parts from those activities designated as spare parts storage depots for the type of equipment for which parts are required.

MANUFACTURER: Baker-Raulang Co., Cleveland, Ohio.

DIMENSIONS: approx. 10.0 x 7.0 x 5.0 feet.

WEIGHT: approx. 4,540 pounds.

TRAILER, STAKE AND RACK BODY, MODEL SKD-2249



TRAILER, STAKE AND RACK BODY, MODEL SKD-2249

THE Stake and Rack Body Trailer is a 2-wheel semi-trailer used for transporting bulk ammunition or equipment. The dual pneumatic-tired, rear wheels are equipped with air brakes which operate simultaneously with the tractor brakes. Two legs mounted on steel wheels support the front of the trailer when it is not attached to the tractor. When trailer and tractor are attached, the legs are retracted by a hand crank.

Order spare parts from the manufacturer.

MANUFACTURER: Highway Trailer Co.,
Edgerton, Wis.

DIMENSIONS: approx. 18.5 x 8.0 x 8.0 feet.

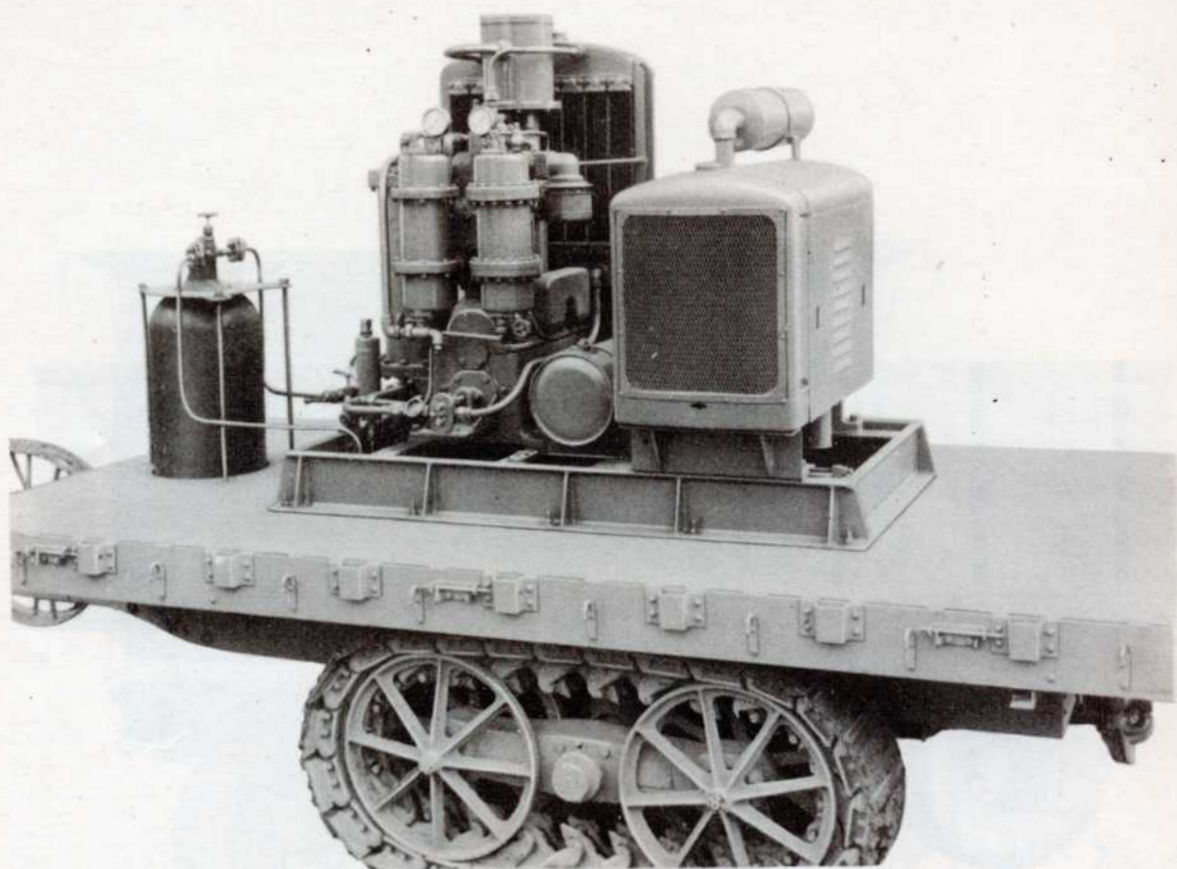
WEIGHT: approx. 7,160 pounds.

CAPACITY: approx. 10 tons.

TIRES: 10.00 x 20.

PUBLICATION: Parts List and Maintenance
Manual Model SKD-2249, Highway Trailer Co.

TRAILER, TORPEDO COMPRESSOR, TRACK LAYING TYPE



TRAILER, TORPEDO COMPRESSOR, TRACK LAYING TYPE

THE Track Laying Torpedo Compressor Trailer consists of an Athey platform wagon equipped with a complete air compressor plant. The basic platform wagon now supplied is Athey Model BT-301-4. To the platform wagon are added a rear frame extension, side and end racks consisting of side boards and oak stakes, tarpaulin supports on the stakes, a tarpaulin cover or canopy, and a gasoline-driven air compressor with a capacity of 20 cubic feet per hour.

A lunette on the front of the platform wagon frame is used for coupling. At the rear is a Pintle Hitch, Army Type M-5.

A drawbar jack on Platform Wagon Model BT-301-4 supports the front of the frame to the desired height.

Order spare parts for the trailer from the

Naval Ammunition Depot, Crane, Indiana. Order spare parts for the compressor from the Naval Torpedo Station, Newport, Rhode Island, Naval Ordnance Plant, Pocatello, Idaho, or the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Athey Truss Wheel Co., Chicago, Ill.

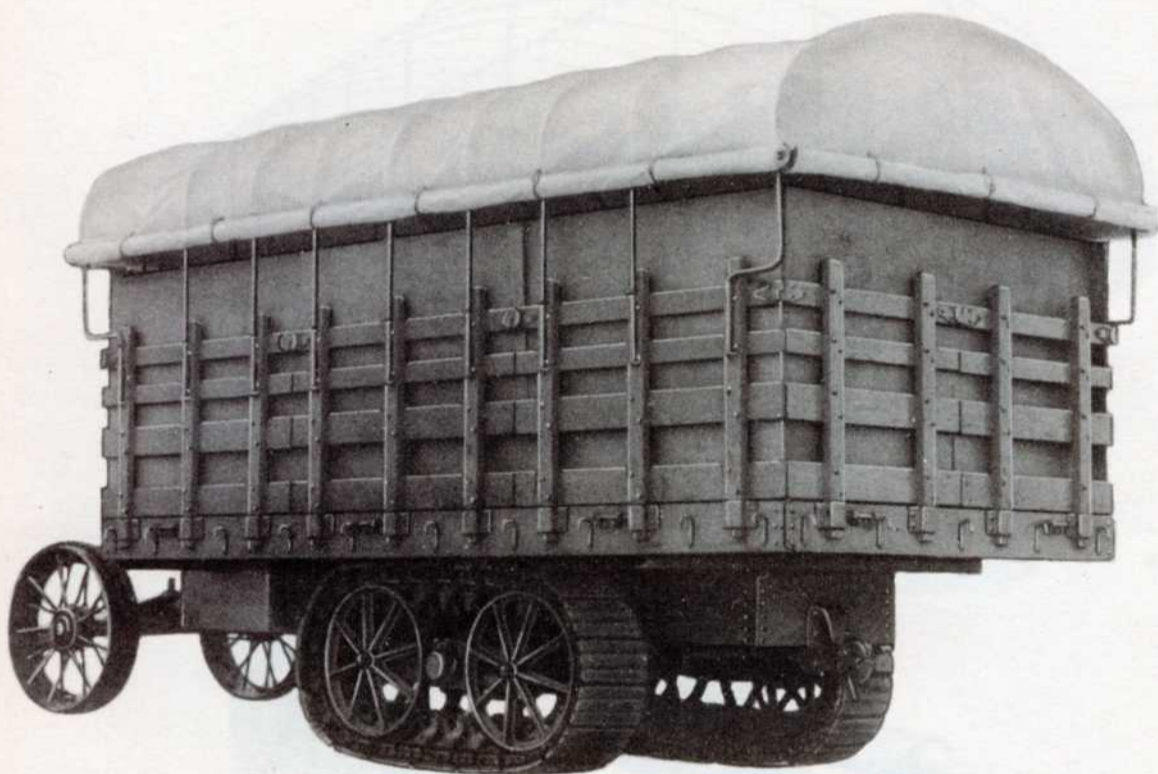
DIMENSIONS: approx. 21.5 x 8.0 x 10.3 feet.
Platform (only), approx. 7.5 x 15.0 feet.

WEIGHT: approx. 16,000 pounds with 30 cubic foot compressor.

TRACK LAYING WHEELS: Model 7B.

PUBLICATION: Operating, Maintenance Manual and Parts Catalog No. 1, Athey Truss Wheel Co.

TRAILER, TORPEDO WORKSHOP, TRACK LAYING TYPE



TRAILER, TORPEDO WORKSHOP, TRACK LAYING TYPE

The Track Laying Torpedo Workshop Trailer consists of an Athey platform wagon equipped with lockers, work benches, and all tools needed for service and adjustment of torpedoes. The basic platform wagon now supplied is Athey Model BT-301-4.

To the platform wagon are added a rear frame extension, side and end racks consisting of side boards and oak stakes, tarpaulin supports on the stakes, a tarpaulin cover or canopy, and lockers, winches and other equipment.

A lunette on the front of the platform wagon frame is used for coupling. At the rear is a Pintle Hitch, Army Type M-5.

The drawbar jack on platform wagon Model BT-301-4 supports the front of the frame at any desired height.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Athey Truss Wheel Co., Chicago, Ill.

DIMENSIONS: approx. 21.5 x 8.0 x 10.3 feet.

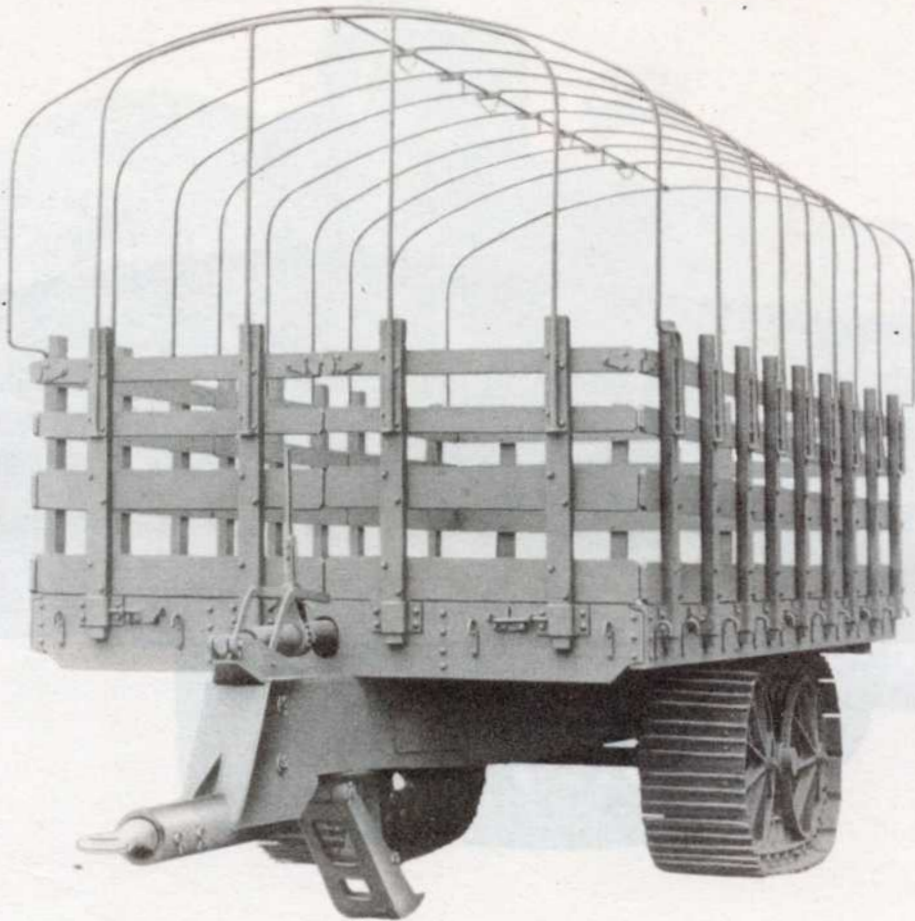
Platform (only), approx. 7.5 x 15.0 feet.

WEIGHT: approx. 10,150 pounds.

TRACK LAYING WHEELS: Model 7B.

PUBLICATION: Operating, Maintenance Manual and Parts Catalog No. 1, Athey Truss Wheel Co.

TRAILER, TRACK LAYING, MODEL BT-301-4



TRAILER, TRACK LAYING, MODEL BT-301-4

THE Track Laying Trailer Model BT-301-4 is a platform freight wagon used primarily to carry boxed torpedoes and consumable supplies. The trailer has a rear frame extension, wooden side and end racks consisting of side boards and oak stakes, and tarpaulin supports on the stakes for use when a canopy or cover is needed. The same basic platform wagon can be equipped as a torpedo compressor trailer or as a torpedo workshop trailer. When equipped with cradles, it may also be used as a bomb and torpedo carrying trailer.

A lunette at the front of the platform wagon frame is used for coupling. At the rear is a Pintle Hitch, Army Type M-5.

A drawbar jack, which supports the fronts of the frame at any height, keeps the trailer

from jackknifing as it is towed downhill in train.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Athey Truss Wheel Co., Chicago, Ill.

DIMENSIONS: approx. 21.5 x 8.0 x 10.3 feet.
Platform (only), approx. 7.5 x 15.0 feet.

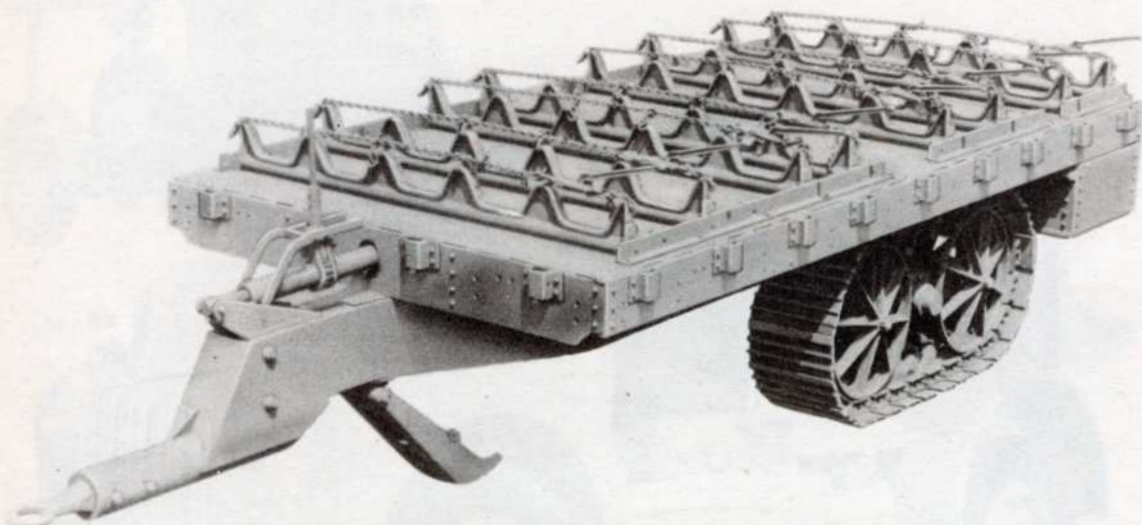
WEIGHT: approx. 9,550 pounds.

TRACK LAYING WHEELS: Model 7B.

CAPACITY: approx. 6 tons.

PUBLICATION: Operating, Maintenance Manual and Parts Catalog No. 1, Athey Truss Wheel Co.

TRAILER, TRACK LAYING, MODELS BT-301-7 AND BT-301-8



TRAILER, TRACK LAYING, MODELS BT-301-7 AND BT-301-8

THE Track Laying Trailer Model BT-301-8 is a platform freight wagon equipped with 3-place and 5-place bomb cradles for carrying bombs or torpedoes over rough terrain. Carrying capacity is 20 bombs of any size up to 1000 pounds; 9 bombs of the 2000 pound size; or 3 torpedoes of the Mark 13 type. A chain and eyebolt assembly, with load binder and hook at one end, is attached to each cradle. The chain, which passes over the bombs or torpedoes, holds them in place during trans-

portation. Cradles not in use are stowed in the fuze box at the rear end of the platform.

A lunette on the front of the platform wagon frame is used for coupling. At the rear is a Pintle Hitch, Army Type M-5.

Model BT-301-7 has a front bogie which supports the front of the frame at the desired height. A drawbar jack replaces the front bogie on Model BT-301-8.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Athey Truss Wheel Co., Chicago, Ill.

DIMENSIONS:

Model BT-301-7

Overall, approx. 24.0 x 8.0 x 4.8 feet
Platform, approx. 7.5 x 15.0 feet.

Model BT-301-8

approx. 24.0 x 8.0 x 4.8 feet.
approx. 7.5 x 15.0 feet.

WEIGHT: approx. 10,400 pounds.

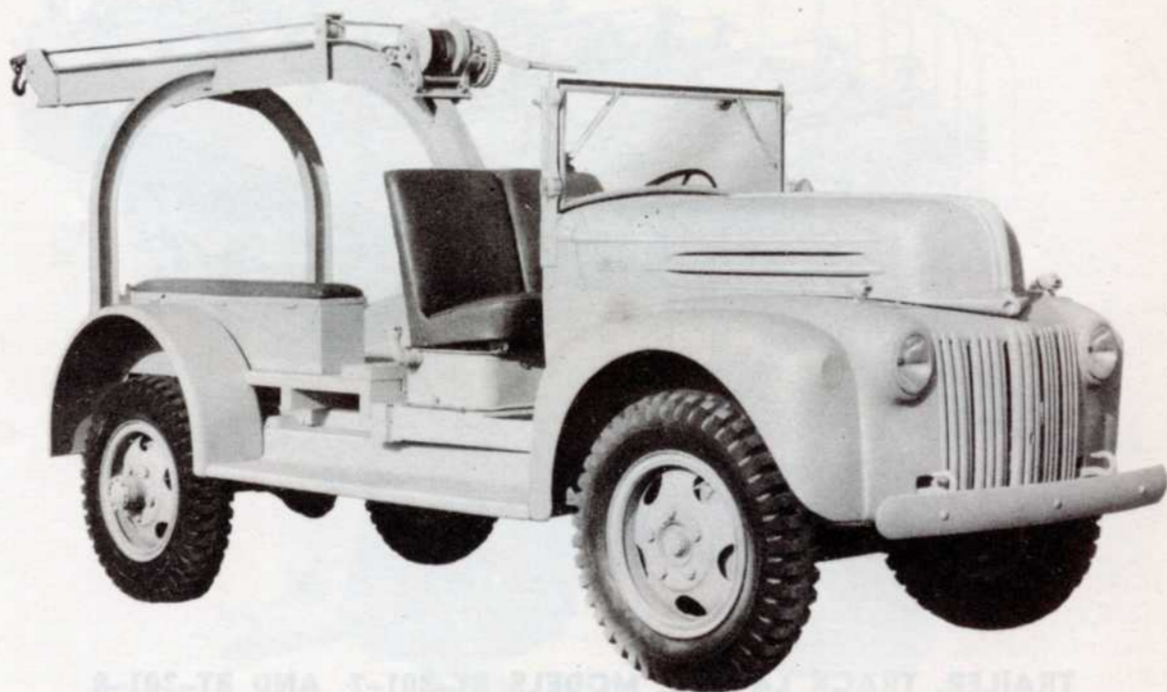
approx. 9,800 pounds.

TRACK LAYING WHEELS: Model 7B.

Model 7B.

PUBLICATION: Operating, Maintenance Manual and Parts Catalog No. 1, Athey Truss Wheel Co.

TRUCK, BOMB SERVICE, MARK 1



TRUCK, BOMB SERVICE, MARK 1

THE Bomb Service Truck Mark 1 is a standard commercial 1¼-ton, 2-wheel drive Ford truck equipped to load or tow bomb trailers.

For towing, a Pintle Hook Type T-100 is attached to the rear cross-member of the truck. Warner electric brake control equipment on the truck gives the operator control of the brakes on the towed bomb trailers.

A winch and monorail beam are used for loading. The beam has a 60-inch overhang from the rear of the truck, and is approximately 72 inches above the ground. The

winch, mounted on top of the forward end of the beam, has a capacity of 2000 pounds.

Order spare parts from the Naval Ammunition Depot at Crane, Indiana, or Hawthorne, Nevada.

MANUFACTURER: Ford Motor Co., Dearborn, Mich.

DIMENSIONS: approx. 18.5 x 7.1 x 6.0 feet.

WEIGHT: approx. 5,080 pounds.

TIRES: 7.50 x 20.

TRUCK, BOMB SERVICE, MARK 2 AND MOD.



MARK 2



MARK 2 MOD 1

TRUCK, BOMB SERVICE, MARK 2

THE Bomb Service Truck Mark 2, a 1½-ton 4 x 4 Ford truck, is used to load or tow bomb trailers. For towing, a Pintle Hook Type T-100 is attached to the rear cross-member of the truck. Warner electric brake control equipment on the truck gives the operator control of the brakes on the towed bomb trailers.

For loading, the truck has a movable chain hoist, a fixed overhead winch, and a monorail beam. The chain hoist is manually-operated and has a capacity of 1½ tons. The winch, mounted on top of the forward end of the beam, has a capacity of 4000 pounds.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana. For emergency shipment, order direct from the Naval Supply Depot at Clearfield, Utah, which is stocking limited parts.

MANUFACTURER: Ford Motor Co., Dearborn, Mich.

DIMENSIONS: approx. 19.7 x 6.7 x 6.0 feet.

WEIGHT: approx. 6,200 pounds.

TIRES: 7.50 x 20.

PUBLICATION: Maintenance Manual, Bomb Service Truck, Mark 2, Ford Motor Co.

TRUCK, BOMB SERVICE, MARK 2, MOD. 1

THE Bomb Service Truck Mark 2, Mod. 1 is similar to the Mark 2 except that Mark 2,

MANUFACTURER: Ford Motor Co., Dearborn, Mich.

DIMENSIONS: approx. 20.8 x 6.7 x 6.0 feet.

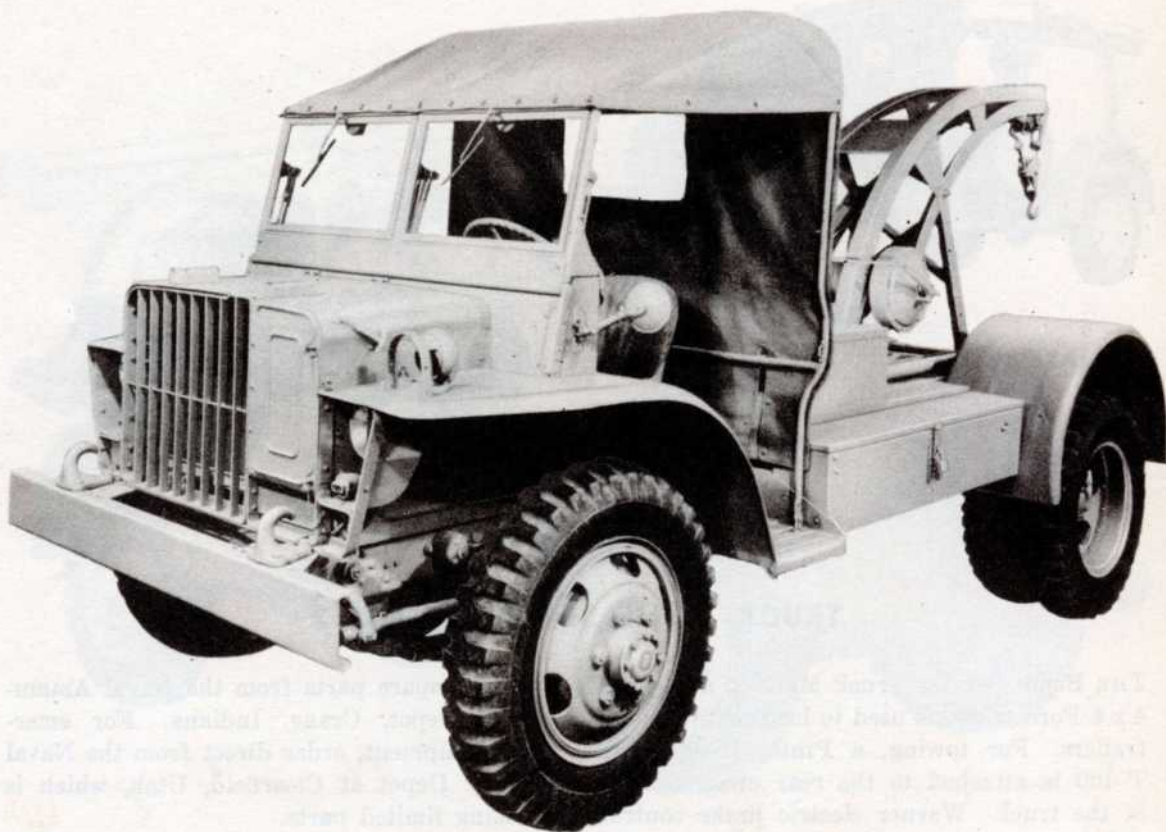
Mod. 1 has dual rear wheels and a power-driven, front-mounted winch.

WEIGHT: approx. 7,500 pounds.

TIRES: 7.50 x 20.

PUBLICATION: Maintenance Manual, Bomb Service Truck, Mark 2, Mod. 1, Ford Motor Co.

TRUCK, WRECKER, MARK 1



TRUCK, WRECKER, MARK 1

THE Wrecker Truck Mark 1 is a 4-wheel Ford Truck used to tow wrecked vehicles or right upset bomb trailers. The truck is powered with a 6-cylinder gasoline engine and has 8 speeds forward and 2 reverse. The chassis is the same as that of the Bomb Service Truck Mark 2, Mod. 1. Two towing hooks are attached to the front frame.

A 1½-ton Marquette Power Crane Model 141 is rigidly fixed to the truck and cannot be raised or lowered. The crane winch is operated by a power take-off unit bolted to the transmission.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Ford Motor Co. Dearborn, Mich.

DIMENSIONS: approx. 17.5 x 7.6 x 7.3 feet.

WEIGHT: approx. 6,000 pounds.

TIRES: 7.50 x 20.

PUBLICATION: Maintenance Manual, Wrecker Truck Mark 1, Ford Motor Co.

TRUCK, CARGO, MARK 1



TRUCK, CARGO, MARK 1, 1½-TON

THE Cargo Truck Mark 1, a 1½-ton, 4-wheel drive Ford truck, is used to transport ammunition components or to tow trailers. The chassis is the same as the chassis of Bomb Service Truck Mark 2, Mod. 1.

The truck is powered by a 6-cylinder engine and has 8 speeds forward and 2 reverse. An electric brake control is supplied for use with trailers with electric brakes.

A front-mounted, power-driven winch, controlled from the cab, has a capacity of 2 tons. The truck body is equipped with bucket seats. A collapsible canvas canopy covers the body and cab. A rear pintle hook is used for towing.

Order spare parts from the Naval Ammunition Depot, Crane, Indiana. Consult the maintenance manual and spare parts list furnished with each truck, as each has special features not common to standard commercial trucks.

MANUFACTURER: Ford Motor Co., Dearborn, Mich.

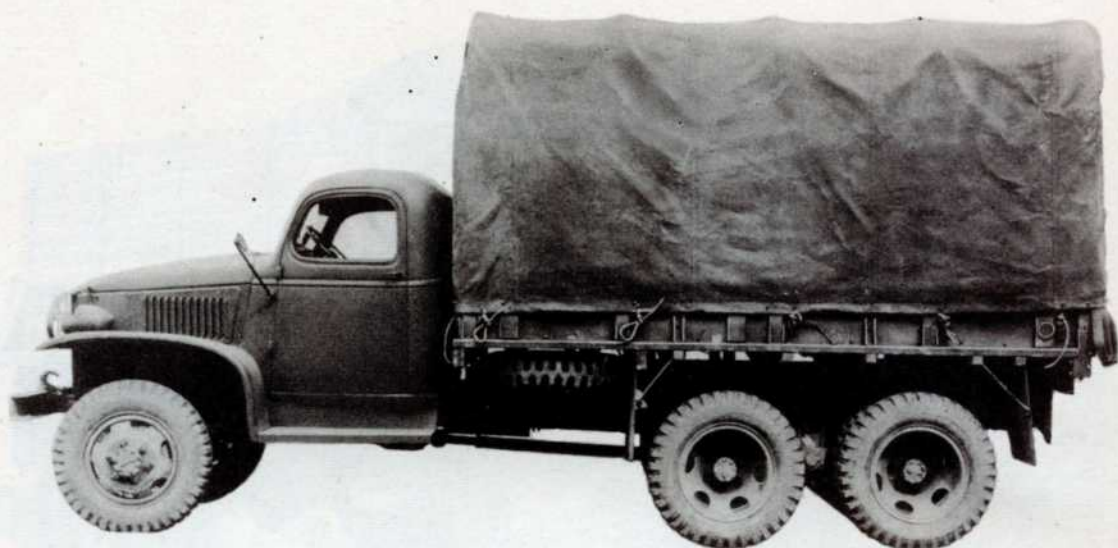
DIMENSIONS: approx. 15.0 x 8.0 x 7.0 feet.

WEIGHT: approx. 5,500 pounds.

TIRES: 7.50 x 20.

PUBLICATION: Maintenance Manual, Cargo Truck Mark 1, Ford Motor Co.

TRUCK, CARGO, 2½-TON, 6x6



TRUCK, CARGO, 2½-TON, 6 x 6

THE 2½-ton, 6 x 6 Cargo Truck is the standard Army vehicle for general cargo handling. The truck is powered by a General Motors Corporation Model 270, 6-cylinder engine with 269.5 cubic inch displacement. Standard equipment includes a transmission with 4 forward speeds and one reverse; dual wheels on both forward and aft rear axles; a rear mounted pintle hook and a 40-gallon gasoline tank.

This truck is manufactured in 2 wheel base sizes, 145 inches and 164 inches. Optional equipment on both models is a power-driven front mounted winch. This winch has a capacity of 10,000 pounds.

Spare parts are available from the Naval Ammunition Depot, Crane, Indiana. When ordering parts for these vehicles, submit model number and chassis serial number. Additional data pertaining to this truck are given below:

TRUCK WITH 164-INCH WHEEL BASE

DIMENSIONS (Shipping unboxed): approx. 22.0 x 7.3 x 9.2 feet.

CAPACITY: approx. 2½ tons.

TIRES: 7.50 x 20.

WEIGHT:

Without winch, approx. 10,050 pounds.

With winch, approx. 11,000 pounds.

TRUCK WITH 145-INCH WHEEL BASE

DIMENSIONS (Shipping unboxed): approx. 20.4 x 7.3 x 9.2 feet.

CAPACITY: approx. 2½ tons.

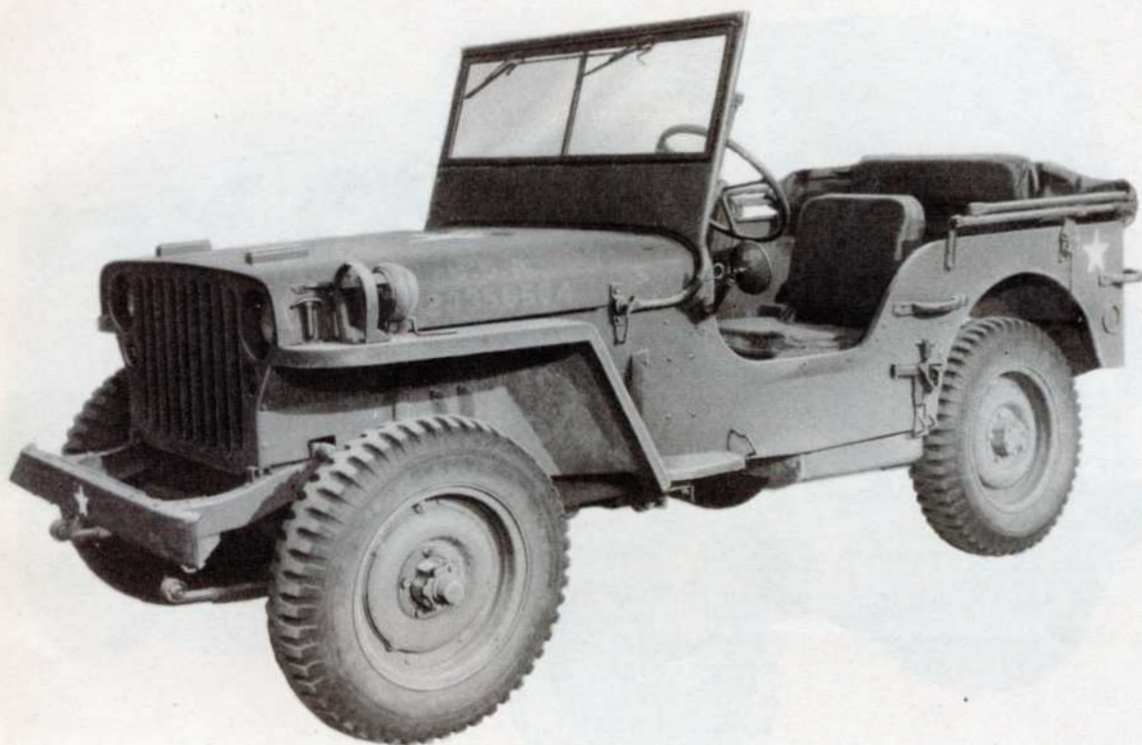
TIRES: 7.50 x 20.

WEIGHT:

Without winch, approx. 10,100 pounds.

With winch, approx. 11,000 pounds.

TRUCK, (JEEP) 1/4-TON, 4x4



TRUCK (JEEP) 1/4-TON, 4 x 4

THIS Truck is the standard Army 1/4-ton, 4 x 4 reconnaissance car. The truck has a 4-wheel drive with 4 speeds forward and one reverse. It is powered by a 4-cylinder engine. The detachable canvas top may be folded and stowed under the right front seat. For towing, a pintle hook with a safety catch is attached to the rear frame cross-member. Extra equipment consists of an axe, shovel, and a set of service tools.

Order spare parts from the Naval Ammunition Depot, Crane, Ind.

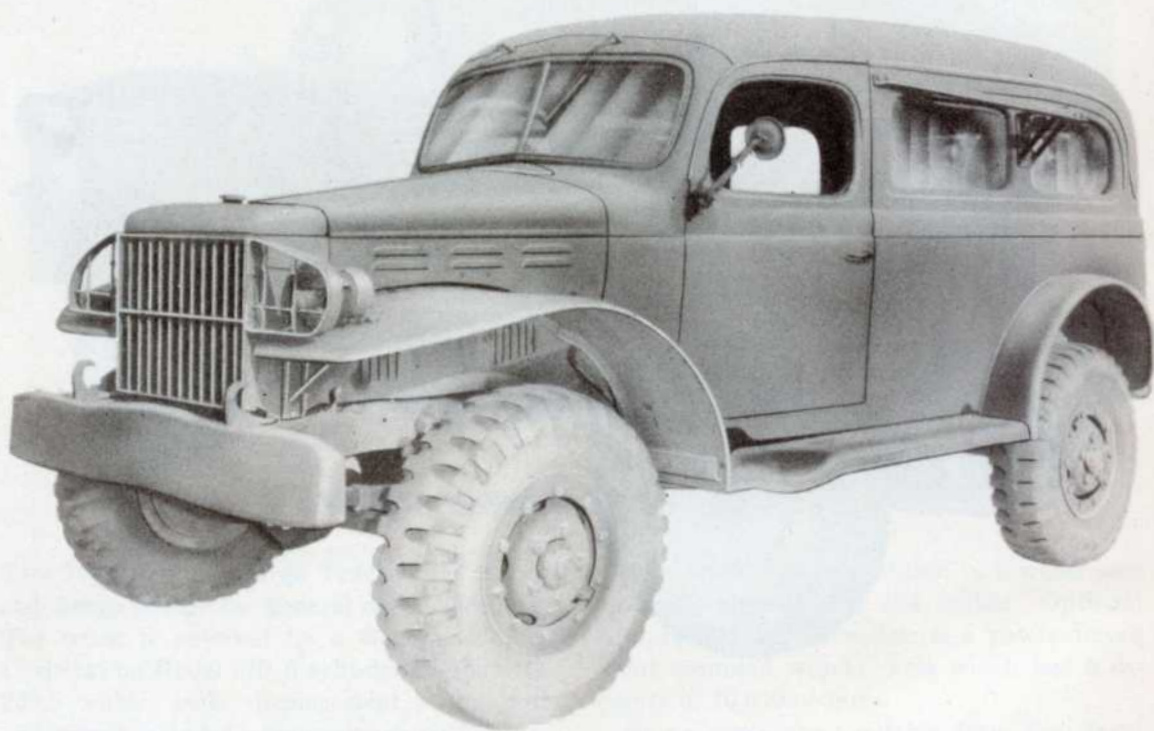
DIMENSIONS: approx. 11.0 x 5.2 x 5.7 feet.

WEIGHT: approx. 2,125 pounds.

TIRES: 6.00 x 16.

PUBLICATION: Service Manual, Truck, 1/4-ton, 4 x 4.

TRUCK, CARRYALL, 3/4-TON 4x4



TRUCK, CARRYALL, 3/4-TON 4 x 4

THIS unit is an Army 3/4-ton 4 x 4 Truck equipped with a carryall body and used to transport light cargo or personnel. The truck is powered with a Dodge T-214, 6-cylinder

engine and is equipped with hydraulic brakes.

Spare parts can be obtained from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Dodge Bros. Corp. Div. of Chrysler Corp.

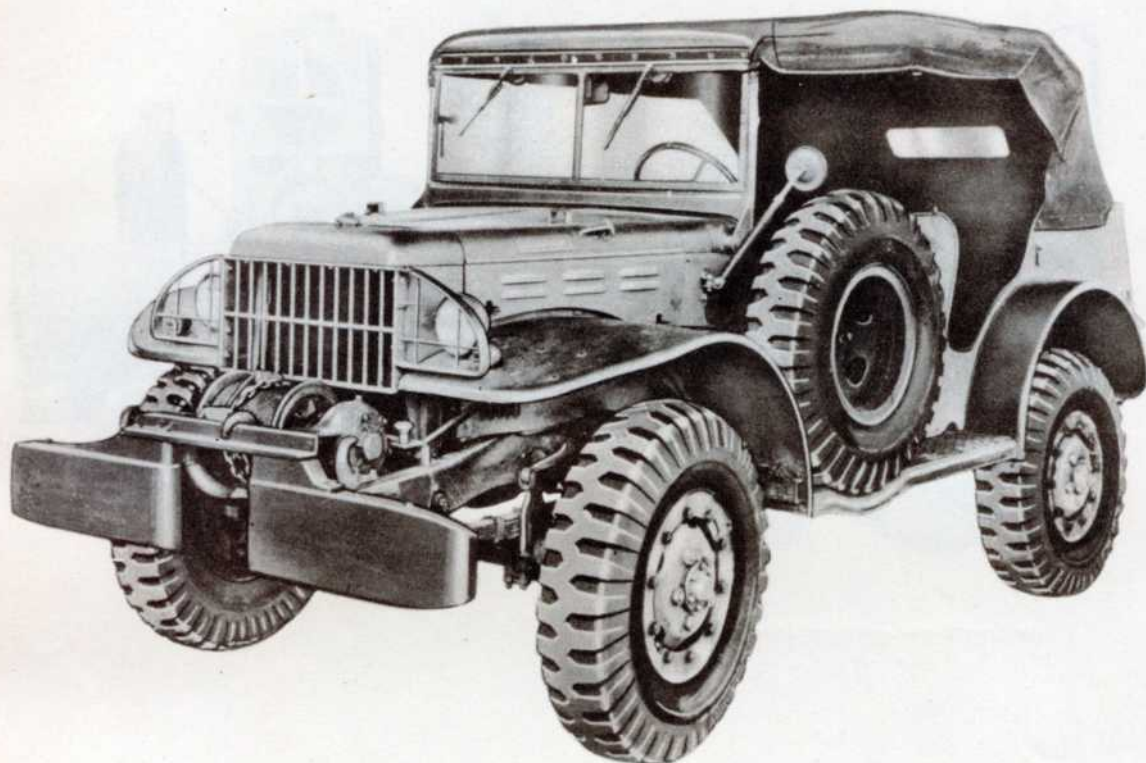
TIRES: 9.00 x 16.

DIMENSIONS: approx. 15.5 x 7.7 x 6.6 feet.

PUBLICATIONS: TM 9-808, 9-1808A, B; 9-2800, SNL G-502.

WEIGHT: approx. 5,750 pounds.

TRUCK, COMMAND $\frac{3}{4}$ -TON 4x4



TRUCK, COMMAND $\frac{3}{4}$ -TON 4 x 4

THIS unit is a standard Army $\frac{3}{4}$ -ton 4 x 4 truck equipped with a command reconnaissance body. The unit is used for general inspection purposes and at locations where transportation of a few persons at a time is necessary. The truck is powered with a Dodge

T-214, 6-cylinder engine and is equipped with hydraulic brakes. A power-operated winch having a capacity of 5,000 pounds is located on the front of the truck.

Spare parts may be obtained from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Dodge Bros. Corp. Div. of Chrysler Corp.

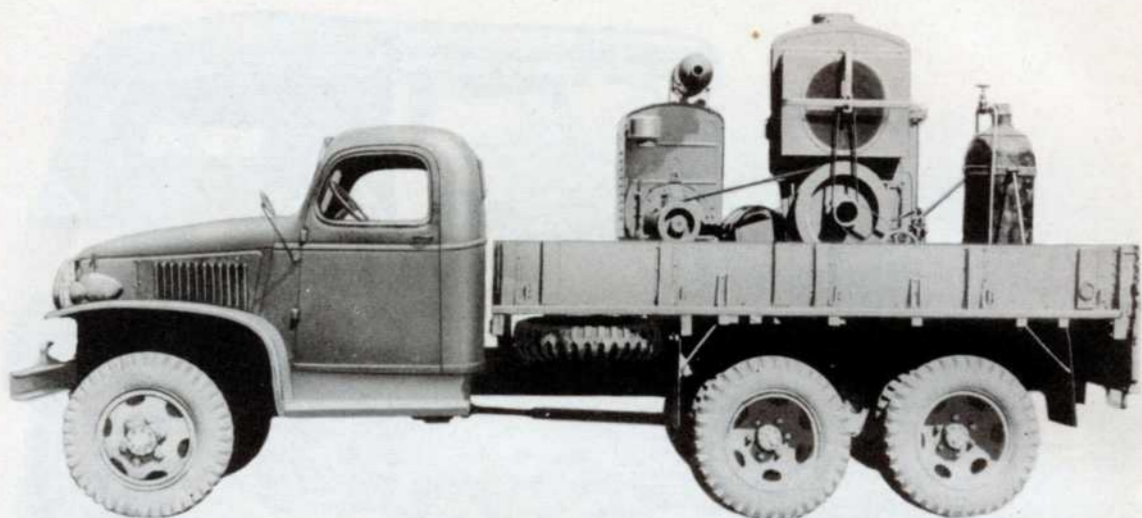
TIRES: 9.00 x 16.

DIMENSIONS: approx. 14.6 x 6.8 x 6.3 feet.

PUBLICATIONS: TM 9-808; 9-1808A, B; 9-2900.

WEIGHT: approx. 5,675 pounds.

TRUCK, TORPEDO COMPRESSOR, PNEUMATIC



TRUCK, TORPEDO COMPRESSOR, PNEUMATIC

THE Pneumatic Torpedo Compressor Truck is a standard Army 2½-ton 6 x 6 cargo truck mounting a 7.5 cubic foot or 20 cubic foot air compressor with air bottle.

The pneumatic-mounted torpedo truck is one of the units of the pneumatic-mounted torpedo field unit. It is used for the servicing of torpedoes at advanced bases.

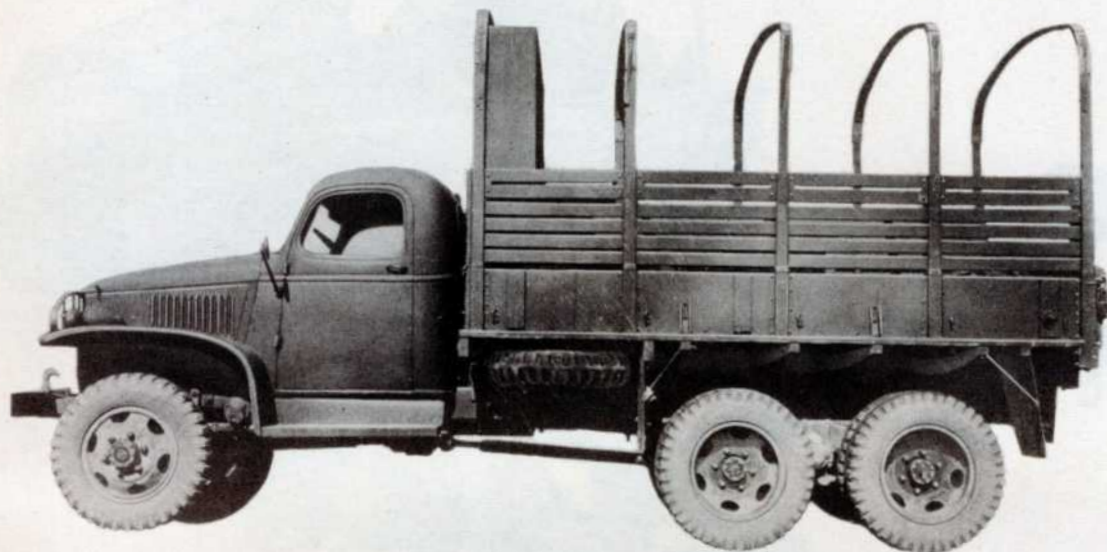
Order spare parts for this truck from the Naval Ammunition Depot, Crane, Indiana. Order spare parts for the compressor from the Naval Torpedo Station, Newport, R.I.; the Naval Ordnance Plant, Pocatello, Idaho; or the Naval Ammunition Depot, Crane, Indiana.

When parts are ordered for the truck, the USN number of the truck, the manufacturer's name and the part number should be furnished. When ordering parts for the compressor, the manufacturer's name and part number and the model of the compressor should be supplied. Complete shipping information should be furnished to the activity from which the parts are requested.

DIMENSIONS: approx. 10.0 x 8.0 x 20.0 feet.

WEIGHT: approx. 18,000 pounds for 7.5 cubic foot-compressor, 20,000 pounds for 20 cubic foot-compressor.

TRUCK, TORPEDO WORKSHOP, PNEUMATIC



TRUCK, TORPEDO WORKSHOP, PNEUMATIC

THE Pneumatic Torpedo Workshop Truck is a standard Army 2½-ton 6 x 6 truck equipped with a front-mounted winch and enclosed cab. The truck body contains the necessary lockers and work benches as well as all tools required for ready adjustment of torpedoes. This unit is part of pneumatic field units used for the ready servicing of torpedoes in the field.

Order spare parts for the truck from the Naval Ammunition Depot, Crane, Indiana.

When ordering spare parts, USN registration number of the truck, manufacturer's name and part number, and all necessary shipping information should be supplied direct to the depot. Obtain the torpedo tools from the standard sources set up for this type of equipment.

DIMENSIONS: approx. 10.0 x 8.0 x 20.0 feet.

WEIGHT: approx. 14,000 pounds.

TRUCK, TORPEDO CARRYING CRANE



TRUCK, TORPEDO CARRYING CRANE

THE Torpedo Carrying Crane Truck is a self-propelled power-crane equipped to carry 2 torpedoes in cradles placed along either side of the frame. The crane boom, which has a 180-degree swing, can place a torpedo in either cradle. The operator can pick up, load, transport and unload 2 torpedoes of any size up to 4000 pounds each.

Mounted over the rear steerable axle of the truck is a Ford V-8 engine; the crane is mounted over the front wheels. Wheels are pneumatic-tired and the truck has 4 speeds forward and one reverse. Outriggers are used when crane loads exceed the normal tipping

capacity of the chassis. Tow hooks are provided at the front and rear.

Spare parts are issued with each truck. If more spare parts are needed, order from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: The Hanson Clutch & Machinery Co., Tiffin, Ohio.

DIMENSIONS: approx. 21.7 x 7.7 x 7.5 feet.

WEIGHT: approx. 10,850 pounds.

TIRES: 7.50 x 15.

PUBLICATION: Manufacturer's Instruction Book and Parts list.



TRUCK, CRANE, ELECTRIC MAGAZINE

THE Electric Magazine Crane Truck is an electric industrial truck equipped with a 60-inch boom capable of swinging through an arc of 60 degrees on each side of the center line of the truck, with a lifting capacity of 2000 pounds. The truck is available with overall lifting heights from the bottom of the crane hook of 94 inches, 100 inches, and 118 inches. It is powered by a 16-cell, 450-ampere hour, lead-acid battery.

The truck is used for handling bombs in high explosive magazines. It is transported from battery-charging houses to magazines by a low-bed machinery trailer. Batteries may be changed in the field by the movable chain fall on the Bomb Service Truck Mark 2 using the bomb lifting hooks to lift the battery from

the electric truck.

These trucks are equipped with Class 2 spark-proofing for use in hazardous locations.

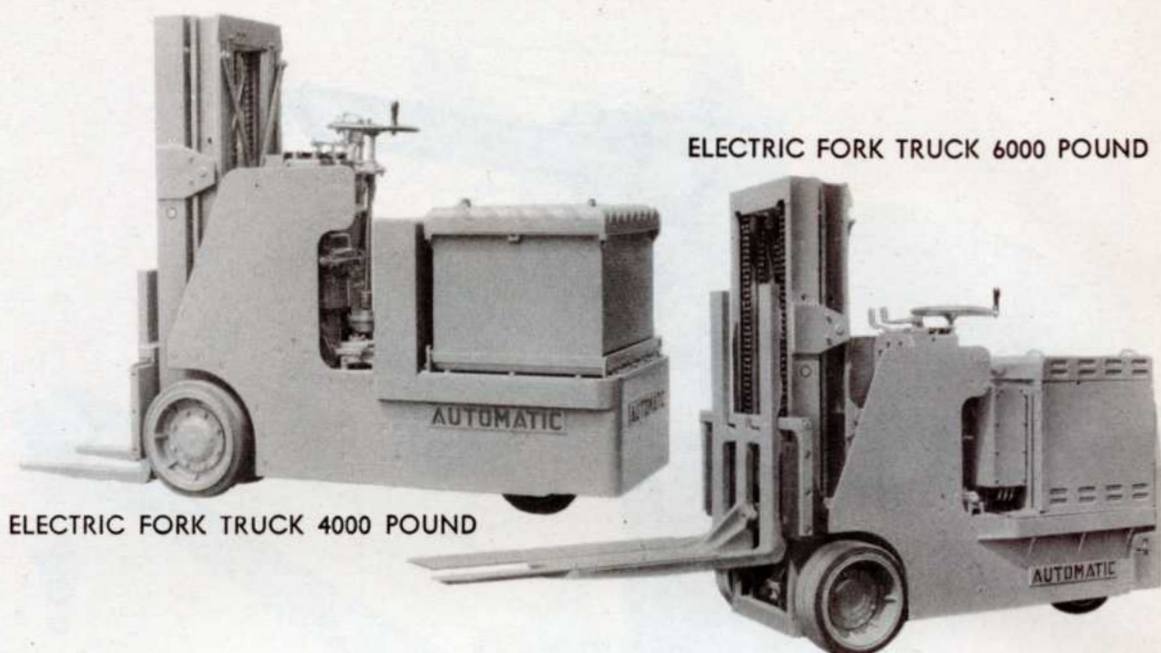
Order spare parts from the Naval Ammunition Depot, Crane, Indiana. Data on the required equipment should be supplied direct to the Naval Ammunition Depot with an information copy to the Bureau of Ordnance.

MANUFACTURERS: The Yale & Towne Manufacturing Co., Philadelphia, Pa.; Automatic Transportation Co., Chicago, Ill.; Elwell-Parker Electric Co., Cleveland, Ohio; Baker-Raulang Co., Cleveland, Ohio.

DIMENSIONS: approx. 12.0 x 3.8 x 9.9 feet.

WEIGHT: approx. 7,930 pounds.

TRUCK, FORK, ELECTRIC TELESCOPIC FORKS, 4,000 AND 6,000 POUNDS



TRUCK, FORK, ELECTRIC TELESCOPIC FORKS, 4000 POUNDS

THE 4000-pound Electric Telescopic Fork Truck will lift material to a height of 120 inches and is equipped with a 450-ampere hour, 16-cell, 19-plate lead-acid battery. The truck is spark-proofed for use in semi-hazardous locations, in accordance with Bureau of Ordnance instructions on mechanized handling of ammunition, and has forks for handling 48- x 48-inch pallets. A special set of forks for handling bombs, a set for handling boxed torpedoes, and a crane attachment for handling Torpedoes Mark 14 or the flasks of Torpedoes Mark 14 or Mark 15 are available. The truck handles inert components, boxed torpedoes, or ammunition containing cast TNT.

When requesting this truck from the Bureau of Ordnance, give information on its intended use and the type of attachments desired. Order spare parts from the Naval Ammunition Depot, Crane, Indiana. When requesting parts, a duplicate information copy should be sent to the Bureau of Ordnance.

A new truck will soon be available that will be shorter in length than the present one.

MANUFACTURER: Automatic Transportation Co., Chicago, Ill.

DIMENSIONS: approx. 3.7 x 6.8 x 11.8 feet.

WEIGHT: approx. 9,680 pounds.

TRUCK, FORK, ELECTRIC TELESCOPIC FORKS, 6,000 POUNDS

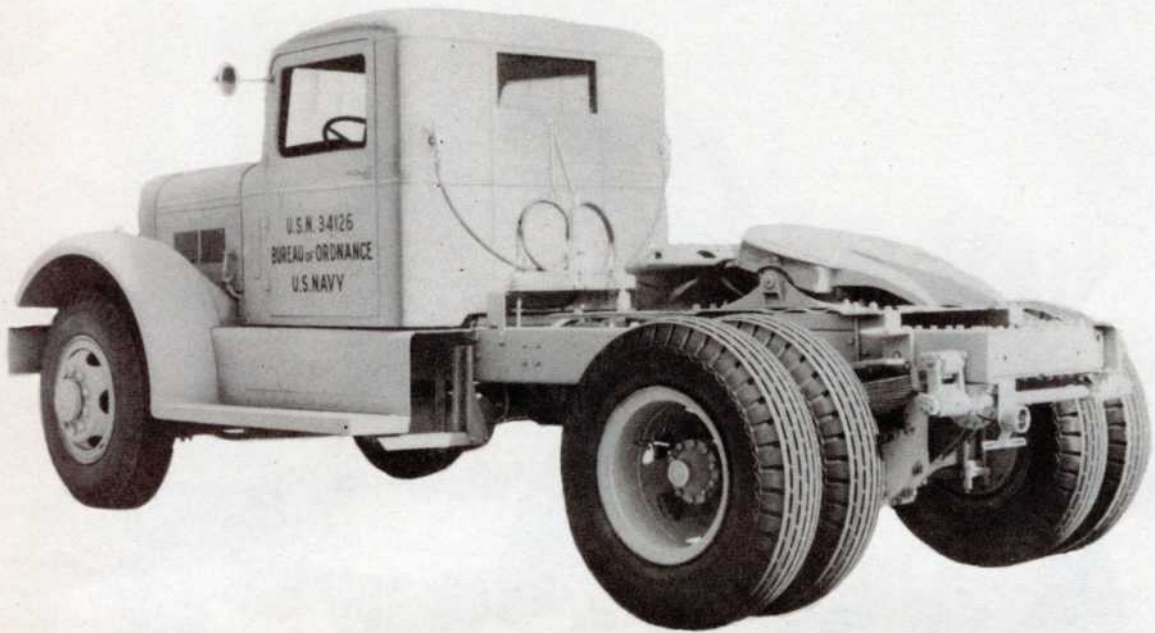
THE 6000-pound Electric Telescopic Fork Truck is similar to the 4000-pound truck previously described, except it is more heavily weighted at the rear. This enables it to carry a greater load with less tendency to tip over.

MANUFACTURER: Automatic Transportation Co., Chicago, Ill.

DIMENSIONS: approx. 3.7 x 7.5 x 11.8 feet.

WEIGHT: approx. 11,860 pounds.

TRUCK-TRACTOR, AUTOCAR, MODEL C-90T



TRUCK-TRACTOR, AUTOCAR, MODEL C-90T

THE Truck-Tractor, Autocar, Model C-90T is a standard commercial tractor used to haul various types of trailers. It is gasoline powered, and equipped with air brakes. Trailer connections, hose and valves are mounted on a bracket on the back of the cab.

Spare parts are issued with each truck. Order additional spare parts from the local Autocar Company distributor; The Autocar Company, Ardmore, Pennsylvania; Naval Ammunition Depot, Crane, Indiana; Naval Supply Depot, Clearfield, Utah; or the Naval Supply Depot, Scotia, New York.

When ordering parts, consult the manufacturer's maintenance manual supplied with

each truck to make sure that the order covers the USN registration number of the truck for which the spare parts are required. This is important since there are 2 types of Truck-Tractors, Autocar, Model C-90T.

MANUFACTURER: The Autocar Co., Ardmore, Pa.

DIMENSIONS: approx. 17.3 x 8.0 x 7.7 feet.

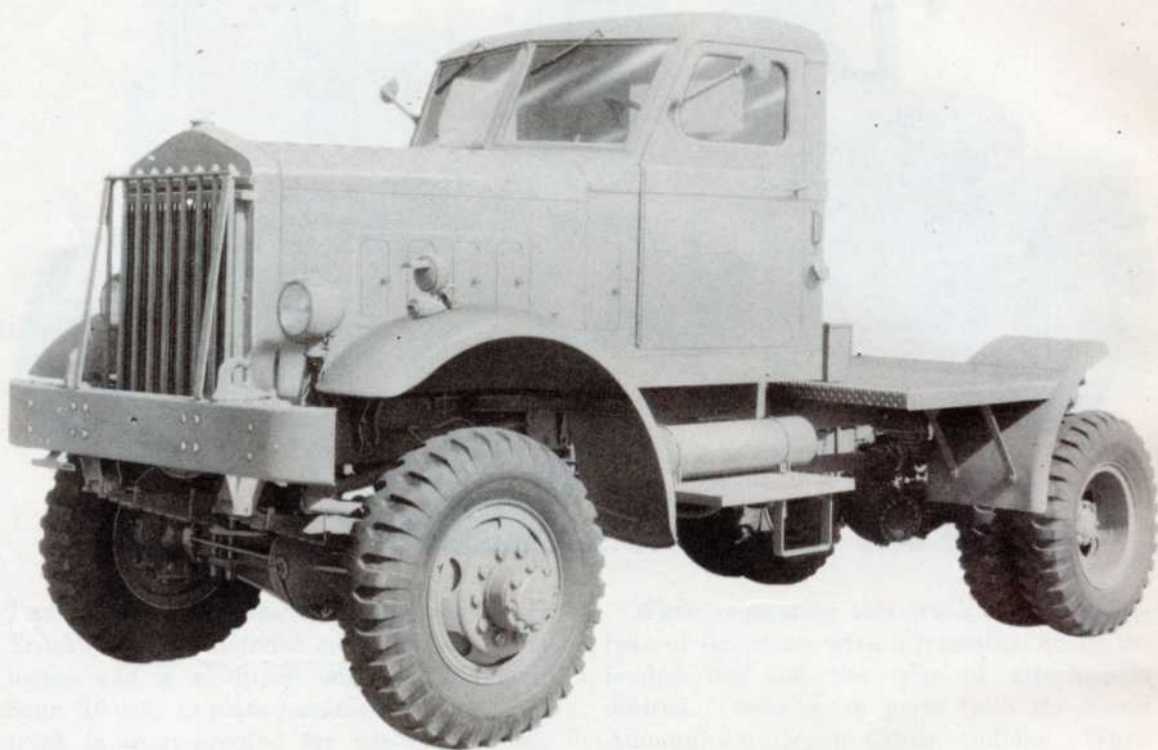
WEIGHT: approx. 11,500 pounds.

TIRES: 10.00 x 20.

PUBLICATION: Care, Operation and Parts List, The Autocar Co. Model C-90T.

BUAER COGNIZANCE

TRUCK-TRACTOR, STERLING 4x4



TRUCK-TRACTOR, STERLING 4 x 4

THE Sterling 4 x 4 Truck-Tractor is a 4-wheel pneumatic drive tractor used as a prime mover and as motive power for various types of semi-trailers. The truck-tractor is gasoline powered with a Waukesha 6SRKR engine, and has 4 speeds forward and one reverse. It will haul a payload of approximately 12 to 18 tons and was procured primarily for use at advanced bases where terrain conditions require the use of 4 x 4 vehicles.

Spare parts are shipped with every 5 trucks. Order additional spare parts from the Naval Ammunition Depot, Crane, Indiana.

MANUFACTURER: Sterling Motors Corporation, Milwaukee, Wis.

DIMENSIONS: approx. 18.2 x 8.8 x 8.0 feet.

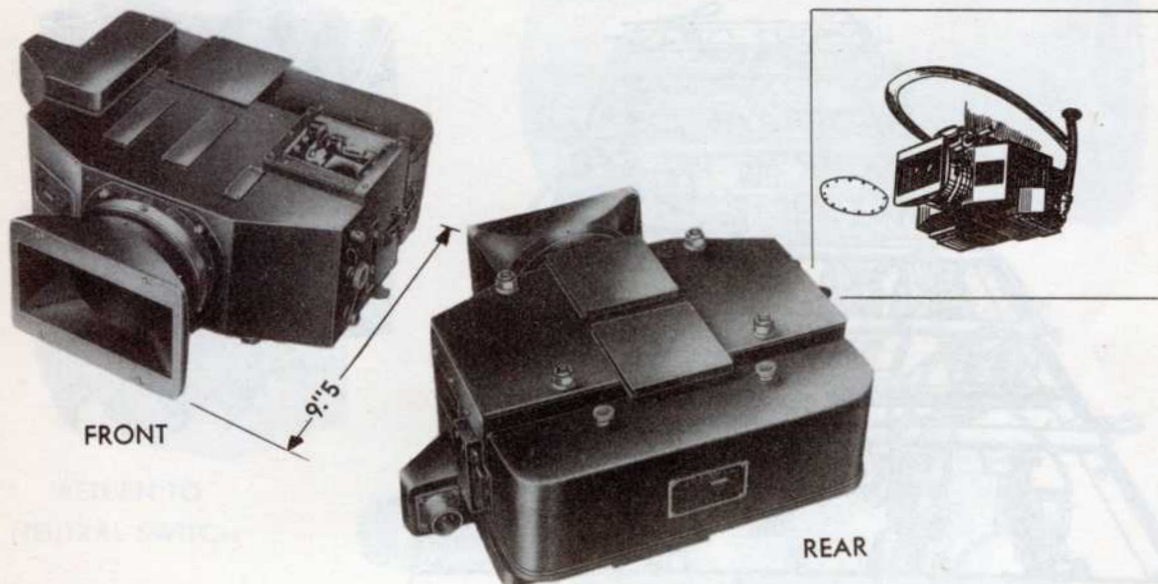
WEIGHT: approx. 12,125 pounds.

BUREAU OF AERONAUTICS COGNIZANCE

CAMERA, TORPEDO TRAINING
CARRIER, PARACHUTE FLARE
DRIVES, ELECTRIC TURRET
DRIVES, HYDRAULIC
FEED MECHANISMS, CONTINUOUS
LANYARD, TORPEDO STARTING
PILOT, AUTOMATIC
POWER MOUNT, HYDRAULIC
SOLENOIDS
SWITCHES, GUN AND BOMB
SYNCHRONIZERS
TURRETS
VALVE, HYDRAULIC

NOTES

CAMERA, TORPEDO, TYPE F-46



CAMERA, TORPEDO, TYPE F-46

BUREAU OF AERONAUTICS COGNIZANCE

THE Torpedo Camera F-46 is used to determine the result of actual combat or practice aerial torpedo attack. The camera has a 5-inch wide-angle lens and a louvre shutter having a single speed of about 1/100 of a second. A special film gives 4 exposures per loading. The camera recycles in about 45 seconds, during which time the film is automatically wound into position for the next exposure. As only one torpedo is dropped per run; the 45-second recycling time is considered adequate.

The camera is attached to the airplane by an adjustable mounting bracket and bore-sighted with the aircraft's line of flight. It may be located below, above, or within the wing, or on top of the fuselage provided there is an unobstructed view in the following positions: horizontal forward 70 degrees and vertical 30 degrees.

The camera is connected in the torpedo release circuit and will begin photographing the instant the torpedo is released. The photographs will show the position of the target with respect to the airplane. Assessment of the negatives by means of the assessing equipment gives information on the flight attitude at the time of torpedo drop, the range, lead and target angles, and whether a hit has been scored.

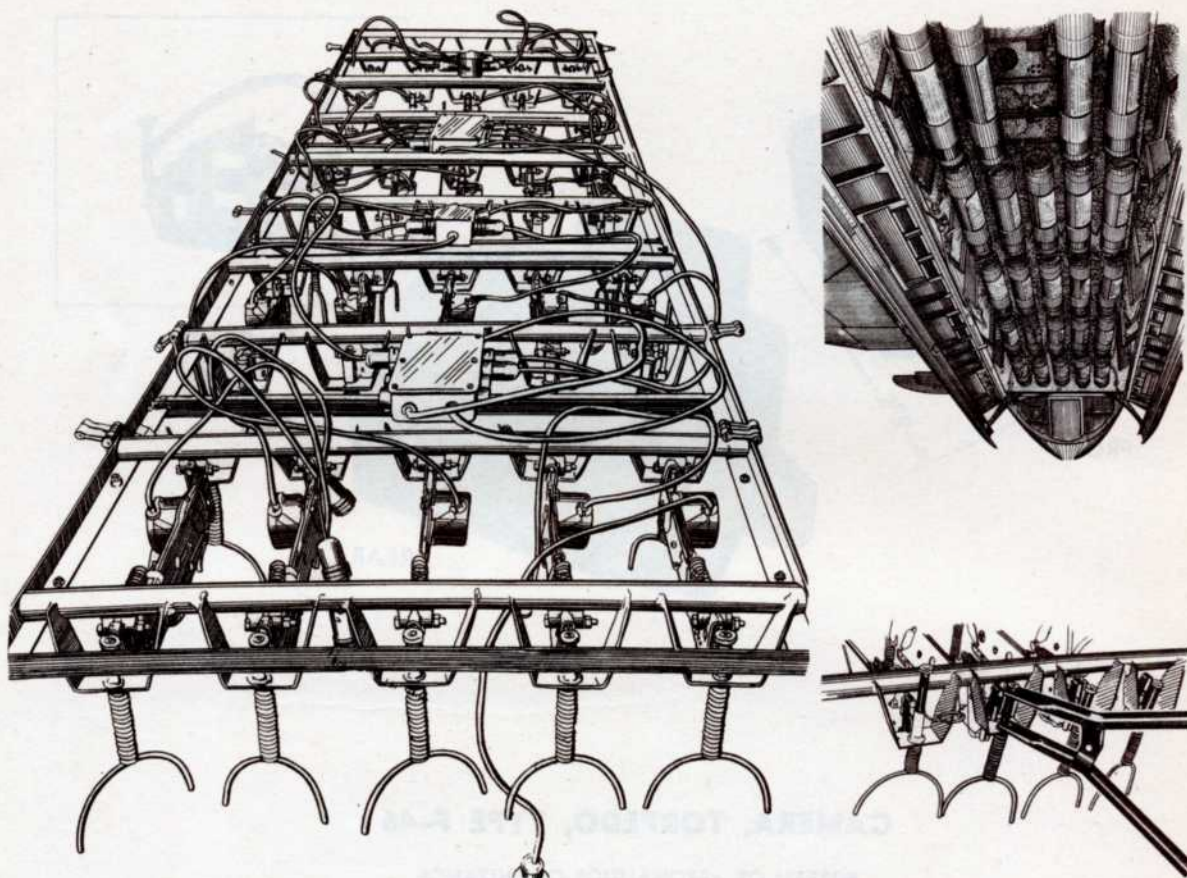
DIMENSIONS: approx. 11.1 x 9.5 x 6.1 inches.

WEIGHT (including mounting bracket): approx. 17.0 pounds.

PUBLICATIONS: Photography Tech. Bulletin 22-43, NavAer. 10-1R-37, 10-14-42.

MFR'S DWG: Solar Aircraft Co., Russell Vought Div. VT. 1015.

CARRIER, PARACHUTE FLARE, MARK 1



CARRIER, PARACHUTE FLARE, MARK 1

BUREAU OF AERONAUTICS COGNIZANCE

THE Parachute Flare Carrier is a flare rack that can be carried in the bomb bay of model TBF and TBM airplanes. It consists of a frame having 5 sets of racks, each set being capable of holding 5 parachute flares Mark 5, Mods. 3, 4, 5, and 6. Since the electrical release system limits the capacity of the carrier to only 24 flares, the first set of racks toward the front of the airplane carries 4 flares, while the other 4 sets each carry 5.

The flares are ejected from the carrier by means of spring-loaded forks. They are held against these forks by Bomb Shackles Mark 4. (Shown in the drawing.) The springs of the

ejection forks are initially compressed by a special tool; a pin is then inserted in the fork shaft, holding it in this position while the flare is being attached to the shackle. When the flare is in place the pin is removed.

DIMENSIONS (springs extended): approx. 138.9 x 34.8 x 10.3 inches.

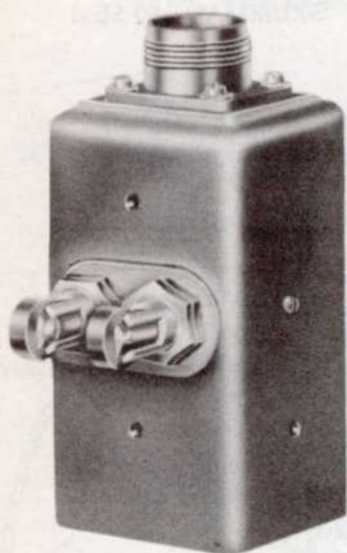
WEIGHT:

Empty, approx. 300 pounds.

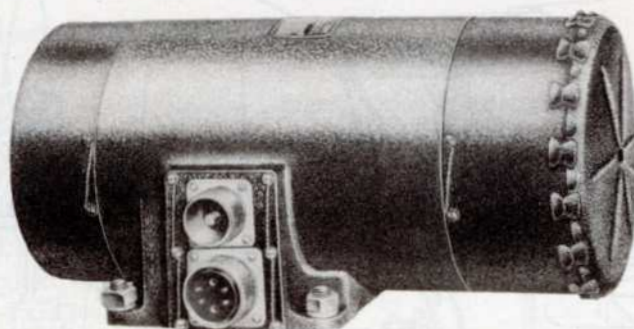
Loaded, approx. 800 pounds.

MFR'S DWG: Fred S. Gichner Co. Job 2000, Dwg. 1 to 4.

DRIVE, ELECTRIC TURRET, MODEL G. E. 2CGS50USA1



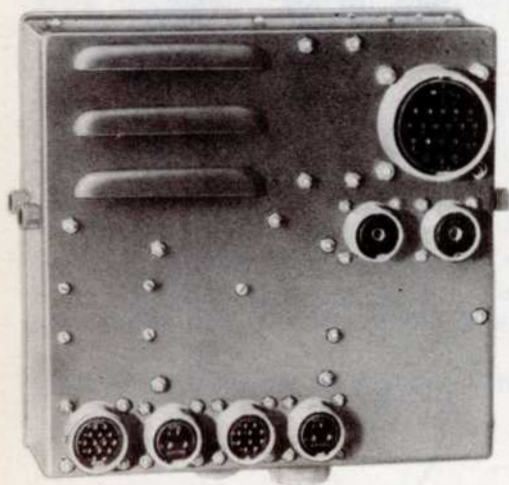
RETURN TO
NEUTRAL SWITCH



AMPLIDYNE MOTOR GENERATOR

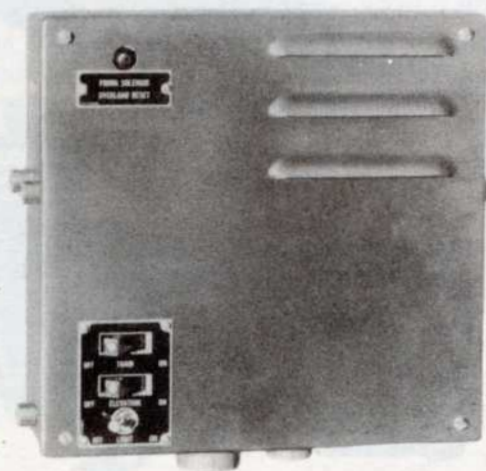


CONTROL UNIT



FRONT

O.P. 865

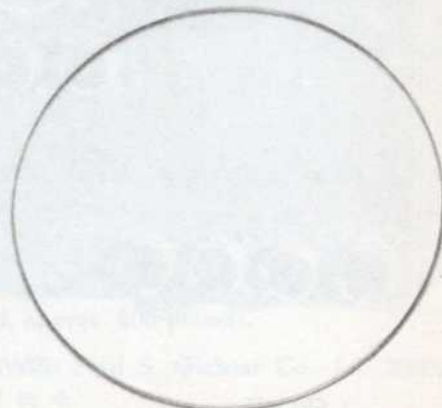
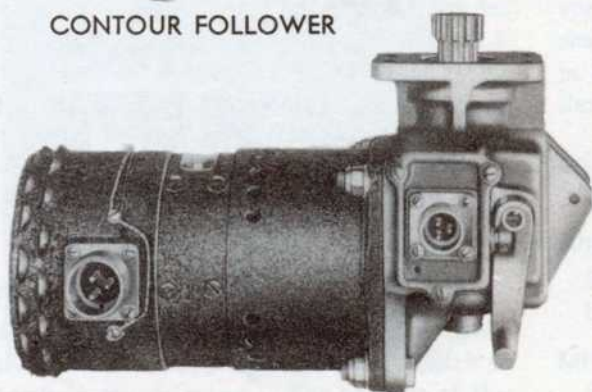
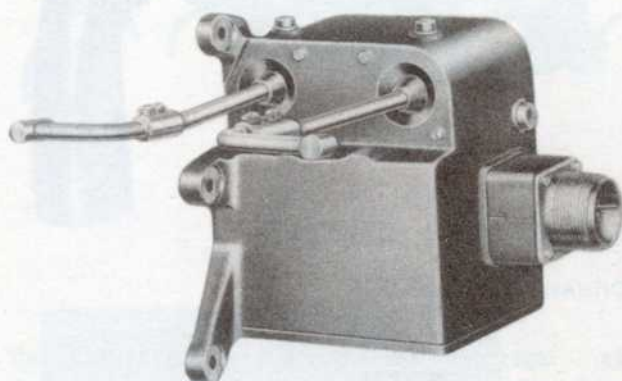
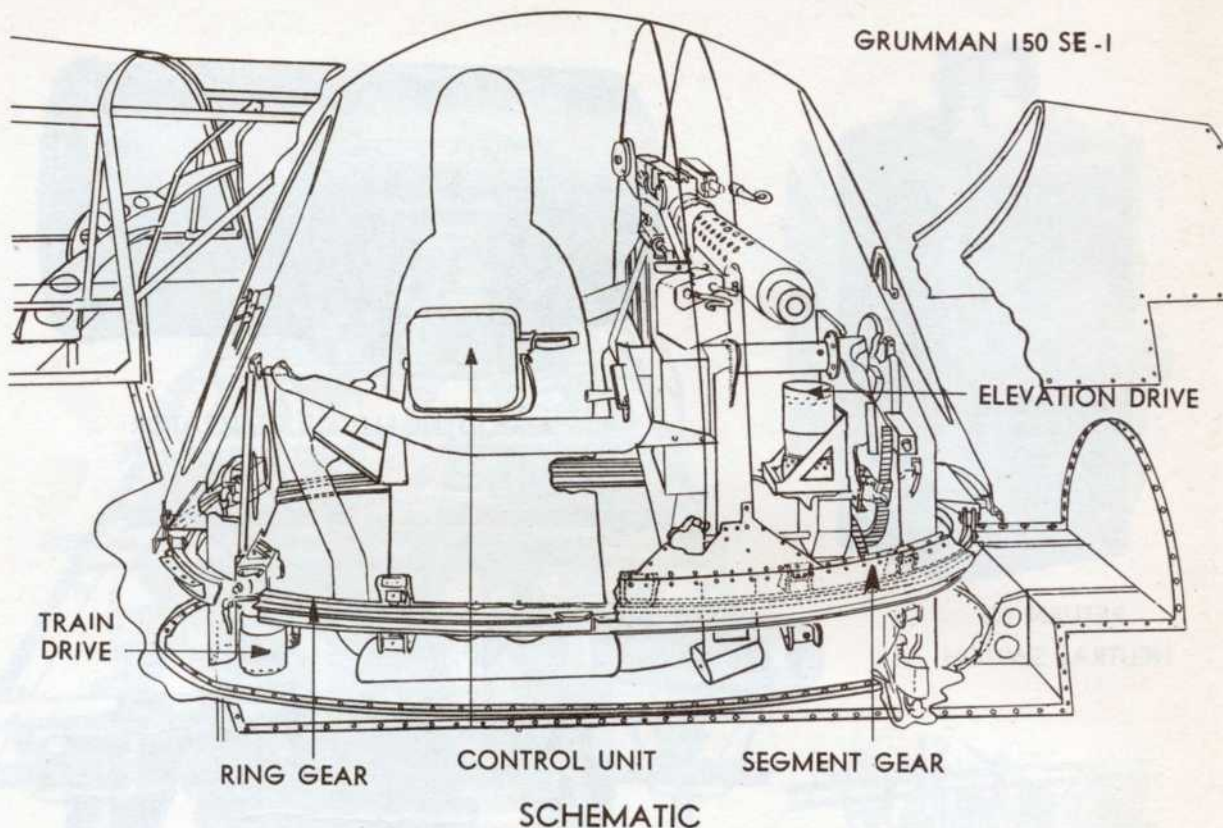


REAR

JUNCTION BOX

DRIVE, ELECTRIC TURRET, MODEL G. E. 2CGS50USA1 (CONT'D)

GRUMMAN 150 SE -I



DRIVE, ELECTRIC TURRET, MODEL G. E. 2CGS50USA1 (CONT'D)

DRIVE, ELECTRIC TURRET MODEL G.E. 2CGS50USA1

BUREAU OF AERONAUTICS COGNIZANCE

THE Electric Turret Drive Model G.E. 2CGS50USA1 is used to operate the Grum-

man 150SE-1 turret which is located on TBF and TBM type airplanes.

The drive consists of the following parts:

- Control unit G.E. Part No. 5322784G1
- Train drive unit G.E. Part No. 8017845G1
- Elevation drive unit G.E. Part No. 5322780G1
- Train return-to-neutral switch G.E. Part No. 6992821G1
- Elevation return-to-neutral switch G.E. Part No. 5988763G1
- Contour follower G.E. Part No. 8002818G1
- Amplidyne Motor Generators G.E. Model No. 5AM31NJ6
- Junction box G.E. Part No. 8017233G1
- Train ring gear G.E. Part No. 8017848P1
- Elevation gear segment G.E. Part No. 8000649G1

The Control unit includes two potentiometers, one for controlling the turret in train and the other for controlling the turret in elevation. This unit besides controlling all motion of the turret also carries the gun firing switches.

The Train Ring Gear, to which the train drive unit is geared, is mounted to the fuselage and remains in a fixed position.

The Elevation Gear Segment is stationary. The elevation drive unit is attached to the left hand side of the chassis and is geared to the segment. The operation of the driving gear against the stationary segment enables the turret to be elevated.

The Elevation and Train Drive units consist of shunt wound motors mounted on gear housings. The motors are provided with brakes which hold the turret in a fixed position when the power is removed. The gear units are equipped with clutch mechanisms, which allow the turret to be manually operated in the event of power failure. Manual movement of the turret in azimuth, however,

can only be accomplished from outside the turret.

One Amplidyne Motor Generator is used to provide power for each drive motor. The 2 amplidynes which consist of DC generators driven by shunt wound motors are mounted one above the other on the port side of the gun. The generators are capable of producing large power output from a small field input.

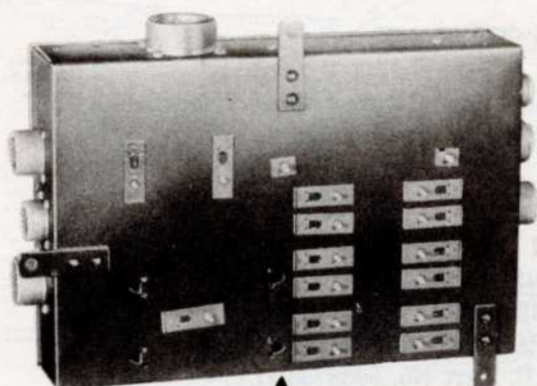
Return-to-Neutral-Switches are used to return the turret and gun to a stowed position when the dead man switch is released.

The Contour Follower serves to clear the gun of obstructions caused by the airplane structure. A track is provided around the turret to simulate the obstructions. When the contour follower arms hit the track, the contacts of the unit are operated so as to elevate and clear the structure.

The Junction Box contains relays, resistors, capacitors and switches necessary for turret operation.

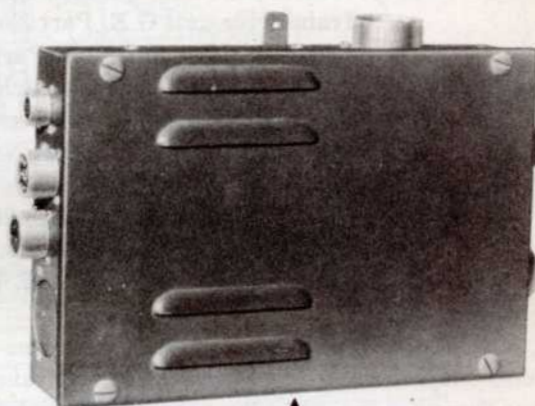
PUBLICATION: General Electric Co., Instruction Manual GEI-15663B.

DRIVE, ELECTRIC TURRET, MODEL G. E. 2CGS50USB1

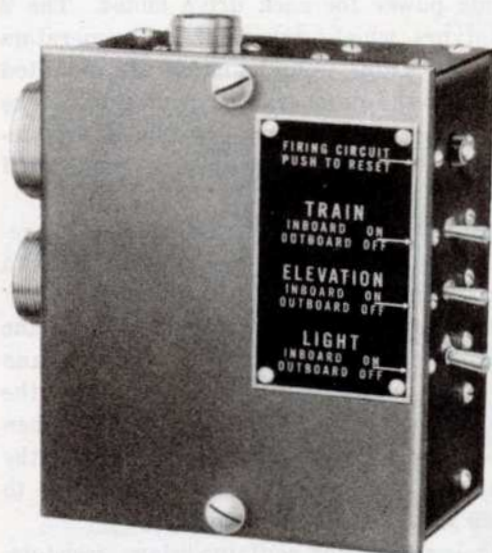


↑
REAR

JUNCTION
BOX

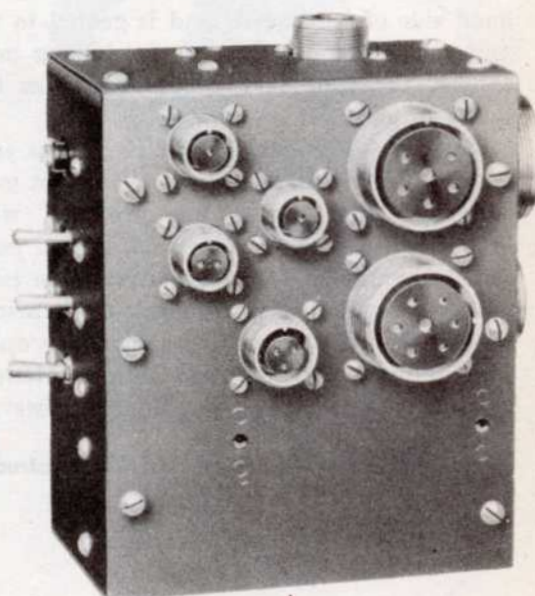


↑
FRONT



↑
FRONT

SWITCH
BOX

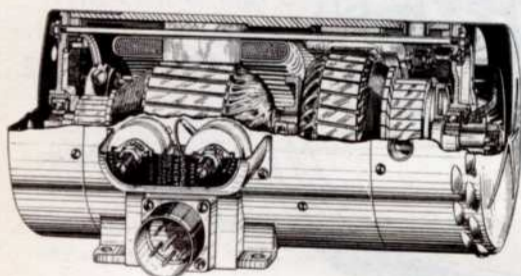


↑
REAR

DRIVE, ELECTRIC TURRET, MODEL G. E. 2CGS50USB1 (CONT'D)



AMPLIDYNE MOTOR GENERATOR



CONTROL UNIT

DRIVE, ELECTRIC TURRET, MODEL G.E. 2CGS50USB1

BUREAU OF AERONAUTICS COGNIZANCE

THE Electric Turret Drive Model G.E. 2CGS50USB1 is used to operate the Grumman 150SE-2 turret which is located on TBF and TBM type airplanes.

The drive is similar to and supersedes the G.E. 2CGS50USA1. The most notable differences are a redesigned junction box, a new

switch box replacing the turret manufacturer's pull box, a single handle control unit, different amplidynes, a change in the motor of the drives, and a profiled cam gun fire interrupter. All other parts are the same.

The new parts and their numbers are as follows:

Control unit G.E. Part No. 8254251G1

Switch box G.E. Part No. 8252968G1

Junction box G.E. Part No. 8252963G1

Amplidyne motor-generator G.E. Model No. 5AM31MJ18A

Train drive G.E. Part No. 8254252G1

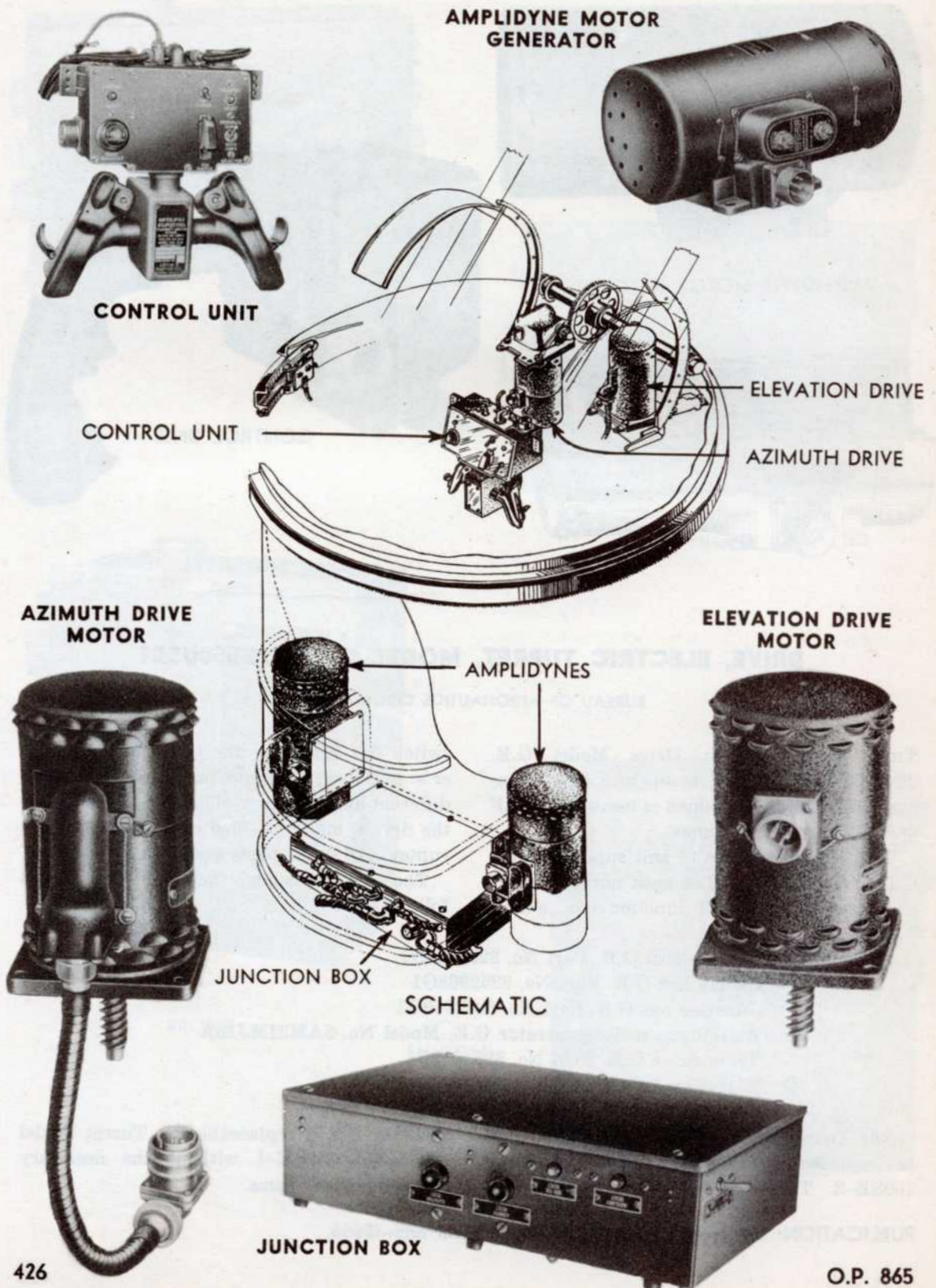
Elevation drive G.E. Part No. 8254261G1

The Turret Model Grumman 150SE-1 can be replaced by Turret Model Grumman 150SE-2. Turret Model Grumman 150SE-2

however is not replaceable by Turret Model Grumman 150SE-1 without the necessary fire interrupter cams.

PUBLICATION: General Electric, Instruction Manual GEI-18496.

DRIVE, ELECTRIC TURRET, MODELS G. E. 2CGD50USC1, 2CGD50USC2, 2CGD50USC3



DRIVE, ELECTRIC TURRET, MODELS G. E. 2CGD50USC1, 2CGD50USC2, 2CGD50USC3

DRIVE, ELECTRIC TURRET MODEL G.E. 2CGD50USC1

BUREAU OF AERONAUTICS COGNIZANCE

THE Electric Turret Drive Model G.E. 2CGD50USC1 is used to operate Turrets Model Martin 250 CE-7. These turrets are

located on the upper deck of PV-1 airplanes.

The drive consists basically of the following parts:

Control unit G.E. Part No. 8004558G1

Amplidyne motor generators G.E. Part No. 5AM31NJ18A

Elevation drive motor G.E. Part No. 5BA50GJ1

Azimuth drive motor G.E. Part No. 5BA50LJ1

Junction box G.E. Part No. 8017248G1

The Control unit consists of 2 potentiometers, one for controlling the turret in train and the other for controlling the guns in elevation. This unit, besides controlling all motion of the turret, also carries the gun firing switches.

The Junction box which is mounted under the gunner's seat, contains relays, resistors, capacitors, and switches necessary for turret operation.

Two Amplidyne Motor Generators are used to provide power for the azimuth and elevation drive motors. An amplidyne is mounted on either side of the turret seat. They consist of a DC generator driven by a shunt-

wound motor. The generator is capable of producing large power output from a small field input.

The Elevation Turret Drive motor is a $\frac{1}{3}$ -horsepower motor which when connected to a gear drive is used to elevate and depress the guns. The motor is mounted to the turret in a vertical position with the pulley end of the armature shaft up.

The Azimuth Turret Drive motor is a $\frac{1}{2}$ -horsepower motor which when connected to a gear drive is used to horizontally rotate the turret. The motor is mounted in the turret in a vertical position with the pulley end of the armature shaft down.

PUBLICATION: General Electric, Instruction Manual GEI-16641A.

DRIVE, ELECTRIC TURRET MODEL G.E. 2CGD50USC2

BUREAU OF AERONAUTICS COGNIZANCE

THE Electric Turret Drive Model G.E. 2CGD50USC2 is used to operate Turrets Model Martin 250CE-12 from serial number 1 K to 230 K. These turrets are located on the upper deck of PV-1 airplanes.

This drive is similar to the G.E. 2CGS50-USC1, except that the control unit has had

the sight rheostat and gun camera switch removed and the junction box now incorporates a new sight outlet with appropriate wiring.

The new parts and their numbers are as follows:

Control unit G.E. Part No. 8601570G1

Junction box G.E. Part No. 8000390G1

DRIVE, ELECTRIC TURRET MODEL G.E. 2CGD50USC3

BUREAU OF AERONAUTICS COGNIZANCE

THE Electric Turret Drive Model G.E. 2CGD50USC3 is used to operate all Martin Electric Drive Turrets subsequent to the Model Martin 250CE-12 serial number 231 K.

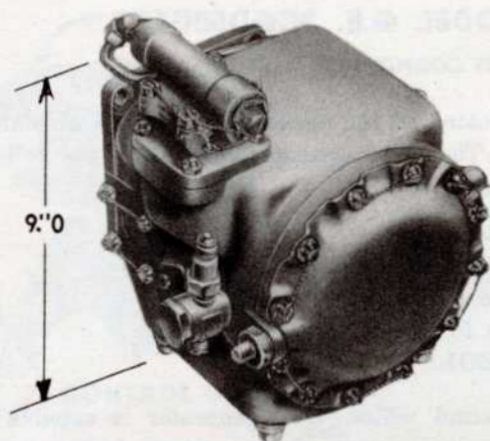
This drive is similar to the 2CGD50USC2 but has been changed in that the 60-ampere

gun reset on the junction box is removed and a 15-ampere gun reset has been added. There have also been appropriate wiring changes made to accommodate computing sights.

The new part is as follows:

Junction box G.E. Part No. 8000390G2

DRIVE, VARIABLE DISPLACEMENT PUMP, VICKERS



DRIVE, VARIABLE DISPLACEMENT PUMP

VICKERS PART No. AA-20203 AND AA-20204

BUREAU OF AERONAUTICS COGNIZANCE

THE Vickers Variable Displacement Pump Drive Type AA-20203 or AA-20204 furnishes hydraulic pressure for the operation of gun turrets. The unit is composed of a piston-type hydraulic pump enclosed in a housing which contains a built-in compressed-air supercharging chamber. The housing serves as a reservoir for the hydraulic system.

The pump consists of a cylinder block universally connected to a drive shaft. The pistons from which the hydraulic pressure is derived are placed in cylinders arranged in a circle in the cylinder block. Their connecting rods are joined by a ball and socket joint to the drive shaft. Rotation of the shaft causes a reciprocating motion of the pistons in the revolving cylinder block. This develops suction at one port during one half of a revolution (as the pistons are withdrawn) and pressure at the other port during the other half (as the pistons are thrust out).

The flow rate is controlled by a pressure compensator which automatically adjusts the angle between the cylinder block and the drive shaft of the pump.

Model No. AA-20203 is used in Turrets Ereo 250SH-2, and 250SH-2A.

Model No. AA-20204, Type L is used in Turrets Martin 250CH-1, 250CH-2, and 250CH-3.

Model No. AA-20204, Type H is used in Turrets Martin 250SH-1, 250SH-1A, and 250SH-2.

DIMENSIONS: approx. 8.5 x 7.8 x 9.0 inches.

WEIGHT: approx. 14.0 pounds.

OPERATING PRESSURES:

AA-20203, 900 to 1100 pounds per square inch.

AA-20204 Type L, 640 to 740 pounds per square inch.

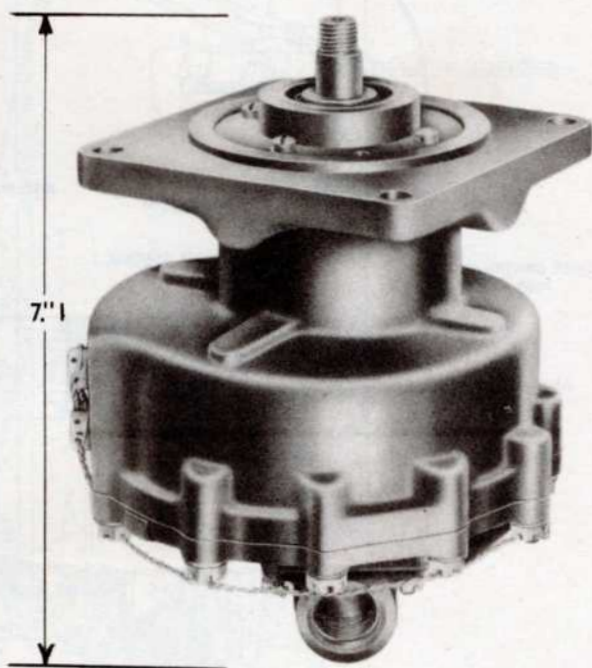
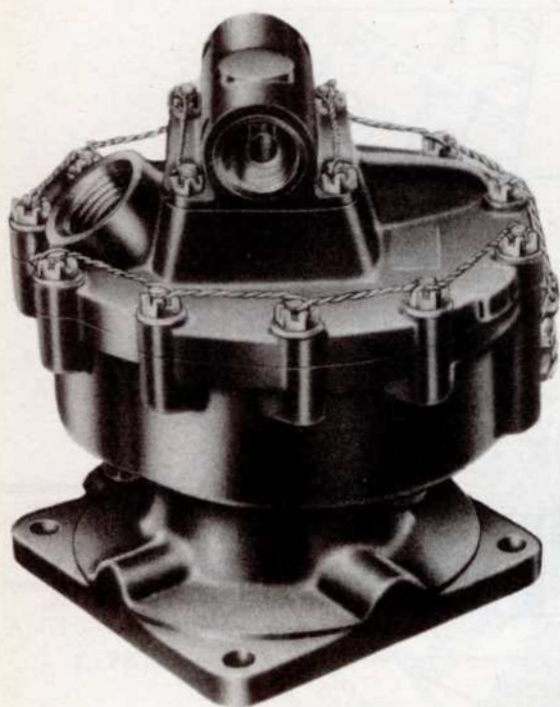
AA-20204 Type H, 900 to 1000 pounds per square inch.

RESERVOIR CAPACITY: approx. 0.4 gallon.

MFR'S DWGS:

Part No.	AA-20203	AA-20204
Installation	R-75013	R-74756
Service	76740	76740

DRIVE, HYDRAULIC PUMP, DOWTY



DRIVE, HYDRAULIC PUMP, DOWTY No. FA1301D

BUREAU OF AERONAUTICS COGNIZANCE

THE Dowty Hydraulic Pump Drive furnishes hydraulic pressure for operation of the Hydraulic Gun Mount Mark 1. It consists of a centrally located shaft with suction and delivery ports, and a rotor containing 7 radial cylinders and pistons. The rotor assembly revolves about the central shaft while confined in a steel ring which is retained in an eccentric position by laminated springs. This causes the pistons on one side of the rotor to be extended more than those on the opposite side and imparts a reciprocating motion to the pistons. While the piston is being extended, hydraulic fluid is taken into each cylinder from the center suction port. When the pis-

tons move in the opposite direction, fluid under pressure, is ejected at the delivery port.

An Air Associates' motor, number EE-1130, rated 0.55 horsepower at 24-volt DC, is used to drive this pump.

DIMENSIONS: approx. 7.1 x 5.0 x 5.0 inches.

WEIGHT: approx. 8.8 pounds.

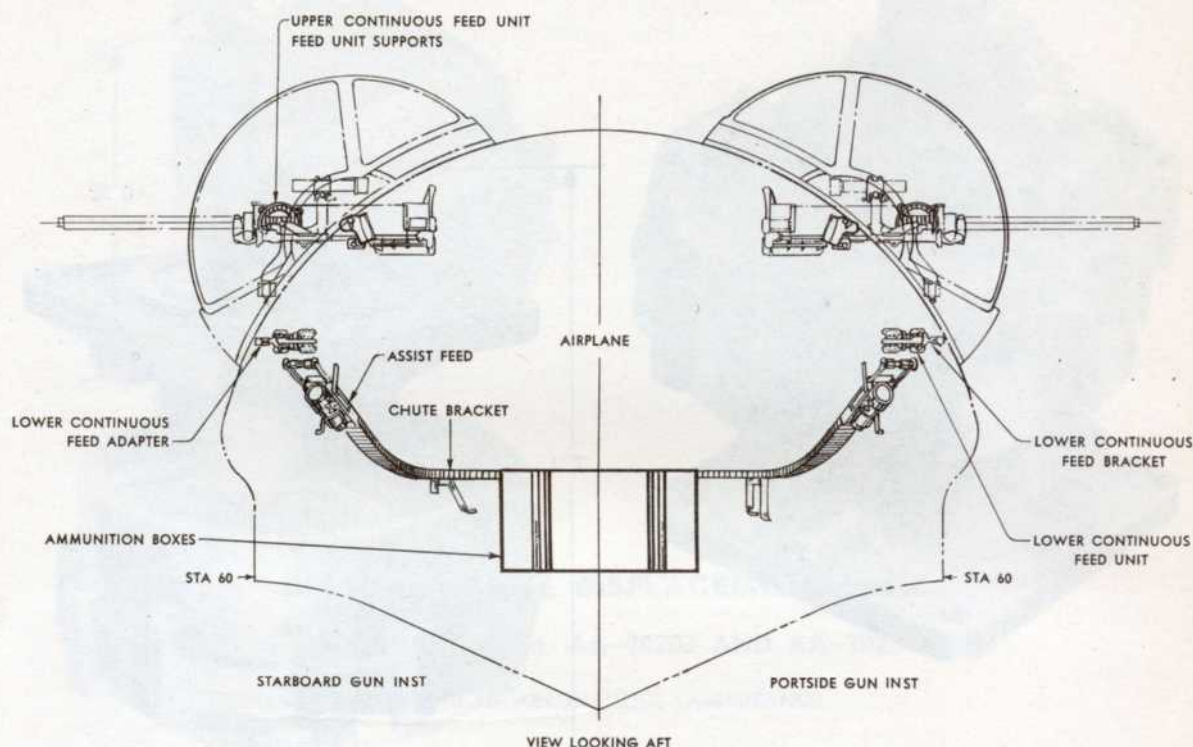
DELIVERY:

Maximum, approx. 2.5 gals/min. at 680 pounds per square inch.

Minimum, approx. 2.0 gals/min. at 590 pounds per square inch.

MFR'S DWG: Dowty FA1301D.

FEED MECHANISM, CONTINUOUS



FEED MECHANISM, CONTINUOUS

BELL AIRCRAFT ASSEMBLY No. GM749-815

BUREAU OF AERONAUTICS COGNIZANCE

THE Continuous Feed Mechanism Bell No. GM 749-815 increases the effectiveness of caliber .50 side waist guns in PBV-5 airplanes or identical installations by making a large quan-

tity of ammunition available to the guns without interruption.

The system consists of the following units with their supporting assemblies and brackets:

Bell Aircraft Part and Dwg. No.	Name	Number Required
03-042-350	Ammunition magazine assembly	1
03-042-401	Ammunition chute assembly—starboard	1
03-042-400	Ammunition chute assembly—port	1

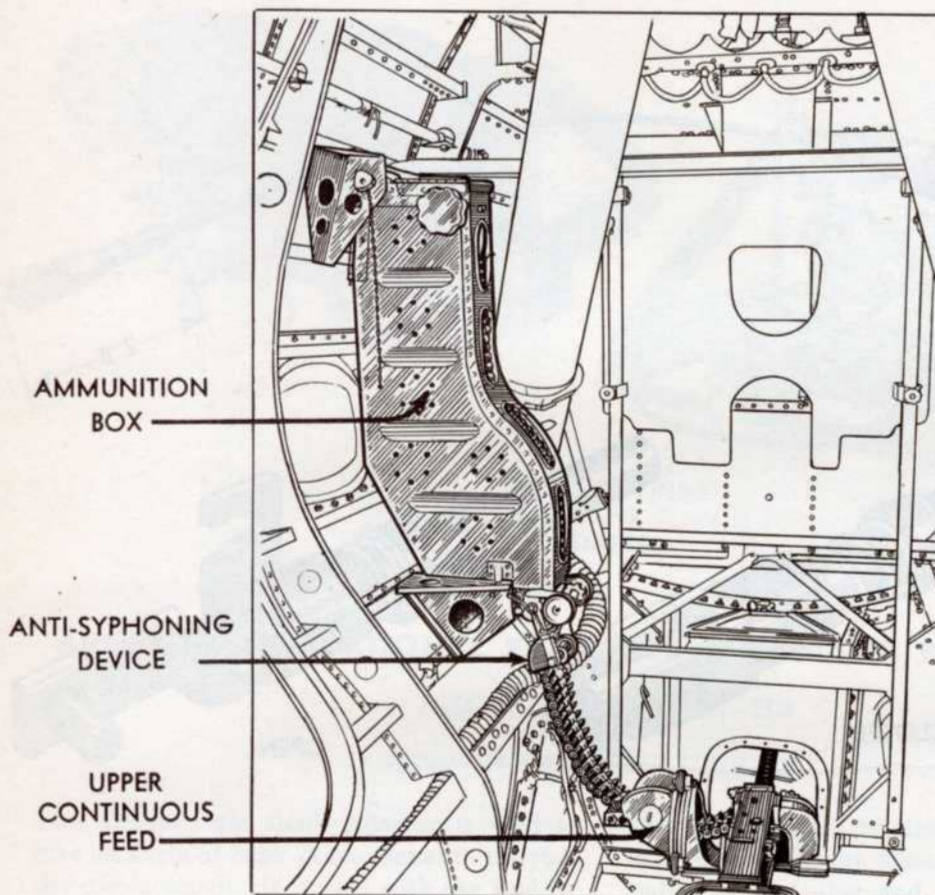
Bell Aircraft Part and Dwg. No.	Name	Number Required
03-047-384	Assist feed assembly—starboard	1
03-047-080	Assist feed assembly—port	1
GM749-957	Lower continuous feed unit	2
03-038-076	Upper continuous feed unit	2

The continuous feed units are attached to the gun mounting post and gun mount adapter to allow the feed mechanism to function at all

angles of fire.

The capacity of the system is 500 rounds for each of the 2 guns.

FEED MECHANISM, CONTINUOUS (CONT'D)



FEED MECHANISM, CONTINUOUS

BELL AIRCRAFT ASSEMBLY No. 03-067-002

BUREAU OF AERONAUTICS COGNIZANCE

THE Continuous Feed Mechanism, Bell No. 03-067-002 is installed in TBF airplanes for uninterrupted feeding of the ammunition to the caliber .30 tunnel gun.

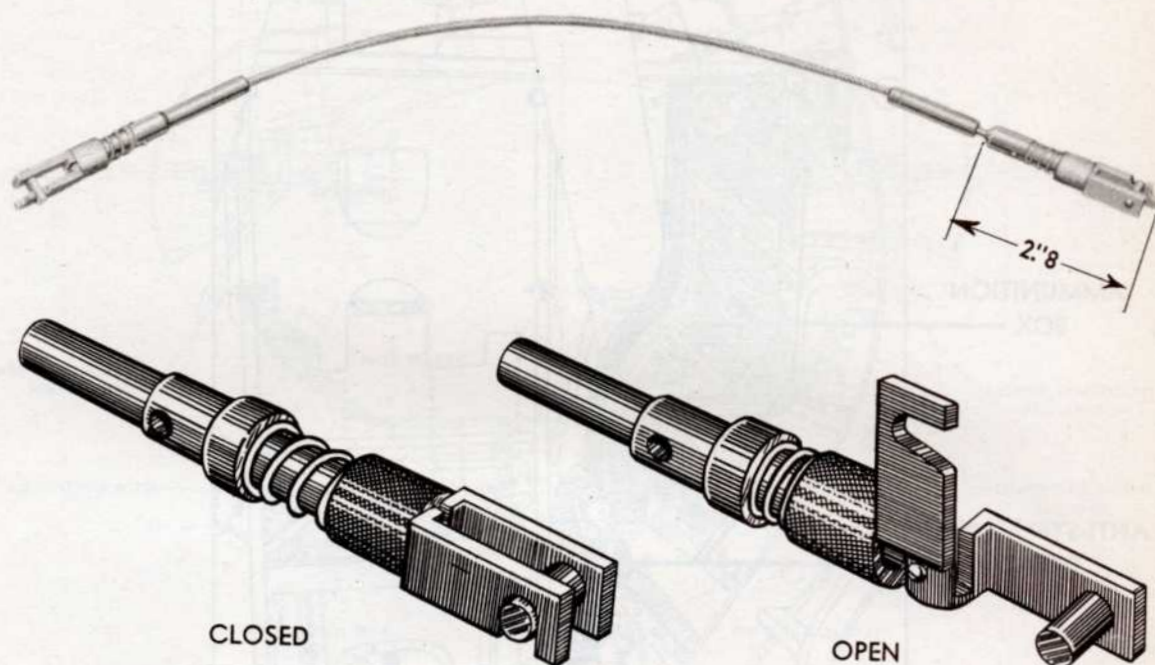
The component units and the manufacturer's part numbers are as follows:

Bell Aircraft Part and Dwg. No.	Name	Number Required
03-067-053	Anti-Syphoning Device Assembly	1
03-067-050	Upper Continuous Feed Unit Assembly	1
03-967-020	Ammunition Box	1

The ammunition box is supported by brackets on the starboard side of the airplane. The anti-syphoning device allows the ammunition belt to be drawn out of the box only as required by firing of the gun. The upper continuous feed unit guides the ammunition belt into the gun at any firing angle that the gun may assume.

The capacity of the system is 500 rounds.

LANYARD, TORPEDO STARTING, SHAKESPEARE TYPE



LANYARD, TORPEDO STARTING, SHAKESPEARE TYPE

BUREAU OF AERONAUTICS COGNIZANCE

THE Torpedo Starting Lanyard is used to trip the starting lever of a torpedo as it is released from an airplane. The lanyard consists of a $\frac{1}{16}$ -inch diameter cable with quickly attachable fittings at each end. One fitting fastens to the airplane and the other to the toggle of the starting lever on the torpedo. When the torpedo is released, the toggle is pulled out of the torpedo and remains attached to the lanyard.

The starting lanyard comes in the following

DIMENSIONS (2 hook): approx. 2.8 x 0.3 x 0.3 inches.

WEIGHT (hook): approx. 0.1 pound.

lengths which are used with airplanes as listed:

9-inch: PV-2, TBF-1, TBM-1, TBM-3, SB2D-1, P2V-1, TDN-1, PBY-5, PBY-5A, PB2B-1, PBV-1A, PBN-1, PB2Y-3.

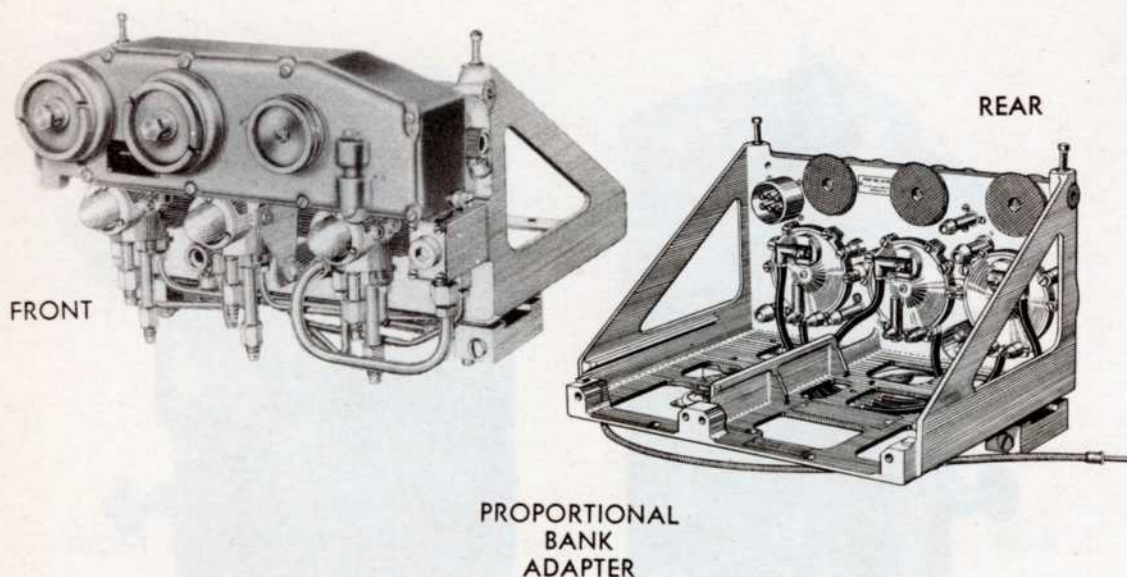
12-inch: PV-1, PBM-3C, PBM-3D, TBY-1, TDR-1.

25-inch: SB2C-1, SB2C-2.

33-inch: PBJ-1.

MFR'S DWG: Garden City Plating & Manufacturing Co., C-200R.

ADAPTER, PROPORTIONAL BANK



ADAPTER, PROPORTIONAL BANK, FOR AUTOMATIC PILOT MARK 3

FSSC STOCK No. 88-A-210

BUREAU OF AERONAUTICS COGNIZANCE

THE Proportional Bank Adapter is used to give an angle of bank proportional to the rudder displacement. It is used with the Rudder Control Unit, (FSSC Nos. 88-C-1425 and 88-C-1427) and Rudder Transfer Valve (FSSC No. 88-V-375) to adapt the automatic pilot for use as stabilized bombing approach equipment.

The assembly consists of an adapter mechanism housed in a rectangular metal box. This is mounted on the rear of the gyro control mount unit. Three shafts extend through the housing, one for control of the ailerons, one for control of the elevator, and one for control of the rudder. At one end of each shaft is a clutch disc which engages a corresponding follow-up pulley clutch disc of the directional control and bank and climb control units. On the other end of each shaft is a pulley to which the follow-up cables are attached.

The adapter mechanism provides for proportional rotation of the aileron and elevator shafts when the rudder control shaft is rotated. Differentials in the elevator and ail-

eron shafts permit rotation of the clutch discs at one end without disturbing the follow-up pulley at the other end. A "zero float" adjustment, permitting a small amount of free angular rotation of the rudder control shaft, prevents bank climb of the airplane with small changes in rudder movement.

In operation, when the rudder is displaced for the execution of a turn—which is done through the Rudder Control Unit—the adapter rudder shaft is rotated by the follow-up cable, causing the aileron and elevator shafts to rotate. This rotation is transmitted to the bank and climb control unit which, in turn, causes the servo unit to bank the airplane the proportional amount.

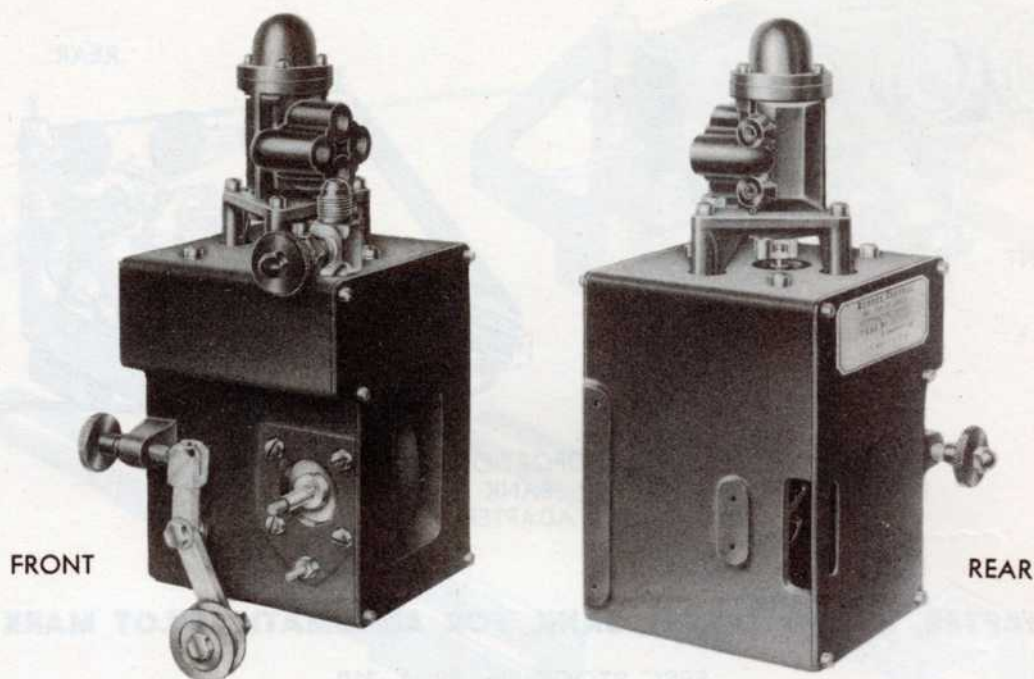
DIMENSIONS: approx. 13.3 x 4.6 x 3.4 inches.

WEIGHT: approx. 7.4 pounds.

PUBLICATION: Instruction Manual, issued by Instrument Section, NAF.

NAF DWG: 47996.

CONTROL UNIT, RUDDER



RUDDER CONTROL UNIT

CONTROL UNIT RUDDER FOR AUTOMATIC PILOT MARK 3

FSSC STOCK No. 88-C-1425 and 88-C-1427

BUREAU OF AERONAUTICS COGNIZANCE

THE Rudder Control Unit, together with the Proportional Bank Adapter (FSSC Stock No. 88-A-210) and the Rudder Transfer Valve (FSSC Stock No. 88-V-375) is used to adapt the Automatic Pilot Mark 3 for use as stabilized bombing approach equipment. It consists of a rectangular metal box inside of which is an air pick-off and an air relay. Projecting outside the box, but connected to the air relay, is a balanced oil valve.

The rudder control unit is attached to the bombsight stabilizer. It is operated by a secondary clutch arm which engages the knife edge of the air pick-off. The secondary clutch arm is connected to the stabilizer, and its movement is controlled automatically by the

gyro, or mechanically by the bombardier. Through the rudder transfer valve the rudder control unit is coupled to the rudder servo of the automatic pilot which provides for control of the rudder.

There are 2 stock numbers for this item. The units FSSC Stock No. 88-C-1427 are used only on PBM airplanes; the units FSSC Stock No. 88-C-1425 are used on any other airplanes.

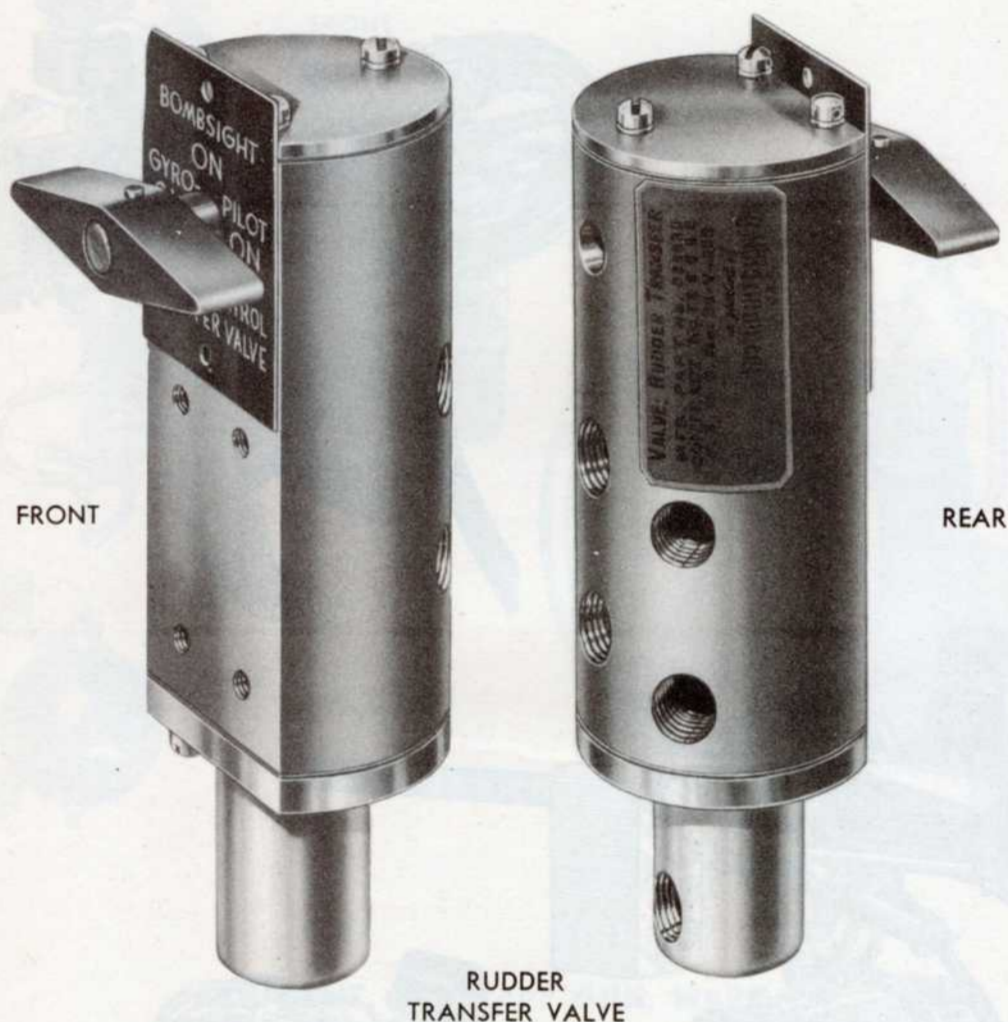
DIMENSIONS: approx. 4.8 x 4.6 x 10.3 inches.

WEIGHT: approx. 4.5 pounds.

PUBLICATION: NAF Report No. IDS-32-42.

NAF DWG: 311199.

VALVE, RUDDER TRANSFER



VALVE, RUDDER TRANSFER, FOR AUTOMATIC PILOT MARK 3

FSSC STOCK No. 88-V-375

BUREAU OF AERONAUTICS COGNIZANCE

THE Rudder Transfer Valve transfers control of the rudder servo from the directional control unit of the automatic pilot to the Rudder Control Unit (FSSC Stock No. 88-C-1425 and 88-C-1427). The assembly is essentially cylindrical in shape having one flat side. A control handle is located on the flat side; on the opposite side are 6 tapped holes for con-

nections to the above units. The valve is mounted on the instrument panel.

DIMENSIONS: approx. 5.0 x 1.7 x 2.1 inches.

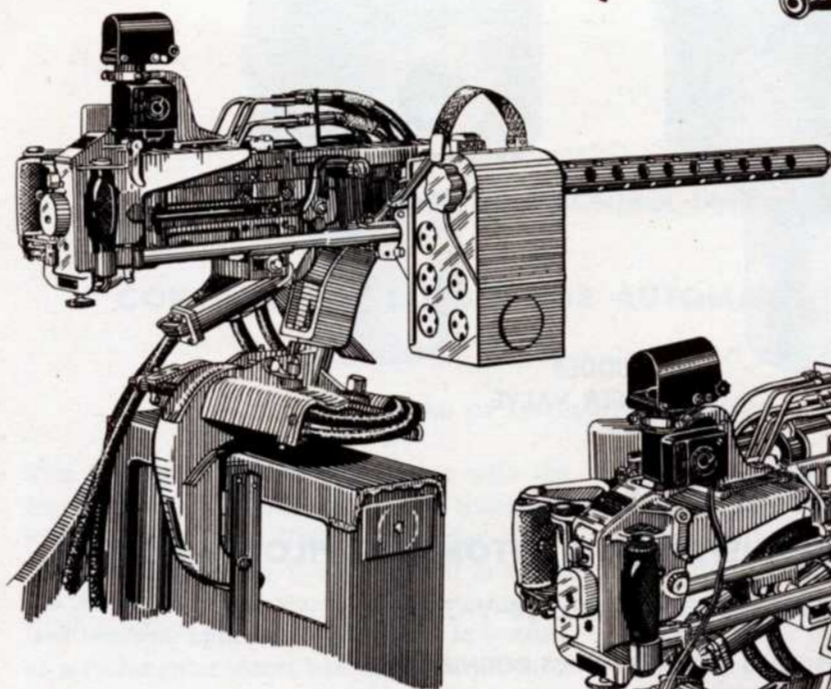
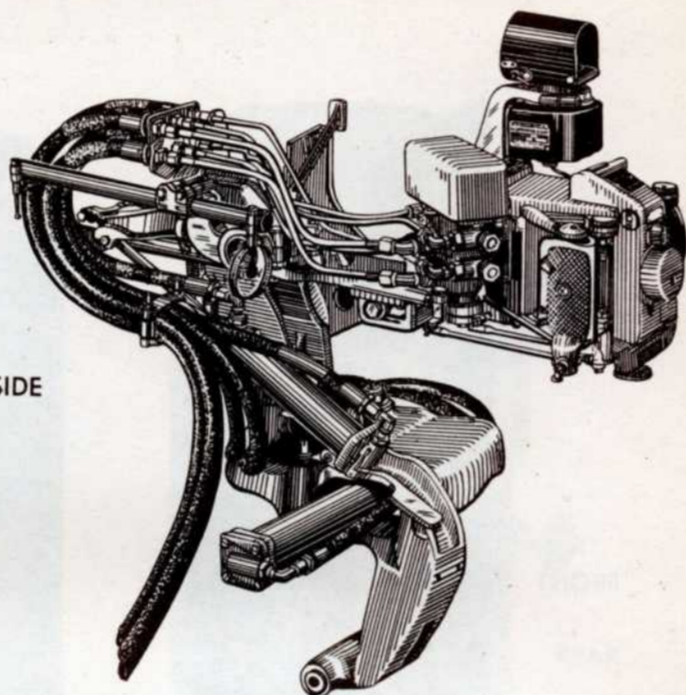
WEIGHT: approx. 0.9 pound.

PUBLICATION: NAF Report No. IDS-32-42.

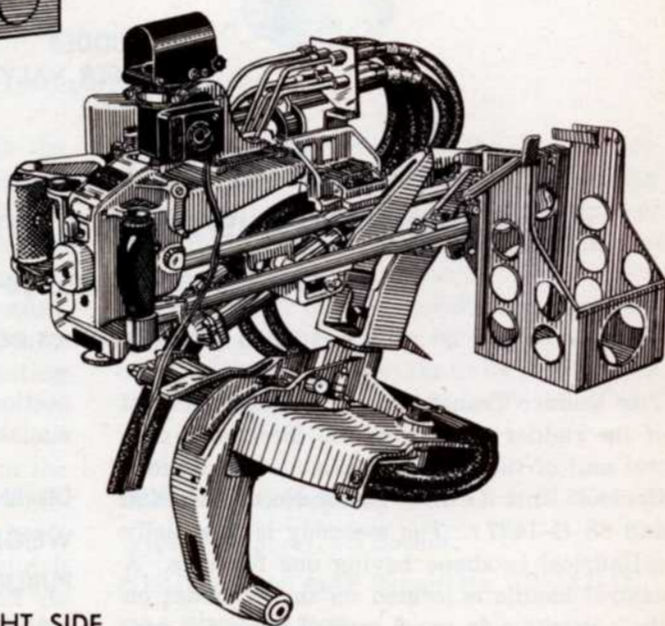
NAF DWG: 48000.

MOUNT, AIRCRAFT GUN, MARK 1

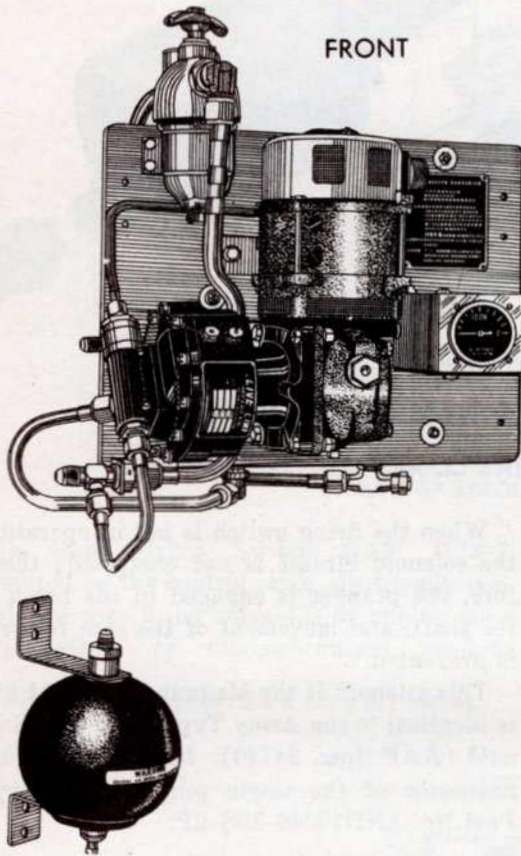
LEFT SIDE



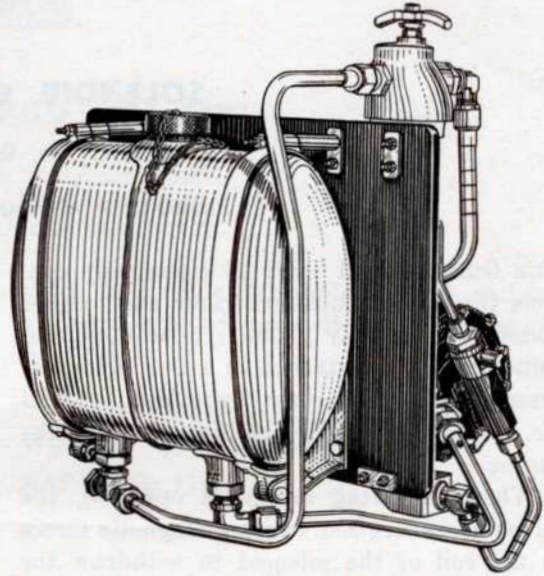
RIGHT SIDE



MOUNT, AIRCRAFT GUN, MARK 1 (CONT'D)



FRONT



REAR

MOUNT, AIRCRAFT GUN, MARK 1

BUREAU OF AERONAUTICS COGNIZANCE

THE Hydraulic Gun Mount Mark 1 is designed to carry a single caliber .50 machine gun. It is used in locally controlled, side waist installations. The mount is hydraulically operated from a separate power unit located near the installation. This unit is capable of supplying hydraulic power for 2 mounts. The photograph above illustrates the power unit used with the first 50 mounts. Later models were equipped with a straight line drive. Each mount has a dumping valve by which the gunner may release the power unit and free the gun for manual operation in case of power failure. Control grips are located at the rear of the mount. The left hand grip

operates a valve to meter the flow of oil to cylinders which control the direction and rate of gun movement. A gun-firing trigger is located in front of the right hand grip. The Illuminated Sight Mark 9 and Mods. is used on this mount. Auxiliary ring and bead sights are also provided.

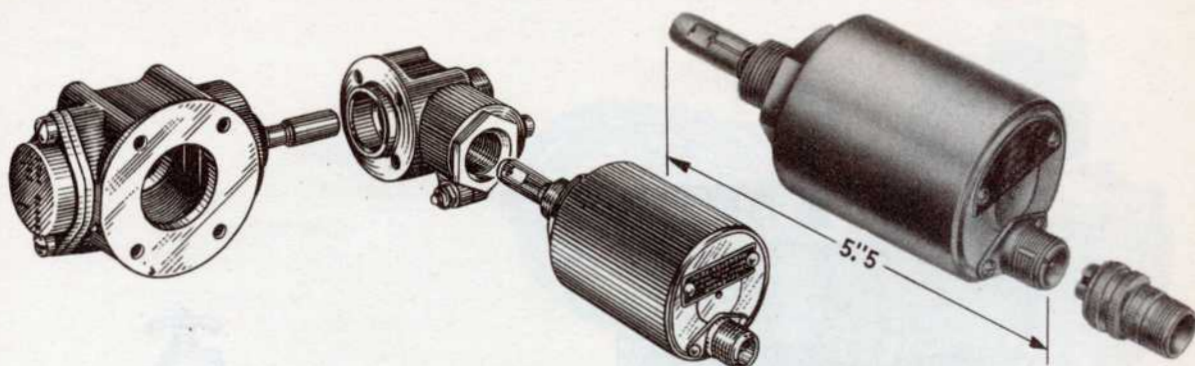
DIMENSIONS:

Gun Mount, approx. 29.0 x 19.0 x 24.0 inches.

Hydraulic power unit, approx. 18.0 x 12.0 x 18.0 inches.

WEIGHT (2 gun mounts and 1 hydraulic power unit): approx. 315 pounds.

SOLENOID, GUN, TYPE 24 AND TYPE 12



SOLENOID, GUN, TYPE 24

FSSC No. R-86-S-60010

BUREAU OF AERONAUTICS COGNIZANCE

THE Gun Solenoid Type 24 electrically controls the gun impulse generator and trigger motor of a remotely placed synchronized machine gun. It is attached to a Gun Synchronizer Impulse Generator Type E-8, (FSSC No. R-86-G-37010) which is mounted on the engine.

When the firing switch is operated, the solenoid is energized, causing magnetic forces in the coil of the solenoid to withdraw the plunger from a notch provided in the shaft of the cam follower in the gun impulse generator. When this plunger is withdrawn, the cam follower is pulled against the cam in the impulse generator. The action of this cam creates timed mechanical impulses which are transmitted by the cable assembly to the trigger motor controlling the firing mechanism of the gun. Impulses are generated and transmitted as long as the firing switch is operated.

When the firing switch is not in operation, the solenoid circuit is not energized; therefore, the plunger is engaged in the notch in the shaft, and movement of the cam follower is prevented.

This solenoid is the Magnavox 14D3G1 and is identical to the Army Type G-10 Gun Solenoid (AAF Spec. 24740). It has an electrical connector of the single pin, screw-on type, Part No. AND10066-10S-2P.

DIMENSIONS: approx. 5.5 x 2.3 x 2.3 inches.

WEIGHT: approx. 2.9 pounds.

OPERATING VOLTAGE: 24-volt DC.

CURRENT DRAIN: 10 amperes.

PLUNGER STROKE: 0.112 inch.

PUBLICATION: AAF Tech. Order 11-1-30.

SOLENOID, GUN, TYPE 12

FSSC No. R-86-S-60000

BUREAU OF AERONAUTICS COGNIZANCE

THE Gun Solenoid Type 12 is similar to the Gun Solenoid Type 24 except that it operates on 12 volts DC.

OPERATING VOLTAGE: 12-volt DC.

CURRENT DRAIN: 20 amperes.

It has Magnavox No. 14D3G2 and is identical to the Army Type E-9 Gun Solenoid (AAF Spec. 24782).

PLUNGER STROKE: 0.112 inch.

PUBLICATION: AAF Tech. Order 11-1-30.

SWITCH, GUN FIRING, NAF 1173-1,-2



SWITCH, GUN FIRING, NAF 1173-1

FSSC STOCK No. R-17-S-35500

BUREAU OF AERONAUTICS COGNIZANCE

THE Gun Firing Switch NAF 1173-1, mounted on the control stick, electrically controls the gun firing solenoids of one or more synchronized or unsynchronized machine

guns. It is made of moulded plastic, and has a squeeze-type trigger switch operated by the forefinger.

DIMENSIONS: approx. 5.3 x 1.6 x 2.1 inches.

WEIGHT: approx. 0.4 pound.

NAF DWG: 1173.



SWITCH, GUN FIRING AND BOMB RELEASE, NAF 1173-2

FSSC STOCK No. R-17-S-35510

BUREAU OF AERONAUTICS COGNIZANCE

THE Gun Firing and Bomb Release Switch, mounted on the control stick of an airplane is used to control the gun firing solenoids of one or more synchronized or unsynchronized machine guns and to operate a bomb release. The control handle, made of moulded plastic, has a squeeze-type trigger switch, operated

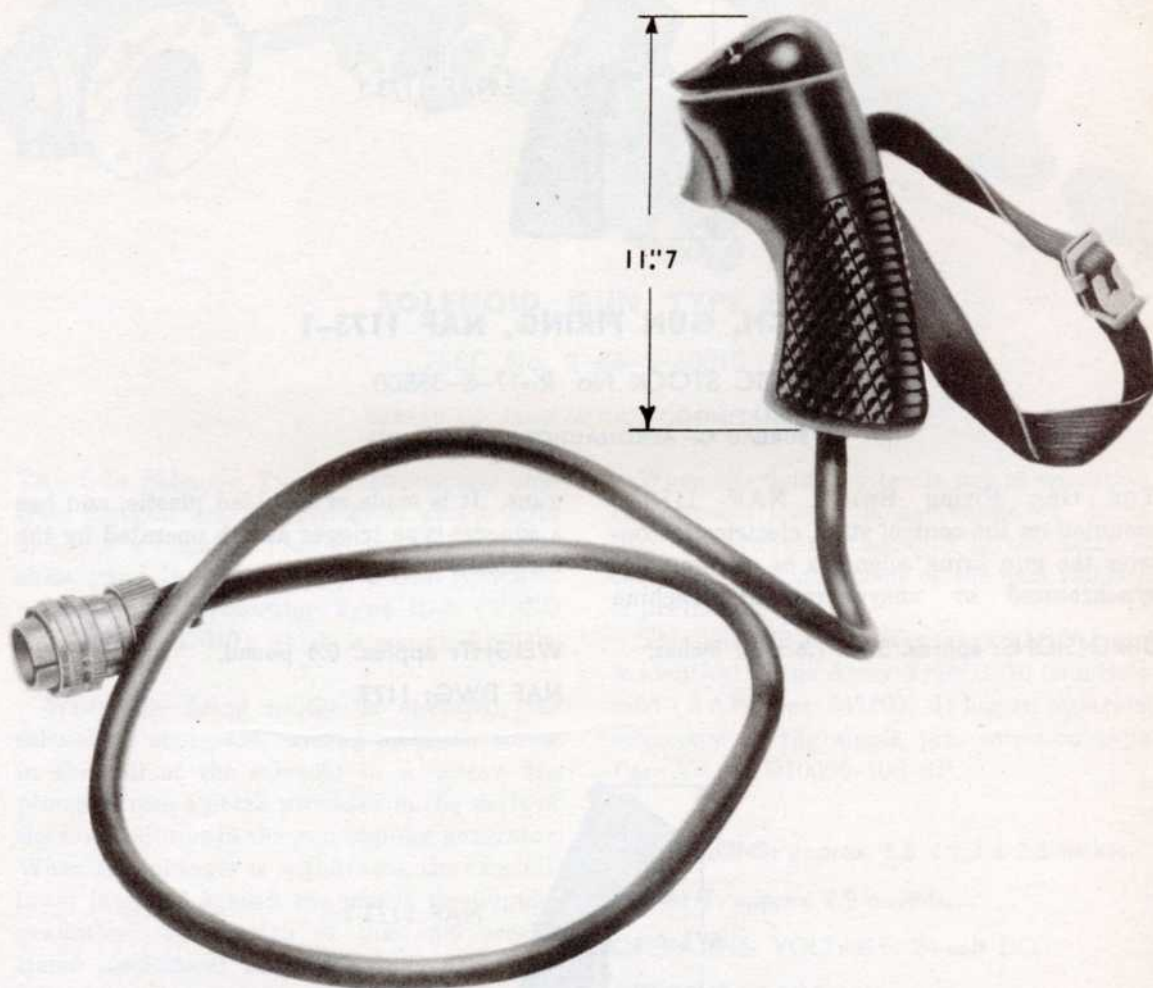
by the forefinger, for firing the guns, and a push-button thumb switch to release bombs.

DIMENSIONS: approx. 5.3 x 1.6 x 2.1 inches.

WEIGHT: approx. 0.5 pound.

NAF DWG: 1173.

KEY, FIRING, NAF 1174-1



KEY, FIRING, NAF 1174-1

FSSC STOCK No. R-17-K-225

BUREAU OF AERONAUTICS COGNIZANCE

THE Firing Key NAF 1174-1 for releasing bombs is a portable unit operated by the fore-finger. It is a moulded plastic hand grip with a strap on one side of the key. This strap fastens the unit to the palm of the hand. A pigtail with an electrical connector at the end

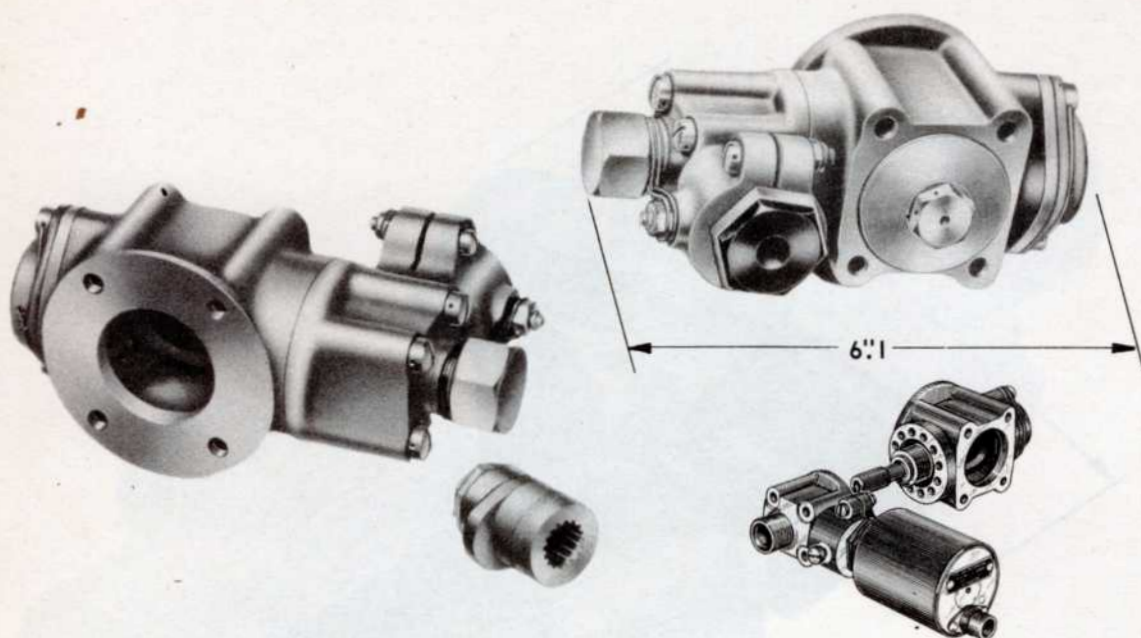
connects the unit to the bomb circuit receptacle.

DIMENSIONS: approx. 4.7 x 2.0 x 1.6 inches.

WEIGHT: approx. 0.5 pound.

NAF DWG: 1174.

GENERATOR, GUN SYNCHRONIZER IMPULSE, TYPE E-8



GENERATOR, GUN SYNCHRONIZER IMPULSE, TYPE E-8

FSSC No. R-86-G-37010

BUREAU OF AERONAUTICS COGNIZANCE

THE Gun Synchronizer Impulse Generator Type E-8 is used to control the fire of one fixed machine gun so that the projectiles will pass between the rotating blades of the propeller.

The generator is used with Impulse Cable Mark 1, Trigger Motor Mark 1, Mod. 1 and Gun Firing Solenoid Type 24.

The generator creates timed mechanical impulses which, transmitted along the impulse cable to the trigger motor, trip the firing mechanism of the gun. The generator is mounted on the airplane engine and contains a cam driven at propeller speed. The number of lobes on the cam depends on the number of propeller blades, 1, 2, or 3-lobe cams are used respectively with 2 or 3-blade, 2 or 4-blade, or 3-blade propellers. A cam follower generates a reciprocating impulse when actuated by each of the lobes. When the gun is not firing, the cam follower is locked away from the cam by a solenoid plunger which engages a notch in the follower. Energizing

the solenoid withdraws the plunger permitting the follower to be pulled against the cam.

The Impulse Generator Type E-8 fits both right and left hand installations and is furnished with 1-, 2-, or 3-lobe cams as required. The number of lobes desired must be specified when ordering.

All Generators Type E-8 are interchangeable; they are identified by the following drawing numbers: Wright-114081; Ranger-7588; AAF Dwg. 38D4828.

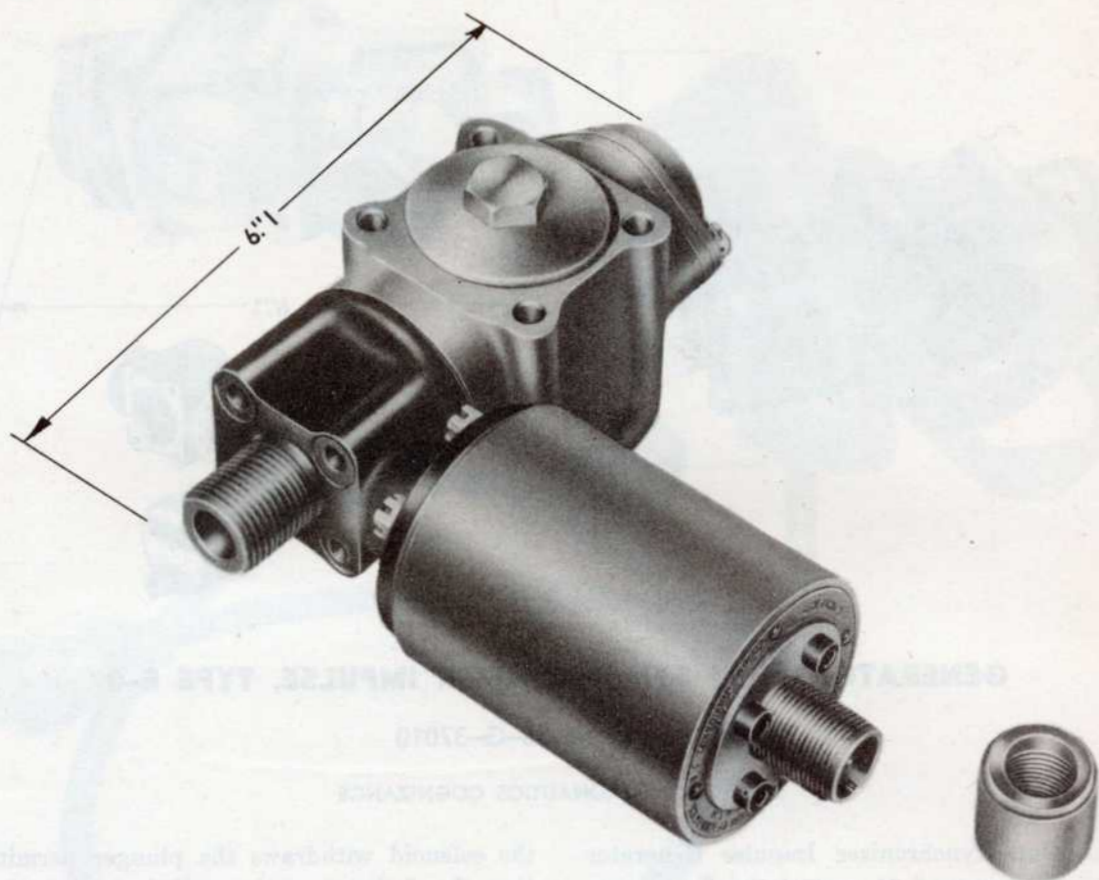
The Zahodiakin Modified E-8 Generator body is also interchangeable with the Standard E-8 body. The heads however, are different.

DIMENSIONS: approx. 6.1 x 3.5 x 3.0 inches.

WEIGHT: approx. 2.3 pounds.

PUBLICATION: BuAER C.L. AER-MA-12431-EG-F41-14.

SYNCHRONIZER, GUN, MODIFIED E-8



SYNCHRONIZER, GUN, MODIFIED E-8

BUREAU OF AERONAUTICS COGNIZANCE

THIS Gun Synchronizer assembly consists of a Zahodiakin Solenoid and Generator Head (FSSC Stock No. R-86-S-60140) and a Gun Synchronizer Impulse Generator modified E-8 (FSSC No. R-86-G-37010). When these units are combined with each other the resulting assembly is interchangeable with an assembly consisting of the Standard Impulse Generator Type E-8 and the Gun Firing Solenoid Type 24 (FSSC No. R-86-S-60010). The individual parts, however, are not interchangeable since the Zahodiakin Solenoid has a generator head bolted to and furnished with

it as a part of the solenoid. The action of the Zahodiakin Solenoid is similar to the Type 24 and performs the same function in releasing the cam follower.

The electrical connector on the solenoid is the single pin screw-on type, Part No. AN3106-12-5S.

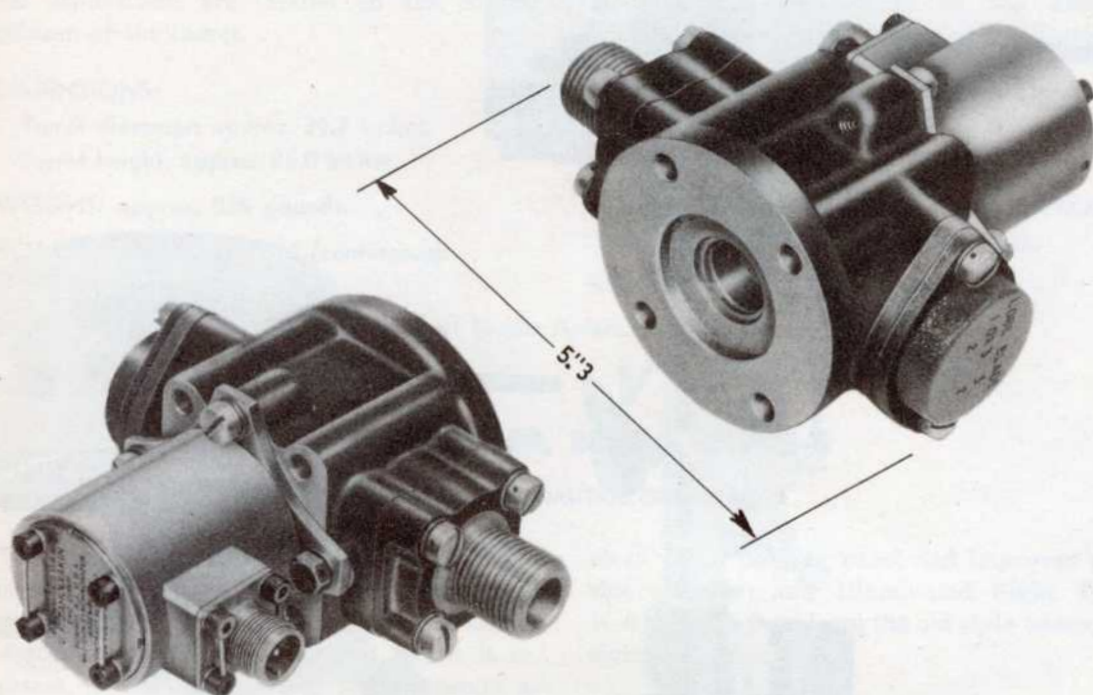
DIMENSIONS: approx. 7.6 x 6.1 x 3.0 inches.

WEIGHT: approx. 4.2 pounds.

OPERATING VOLTAGE: 24-volt DC.

PUBLICATION: AER-MA-12431-EG-F41-14.

SYNCHRONIZER, GUN, MARK 1



SYNCHRONIZER, GUN, MARK 1

BUREAU OF AERONAUTICS COGNIZANCE

THE Gun Synchronizer Mark 1 provides a mechanical means of producing and controlling timed impulses synchronized with the airplane propeller. These impulses actuate the firing mechanism of synchronized guns through the medium of an impulse cable and a trigger motor on the gun.

This assembly is designed for use only on the 1820 series of aircraft engines having a clutch-type synchronizer drive. The device consists of an impulse generator and an electrical control unit. In the generator, the engine synchronizer drive shaft engages projecting clutch teeth on a cam shaft. The rotation of the cam causes the cam follower to create reciprocating movements or impulses. Either 1, 2, or 3-lobe cams are used respec-

tively, with 2 or 3-blade, 2 or 4-blade, or 3-blade propellers.

The electrical control unit is a solenoid mounted on the back end of the generator housing. When it is energized, it causes the cam shaft clutch teeth to project and engage the engine drive shaft, thereby causing rotation of the cam. The solenoid is electrically connected to the gun firing switch.

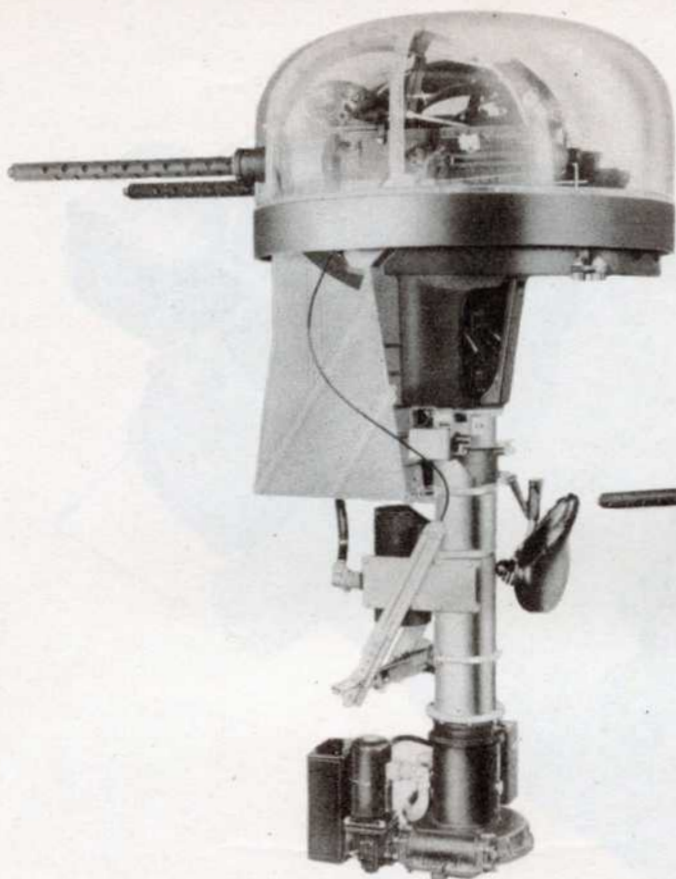
DIMENSIONS: approx. 5.3 x 2.9 x 4.4 inches.

WEIGHT: approx. 3.3 pounds.

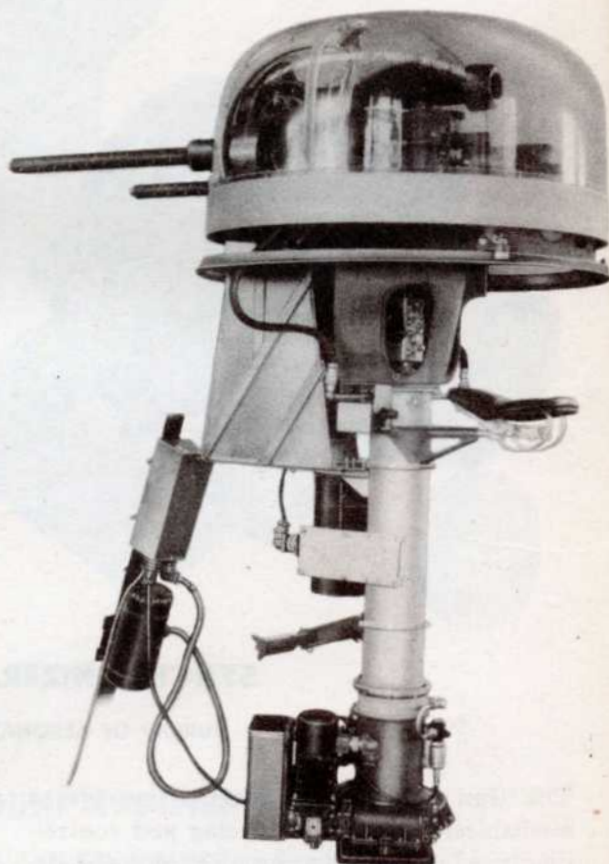
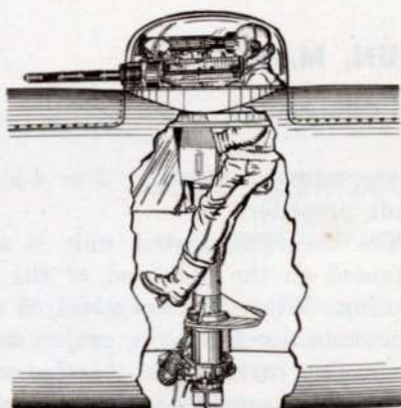
VOLTAGE: 24-volt DC.

MFR'S DWG: Zahodiakin Engineering Corporation Z-400.

TURRET, UPPER, BENDIX 250CE-1,-3,-4



BENDIX 250 CE-3



BENDIX 250 CE-1

TURRET, UPPER, BENDIX 250CE-1

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Bendix 250CE-1 is the AAF Type A-9. It is used on the upper deck of PBJ-1 aircraft. The turret mounts 2 caliber .50 machine guns, and is amplidyne-driven.

The gunner sits on a bicycle-type seat and has an adjustable foot rest. A telescopic sight, whose prism moves with the guns, has its own window panel in the dome. Guns are charged by Bendix hydraulic chargers, and

TURRET, UPPER, BENDIX 250CE-1,-3,-4 (CONT'D)

fired by pressing a trigger switch on the turret control grip. Oxygen, hydraulic, and electrical connections are located on the central column of the turret.

DIMENSIONS:

Turret diameter, approx. 39.7 inches.

Turret height, approx. 86.0 inches.

WEIGHT: approx. 525 pounds.

ROTATION IN AZIMUTH (continuous):
360 degrees.

MFR'S DWG: Bendix Products Division of Bendix Aviation Corporation, 80701.

Bendix 250CE-1 Turret Service Change No. 1 (1/25/44) ordered the conversion of Bendix 250CE-1 turrets to the Bendix 250CE-3. This is listed under publications.

ELEVATION OF GUNS: 84 degrees above horizontal.

VOLTAGE: 28-volt DC.

PUBLICATIONS: AAF Tech. Order 11-45A-3;
BuAER C.L. AER-E328-PAW-12140.

MFR'S MODEL: N.

TURRET, UPPER, BENDIX 250CE-3

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Bendix 250CE-3 is the AAF Turret Type A-9A. It is used on the upper deck of PBJ-1 aircraft and is similar to the Bendix 250CE-1 which it replaces. It includes several improvements as follows: the gunner's bicycle-type seat can be folded; mechanical foot-chargers replace the hydraulic-type; a new dome is provided with

clear vision sighting panel and improved gun slot closures; and Illuminated Sight Type N-6 or Mark 9 replaces the old style telescopic sight.

MFR'S MODEL: A.

MFR'S DWG: Bendix Products Division of Bendix Aviation Corporation, 82000.

TURRET, UPPER, BENDIX 250CE-4

BUREAU OF AERONAUTICS COGNIZANCE

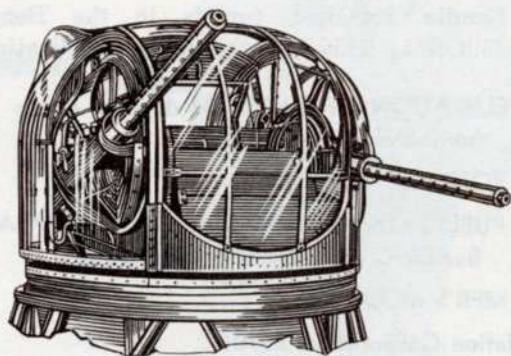
THE Upper Turret Model Bendix 250CE-4 is the AAF Turret Type A-9B. It is similar to the Bendix 250CE-3 except it uses profile type gunfire interrupters and contour followers in

place of the old wafer type. Changes have been made in the ammunition feed and in the structural design of the turret.

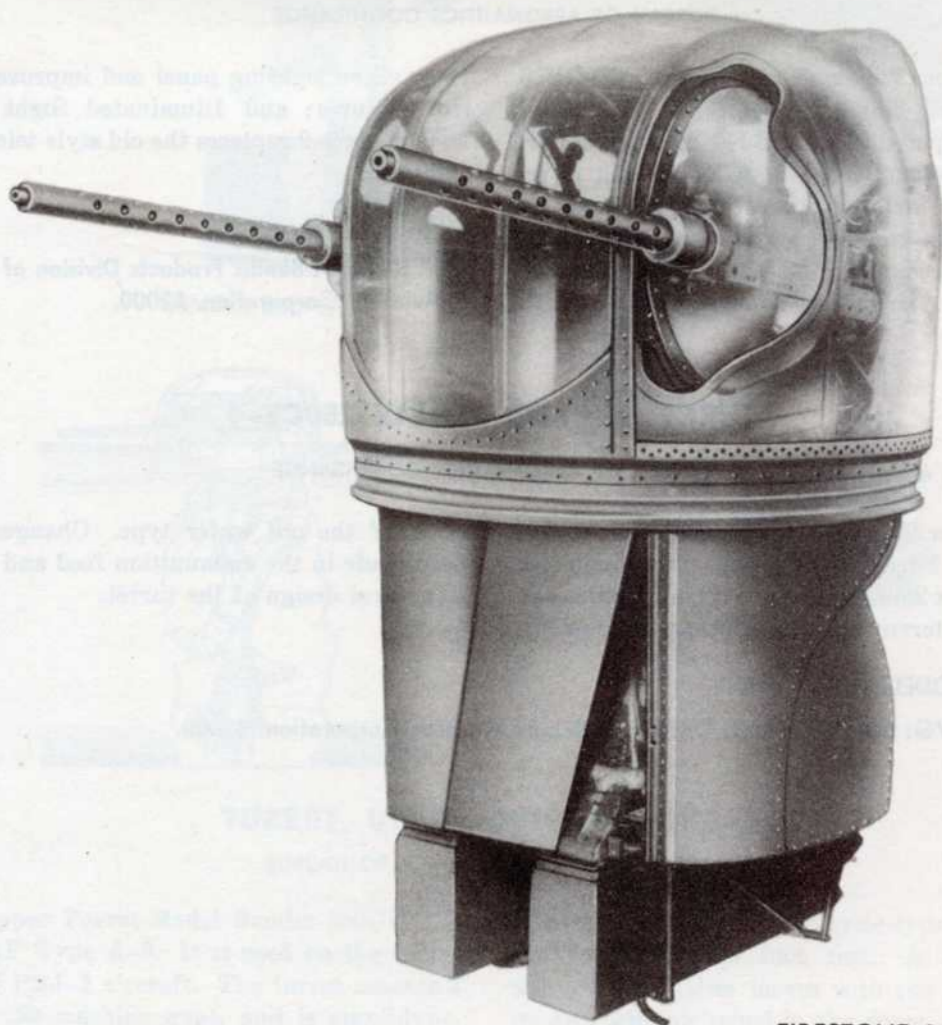
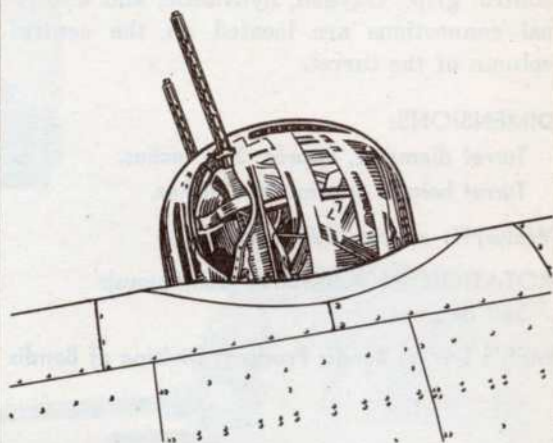
MFR'S MODEL: R.

MFR'S DWG: Bendix Products Division of Bendix Aviation Corporation, 82600.

TURRET, UPPER, FIRESTONE 250CH-4,-5



GUN INDIVIDUALLY ELEVATED TO CLEAR
A CONTOUR OBSTRUCTION



FIRESTONE 250 CH-4

TURRET, UPPER, FIRESTONE 250CH-4, -5 (CONT'D)

TURRET, UPPER, FIRESTONE 250CH-4

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Firestone 250CH-4 is scheduled for use in the forward deck position on late models of the PB4Y-2 aircraft. The turret mounts 2 caliber .50 machine guns and will be hydraulically operated by a Sundstrand Drive Mark 2. The unique part of this turret is that each gun is individually and automatically elevated and then depressed to clear any obstructing portion of the airplane structure as the turret rotates.

The turret is equipped with armor plate that extends from above the gunner's head to his feet. A window de-icing sprayer, train position indicator, and Illuminated Sight Mark 9 are other features. Later serial numbers of this turret will carry the Gun Sight Mark 18.

In case of power failure auxiliary foot firing and manual control of the turret are provided. Ammunition is fed to the guns from

boxes in the bottom of the turret by means of flexible chuting.

The gunner enters this turret from below. Diluter demand type oxygen equipment is included.

DIMENSIONS:

Turret diameter, approx. 43.0 inches.

Turret height, approx. 70.0 inches.

WEIGHT (less gunner): approx 890 pounds.

ROTATION IN AZIMUTH: continuous.

ELEVATION OF GUNS: from 10 degrees below to 80 degrees above horizontal.

OPERATING PRESSURE: approx. 300 pounds per square inch.

MFR'S DWG: Emerson Electric Manufacturing Co., 332053.

TURRET, UPPER, FIRESTONE 250CH-5

BUREAU OF AERONAUTICS COGNIZANCE

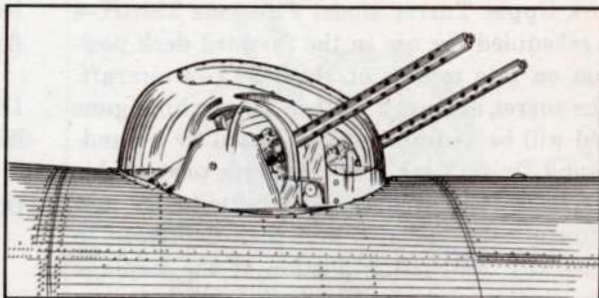
THE Upper Turret Model Firestone 250CH-5 is scheduled for use in the after deck position on late models of the PB4Y-2 aircraft. This

turret is the same as the Firestone 250CH-4, except for a change in the profile gun fire interrupter and contour follower.

MFR'S DWG: Emerson Electric Manufacturing Co., Installation 332053.

TURRET, UPPER, MARTIN 250CE-5,-7,-12,-13,-15,-16,-17

MARTIN 250 CE-15



TURRET, UPPER, MARTIN 250CE-5

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CE-5 is an AAF Turret Type A-3C used in the upper deck position on PB4Y-1 aircraft. The turret mounts 2 caliber .50 machine guns, and is amplidyne-driven. It incorporates Frazer-Nash style hand grips, manual turret control in case of power failure, and profile gun fire interrupters. The gunner sits in a bucket-type seat and is provided with an adjustable foot rest. An Illuminated Sight Type N-6A or Mark 9 which elevates with the guns, is used for sighting. Guns are charged individually by manual chargers, and fired by pressing a trigger switch on the turret control grips. A swivel joint located on the floor of the airplane is used for oxygen and interphone connections.

This turret replaced the now obsolete Model Martin 250CE-3A.

DIMENSIONS:

Turret diameter, approx. 41.0 inches.

Turret height, approx. 60.0 inches.

WEIGHT (less gunner): approx 929 pounds.

ROTATION IN AZIMUTH: 360 degrees
(continuous).

ELEVATION OF GUNS: from 3 degrees below to
85 degrees above horizontal.

VOLTAGE: 28-volt DC.

PUBLICATION: AAF Tech. Order 11-45 BB-1.

MFR'S DWG: Glenn L. Martin Company,
250CE50.

TURRET, UPPER, MARTIN 250CE-7

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CE-7 is an AAF Turret Type A-3C used in the upper deck of PV-1 aircraft. It is similar to the Martin 250CE-5, and has the same equipment but uses a different profile gun fire interrupter.

Martin 250CE-7 Turret Service Change No. 1 (1/2/44) converted all 250CE-7 turrets to Martin 250CE-12 turrets.

MFR'S DWG: Glenn L. Martin Co., 250CE70.

TURRET, UPPER, MARTIN 250CE-5,-7,-12,-13,-15,-16,-17 (CONT'D)

TURRET, UPPER, MARTIN 250CE-12

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CE-12 is used on the upper deck of PV-1 aircraft. This turret uses the same profile gun fire interrupters as the Martin 250CE-7, but is an

improved version of this turret. It carries face armor, and has auxiliary foot firing in case of power failure. The Illuminated Sight Mark 9 or Mods. is used in this turret.

WEIGHT (less gunner): approx. 1058 pounds.

MFR'S DWG: Glenn L. Martin Co., 250CE120.

TURRET, UPPER, MARTIN 250CE-13

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CE-13 is used on the upper deck of PV-2 aircraft. This turret is the same as the Martin 250CE-12, except for a different contour follower and gun fire interrupter. Later serial numbers will provide for diluter demand oxygen equipment.

It is also expected these later serial numbers will have provisions for a command type interphone system and the Gun Sight Mark 18.

MFR'S DWG: Glenn L. Martin Co., 250CE130.

TURRET, UPPER, MARTIN 250CE-15

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CE-15 is used on the upper deck of later serials of PB4Y-1 aircraft. This turret is the same as the Martin 250CE-5, except for the addition

of a clear vision, or minimum deviation dome, a Fairchild Computing Sight Type K-8, and other minor changes. The profile type gun fire interrupters are the same.

MFR'S DWG: Glenn L. Martin Company, 250CE150.

TURRET, UPPER, MARTIN 250CE-16

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CE-16 is used on the upper forward deck position of PB4Y-2 aircraft. The turret is the same as the Martin 250CE-13 except for a change

in the gun fire interrupter and contour follower and the addition of a clear vision (minimum variation deviation) sighting panel in the dome.

MFR'S DWG: Glenn L. Martin Co., 250CE160.

TURRET, UPPER, MARTIN 250CE-17

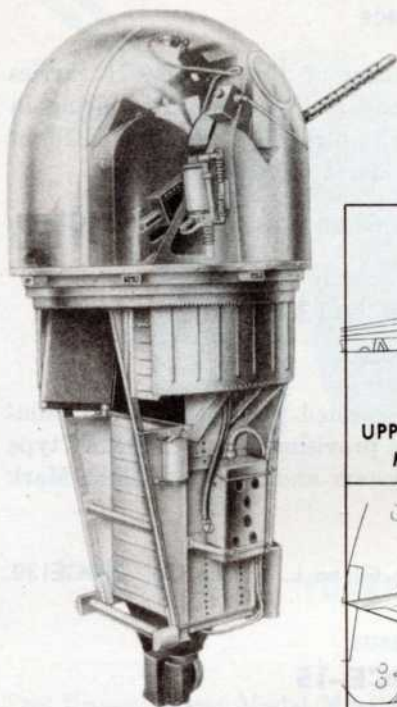
BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CE-17 is used on the upper after deck position of PB4Y-2 aircraft. The turret is the same as

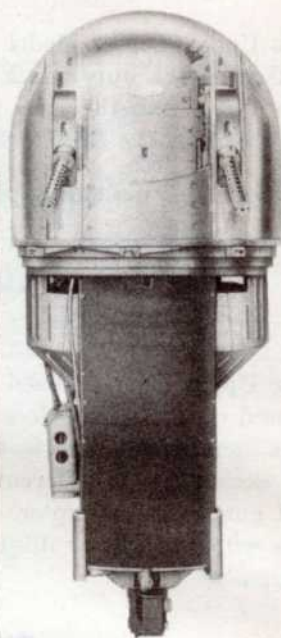
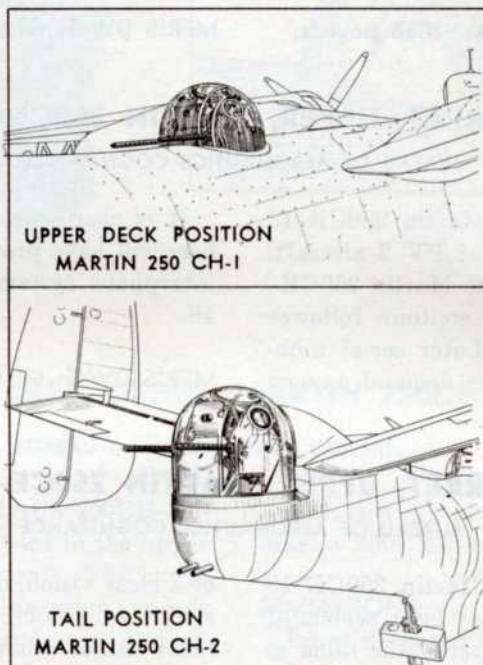
the Martin 250CE-16, except for a change in the gun fire interrupter and contour follower.

MFR'S DWG: Glenn L. Martin Co., 250CE170.

TURRET, UPPER AND TAIL MARTIN 250CH-1,-1B,-2,-2B,-3



SIDE MARTIN 250 CH-3



FRONT MARTIN 250 CH-3

TURRET, UPPER, MARTIN 250CH-1

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CH-1 is used on the upper deck of PBM-3C, PBM-3D, and some PBM-5 aircraft. The turret mounts 2 caliber .50 machine guns, and is hydraulically-powered by a Vickers drive. It incorporates emergency manual control in azimuth only, and has a profile gun fire interrupter. The gunner sits behind armor

plate, and uses an Illuminated Sight Mark 9. Ammunition boxes which are protected by armor, are located below the turret floor. Guns are charged hydraulically by Interstate gun chargers, and fired by pressing a trigger switch on the turret control grips.

There is no oxygen equipment with this turret.

DIMENSIONS:

Turret diameter, approx. 44.0 inches.

Turret height, approx. 101.4 inches.

WEIGHT (less gunner): approx. 1240 pounds.

ROTATION IN AZIMUTH (continuous): 360 degrees.

ELEVATION OF GUNS: 20 degrees below to 80 degrees above horizontal.

OPERATING PRESSURE: approx. 800 pounds per square inch.

MFR'S DWG: Glenn L. Martin Co., 162C861.

TURRET, UPPER AND TAIL MARTIN 250CH-1,-1B,-2,-2B,-3 (CONT'D)

TURRET, UPPER, MARTIN 250CH-1B

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CH-1B is scheduled for use on the upper deck of PBM-5 aircraft. This turret will be the same as the Martin 250CH-1 except that electric gun chargers replace the hydraulic chargers.

In case of power failure there is auxiliary foot firing and manual control of the turret

in both azimuth and elevation.

WEIGHT (less gunner): approx. 1147 pounds.

NOTE.—A turret designated as the 250CH-1C will follow the 250CH-1B. This new turret will be the same as the 250CH-1B, but with the addition of a command-type interphone system and a Gun Sight Mark 18.

TURRET, TAIL, MARTIN 250CH-2

BUREAU OF AERONAUTICS COGNIZANCE

THE Tail Turret Model Martin 250CH-2 is located in the tail of PBM-3C, PBM-3D and some PBM-5 aircraft. This turret, from the mounting ring up, is the same as the Martin 250CH-1, except in elevation and depression of the guns, as indicated in the data below.

The lower armor plate and self-contained ammunition boxes have been eliminated, and an outside source of ammunition, continuously fed from the fuselage has been installed. The turret has no slip-rings or fire inter-rupter, but incorporated limit stops.

DIMENSIONS:

Turret diameter, approx. 44 inches.

Turret height, approx. 62.4 inches.

WEIGHT (less gunner): approx. 710 pounds.

ROTATION IN AZIMUTH: 70 degrees either side of center.

ELEVATION OF GUNS: from 45 degrees below to 60 degrees above horizontal.

OPERATING PRESSURE: approx. 800 pounds per square inch.

MFR'S DWG: Glenn L. Martin Co., 162C865.

TURRET, TAIL, MARTIN 250CH-2B

BUREAU OF AERONAUTICS COGNIZANCE

THE Tail Turret Model Martin 250CH-2B is scheduled for use in the tail of PBM-5 airplanes. This turret will be similar to the Martin 250CH-2 with the addition of electric gun chargers and command interphone. Auxiliary foot firing and manual control of the turret in azimuth and elevation are provided

in case of power failure.

WEIGHT (less gunner): approx. 700 pounds.

NOTE.—A turret designated as the Martin 250CH-2C will follow the 250CH-2B. This new turret will be the same as the 250CH-2B, but with the addition of a Sundstrand drive and a Gun Sight Mark 18.

TURRET, UPPER, MARTIN 250CH-3

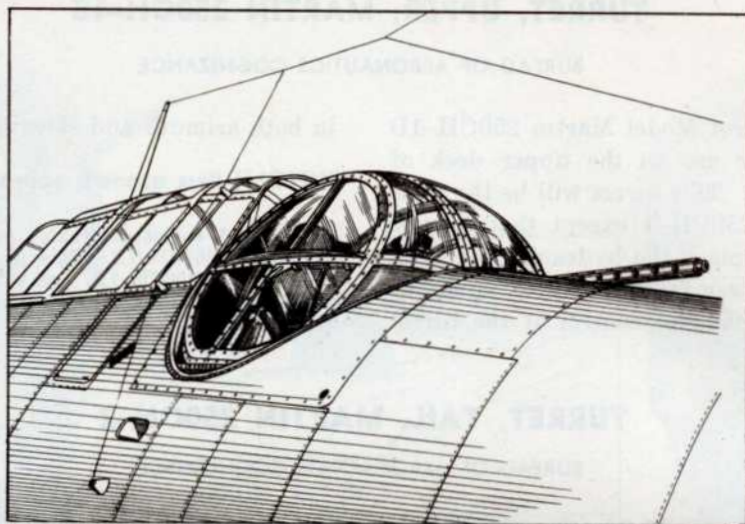
BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Martin 250CH-3 is used on the upper deck of PB2Y-3 aircraft. The turret is the same as the Martin 250CH-1,

but uses a different profile gun fire inter-rupter. Oxygen equipment is provided in this turret.

MFR'S DWG: Glenn L. Martin Co., 250CH30.

TURRET, UPPER, GRUMMAN 150SE-1 AND 150SE-2



TURRET, UPPER, GRUMMAN 150SE-1

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Grumman 150SE-1 is used on the upper deck of TBF-1, TBM-1, and TBM-1C airplanes. This turret mounts one caliber .50 machine gun, and is amplidyne-operated. The control is a single movable right hand grip with stationary left hand grip containing the dead man switch. The

gunner sits behind armor plate and uses an Illuminated Sight Mark 9. The gun is charged manually and fired by pressing a trigger switch on the control grip.

The turret uses a block type gunfire interrupter.

DIMENSIONS:

Turret diameter, approx. 48.5 inches.

Turret height, approx. 66.5 inches.

WEIGHT (less gunner): approx. 645 pounds.

ROTATION IN AZIMUTH (continuous): 360 degrees.

ELEVATION OF GUNS: from 30 degrees below to 85 degrees above horizontal.

VOLTAGE: 24-volt DC.

PUBLICATION: Airplane Erection and Maintenance Manual, Grumman Aircraft Engineering Corporation, Bethpage, N. Y.

MFR'S DWG: Grumman Aircraft Engineering Corporation, 21756.

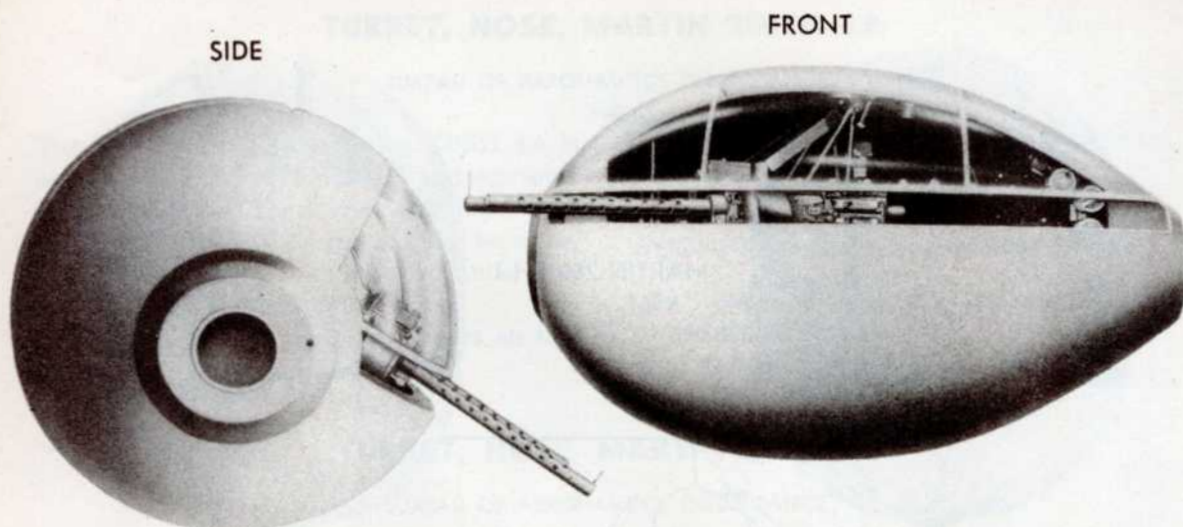
TURRET, UPPER, GRUMMAN 150SE-2

BUREAU OF AERONAUTICS COGNIZANCE

THE Upper Turret Model Grumman 150SE-2 is also used on the upper deck of TBF-1C, TMB-1, and TBM-1C aircraft. This turret is similar in appearance to the Grumman 150SE-1, but has the following changes: A new type G.E. amplidyne-drive powers the turret. A new type junction box has been

installed behind the seat replacing the old box located under the gun mount adapter. A single right hand control grip, with the left hand grip eliminated, now incorporates the dead man switch. A profile type gunfire interrupter replaces the old style block type formerly used.

TURRET, WAIST, ERCO 250TH-1,-2



ERCO 250 TH-2

TURRET, WAIST, ERCO 250TH-1

BUREAU OF AERONAUTICS COGNIZANCE

THE Right Hand Waist Turret Model Erco 250TH-1 is used in the starboard side waist position on PB4Y-2 aircraft. The turret is a teardrop design mounting 2 caliber .50 machine guns. The guns traverse the teardrop from one end to the other in azimuth and the entire unit rotates on its longitudinal axis for movement in elevation. The turret is hydraulically driven by a Vickers drive. Gun fire interrupters and mechanical limit stops are included. In case of power failure, manual control of the turret is provided. An Illuminated Sight Mark 9 or Mods. is used in early serial numbers, but the Gun Sight Mark 18 will be included in the remaining turrets.

Ammunition is continuously fed to the turret through the after trunnion from an outside source in the fuselage.

This turret has facilities for diluter demand

type oxygen equipment. Later serial numbers will carry the command interphone system.

DIMENSIONS:

Diameter at forward end, approx. 17.4 inches.
Diameter at after end, approx. 15.7 inches.
Diameter at center, approx. 54.2 inches.
Length, approx. 89.0 inches.

WEIGHT (less gunner): approx. 735 pounds.

AZIMUTH COVERAGE: 90 degrees aft to 48 degrees forward.

ELEVATION COVERAGE: 47 degrees up and 95 degrees down.

OPERATING PRESSURE: approx. 1100 pounds per square inch.

MFR'S DWG: Engineering and Research Corporation 6026-108.

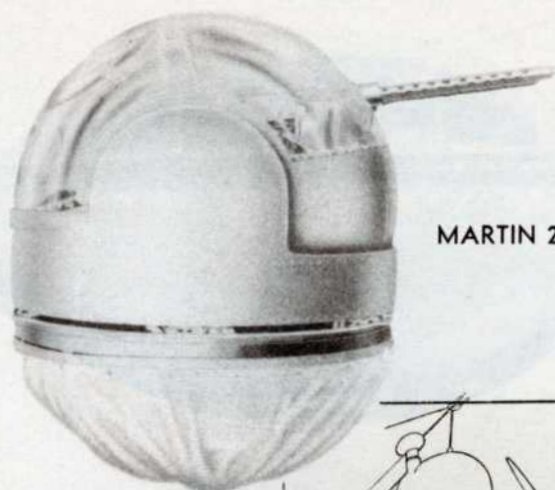
TURRET, WAIST, LEFT HAND, ERCO 250TH-2

BUREAU OF AERONAUTICS COGNIZANCE

THE Left Hand Waist Turret Model Erco 250TH-2 is a mirror image of the Erco

250TH-1. It is used in the port side waist position on PB4Y-2 aircraft.

TURRET, NOSE, MARTIN 250SH-1,-1A,-2,-3

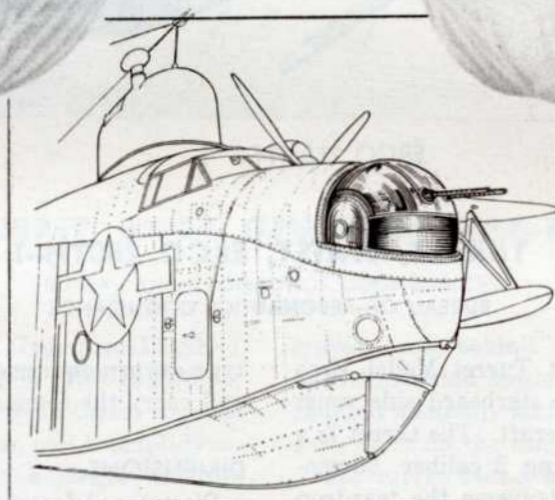


MARTIN 250 SH-1



SIDE

FRONT



TURRET, NOSE, MARTIN 250SH-1

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Martin 250SH-1 was formerly used in the bow of PBM-3C aircraft. The turret mounts 2 caliber .50 machine guns, and is operated hydraulically by a Vickers drive. The turret has an emergency hand pump for manual operation in case of electrical power failure.

The gunner sits in an adjustable seat, and sights the target with an Illuminated Sight Mark 9 or Mods. Guns are charged manually and fired by pressing a trigger switch on the control grips.

This turret is obsolete for use on aircraft and is now used at schools for gunnery training.

DIMENSIONS:

Turret diameter, approx. 54.0 inches.

Turret height, approx. 66.0 inches.

WEIGHT (less gunner): approx. 1042 pounds.

ROTATION IN AZIMUTH: 90 degrees either side of center position.

ELEVATION OF GUNS: 33 degrees below and 80 degrees above horizontal.

(By tilting turret ring in aircraft 15 degrees, air-plane coverage is changed to 48 degrees and 65 degrees respectively.)

OPERATING PRESSURE: approx. 1100 pounds per square inch.

MFR'S DWG: Glenn L. Martin Co., 162C860.

TURRET, NOSE, MARTIN 250SH-1,-1A,-2,-3 (CONT'D)

TURRET, NOSE, MARTIN 250SH-1A

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Martin 250SH-1A is used in the bow of PBM-3D and on some PBM-5 aircraft. The turret is similar to the Martin 250SH-1. The gun saddle, however, is stronger, and Interstate hydraulic gun chargers replace the manual type.

There are no gun fire interrupters on this

turret, but mechanical azimuth limit stops are included.

WEIGHT (less gunner): approx. 1089 pounds.

MFR'S DWG: Glenn L. Martin Company,
162C860 Revised.

TURRET, NOSE, MARTIN 250SH-2

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Martin 250SH-2 is used in the bow of PB2Y-3 aircraft. The turret is the same as the Martin 250SH-1, except that the canvas drain bag below the turret has been replaced with a metal drain

trough, and the azimuth limit stops are in a different location. Provision for rebreather type oxygen is included.

MFR'S DWG: Glenn L. Martin Co., 250SH20.

TURRET, NOSE, MARTIN 250SH-3

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Martin 250SH-3 is used in the bow of PBM-5 aircraft. This turret is similar in dimensions to the Martin 250SH-1A, but has been redesigned internally. A command type interphone system is provided. Ammunition boxes are now on the side. Electric gun chargers replace the former hydraulic chargers, and auxiliary foot firing and manual control of the turret in

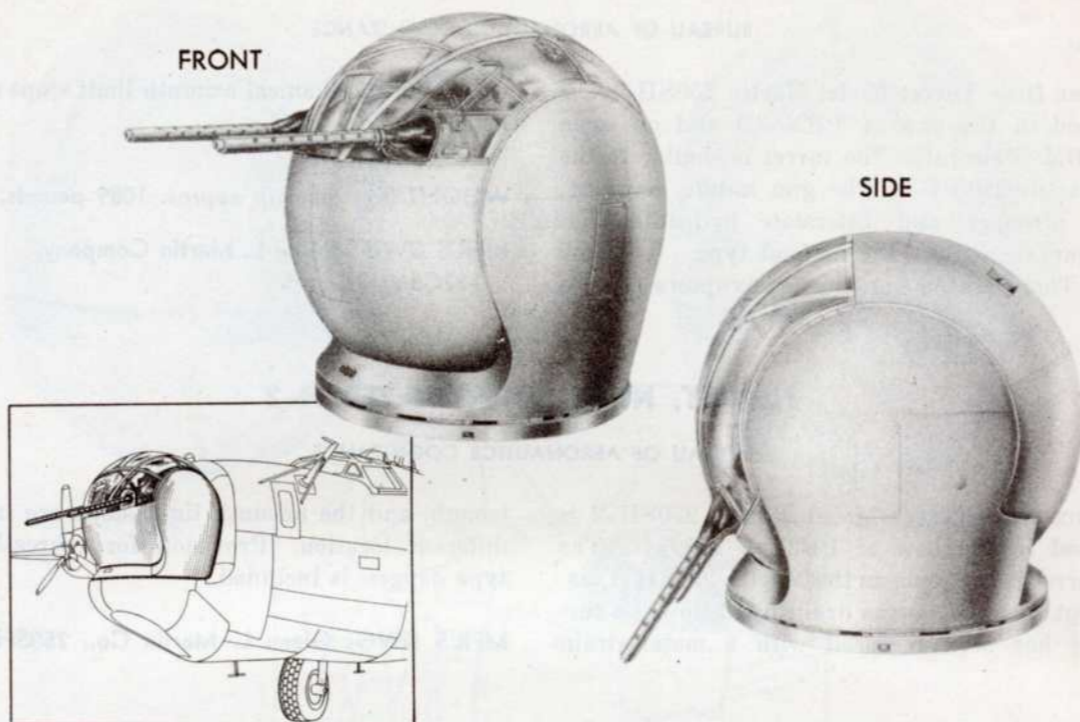
azimuth and elevation are provided in case of power failure.

WEIGHT (less gunner): approx. 1047 pounds.

MFR'S DWG: Glenn L. Martin Co., Proposal
Dwg. 162DK-86534.

NOTE.—A turret designated as the Martin 250SH-3A will follow the 250SH-3. This new turret will be the same as the 250SH-3, but with the addition of a Sundstrand drive and a Gun Sight Mark 18.

TURRET, NOSE, ERCO 250SH-2,-2A,-2B,-2C,-3,-3A,-3B



ERCO 250 SH-2

TURRET, NOSE, ERCO 250SH-2

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Erco 250SH-2 is used in the nose of PB4Y-1 aircraft. The turret mounts 2 caliber .50 machine guns and is hydraulically-powered by a Vickers drive. In case of electrical power failure, hydraulic power is obtained by means of a hand pump. Armor plate protects the gunner's lower body, while his face is protected by a face plate of bullet-proof glass as he sights with an Illuminated Sight Mark 9 or Mods. A clear vision panel in the plexiglass dome minimizes refraction errors. Guns are charged individually by manual chargers, and fired by pressing a trigger switch on the turret control grips. There are no fire interrupters on this turret. Azimuth movement is limited by the limit motion control. When the limit of train is reached, a hydraulic contour following mechanism tends to reverse the control grips

back to the neutral position, causing the turret to stop depressing.

Diluter demand type oxygen and interphone equipment are provided.

DIMENSIONS:

Turret diameter, approx. 54.0 inches.

Turret height, approx. 54.0 inches.

WEIGHT (less gunner): approx. 1130 pounds.

ROTATION IN AZIMUTH: 90 degrees either side of forward.

ELEVATION OF GUNS: from 70 degrees below to 85 degrees above horizontal.

OPERATING PRESSURE: approx. 1000 pounds per square inch.

MFR'S DWG: Engineering and Research Corporation 6001-47.

TURRET, NOSE, ERCO 250SH-2, -2A, -2B, -2C, -3, -3A, -3B (CONT'D)

TURRET, NOSE, ERCO 250SH-2A

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Erco 250SH-2A is the same turret as the Erco 250SH-2, except it has AN standard hydraulic fittings through-

out instead of the combination of Parker and AN fittings used in the Erco 250SH-2.

TURRET, NOSE, ERCO 250SH-2B

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Erco 250SH-2B is the same turret as the Erco 250SH-2A, ex-

cept for the substitution of a Gun Sight Mark 18 for the Illuminated Sight Mark 9 or Mods.

TURRET, NOSE, ERCO 250SH-2C

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Erco 250SH-2C is the same turret as the Erco 250SH-2B, with

the addition of a command interphone system.

TURRET, NOSE, ERCO 250SH-3

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Erco 250SH-3 is used in the nose of PB4Y-2 aircraft. The

turret is identical to the Erco 250SH-2A.

TURRET, NOSE, ERCO 250SH-3A

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Erco 250SH-3A is the same turret as the Erco 250SH-3, except

for the substitution of a Gun Sight Mark 18 for the Illuminated Sight Mark 9 or Mods.

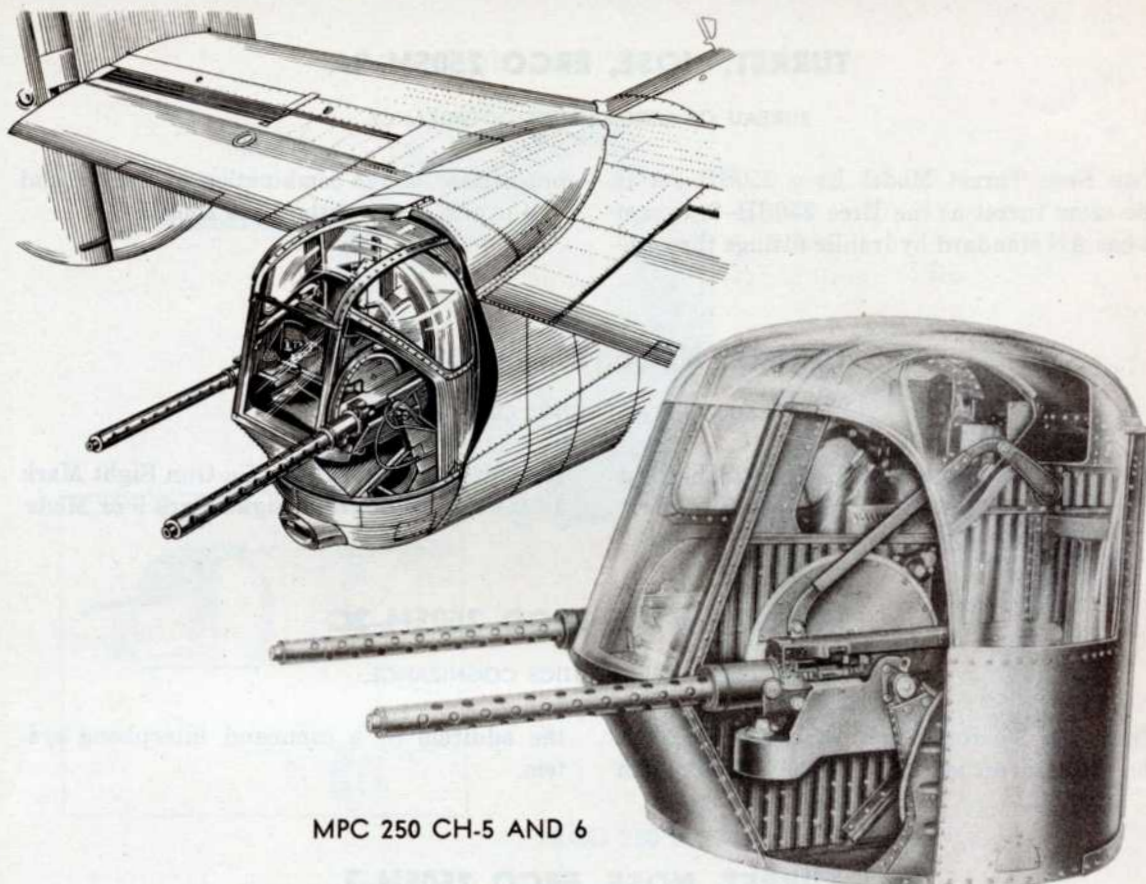
TURRET, NOSE, ERCO 250SH-3B

BUREAU OF AERONAUTICS COGNIZANCE

THE Nose Turret Model Erco 250SH-3B is the same turret as the Erco 250SH-3A, with

the addition of a command interphone system.

TURRET, TAIL, CONSAIR 250CH-3,-4, MPC 250CH-5,-6



MPC 250 CH-5 AND 6

TURRET, TAIL, CONSAIR 250CH-3

BUREAU OF AERONAUTICS COGNIZANCE

THE Tail Turret Model Consair 250CH-3 is the AAF Turret Type A-6 used in the tail of PB4Y-1 aircraft. The turret mounts 2 caliber .50 machine guns, and is hydraulically-driven from an actuating mechanism located outside the turret. It is rotated by 2 cables on a hydraulic drum in the base of the turret. A hydraulic jack elevates and depresses the guns. In the event of power failure, the turret may be moved manually. The gunner enters the turret from the back and is protected by armor plate and bullet proof glass. The Illuminated Sight, Type N-6 or Mark 9, is used with this turret. Guns are charged hydraulically by Bendix gun chargers and fired by pressing a trigger switch on the turret control grip. Provisions for oxygen equipment are provided.

This turret was made for the Consolidated

Aircraft Corporation by the Southern Aircraft Corporation, Garland, Texas, and Motor Products Corporation, Detroit, Michigan.

DIMENSIONS:

Turret diameter, approx. 40.0 inches.

Turret height, approx. 58.0 inches.

WEIGHT (including actuator but less gunner): approx. 852 pounds.

ROTATION IN AZIMUTH: 122 degrees.

ELEVATION OF GUNS: from 40 degrees below to 71 degrees above horizontal.

OPERATING PRESSURE: approx. 800 pounds per square inch.

PUBLICATION: AAF Tech. Order 11-45D-1.

MFR'S DWG: Consolidated Aircraft Corporation, 32F5800-3.

TURRET, TAIL, CONSAIR 250CH-4

TURRET, TAIL, CONSAIR 250CH-4

BUREAU OF AERONAUTICS COGNIZANCE

THE Tail Turret Model Consair 250CH-4 is used in the tail of PB2Y-3 aircraft. This turret is identical to the Consair 250CH-3 except for the replacement of the Illuminated Sight Type N-6 by an Illuminated Sight Mark 9 in

original production and the inclusion of facilities for an outside source of ammunition.

This turret was made for Consolidated by the Southern Aircraft Corporation, Garland, Texas.

MFR'S DWG: Consolidated Aircraft Corporation, 29F4824.

TURRET, TAIL, MPC 250CH-5

BUREAU OF AERONAUTICS COGNIZANCE

THE Tail Turret Model MPC 250CH-5 is used on the tail of PB4Y-1 aircraft. The turret is basically similar to the Consair 250CH-3 and 4 but is lighter, of different construction, and includes many changes. The hydraulic chargers have been replaced by manual chargers; there is now a hydraulic jack that rotates the turret, thus eliminating the cable and

drum. In case of power failure manual operation is possible and auxiliary foot firing is now included.

The turret uses an Illuminated Sight Type N-6, a Heated Suit Rheostat AAF Type Q-2, and diluter demand oxygen equipment.

This turret is located on Army aircraft procured by the Navy.

WEIGHT (including actuating mechanism but less gunner): approx. 667 pounds.

MFR'S DWG: MPC 5800-5.

TURRET, TAIL, MPC 250CH-6

BUREAU OF AERONAUTICS COGNIZANCE

THE Tail Turret Model MPC 250CH-6 is used on the tail of PB4Y-2 aircraft. It is similar to the MPC 250CH-5 except that it includes an Illuminated Sight Mark 9 in place of the N-6 and the heated suit rheostat has been removed. A command type interphone

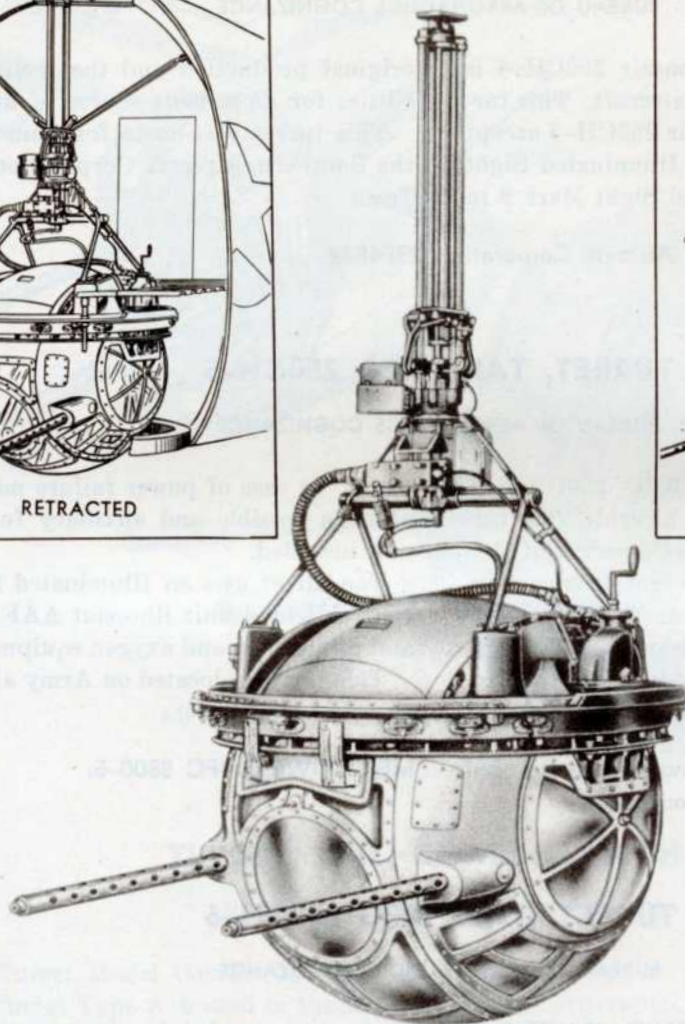
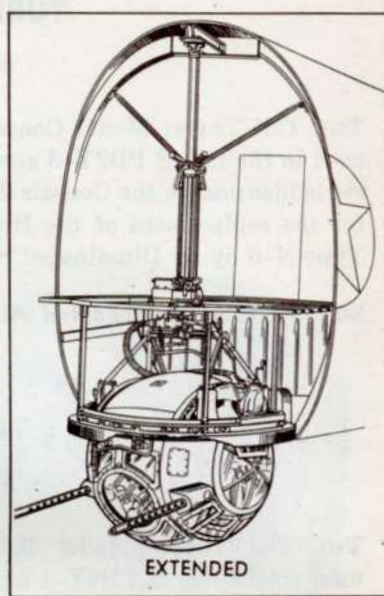
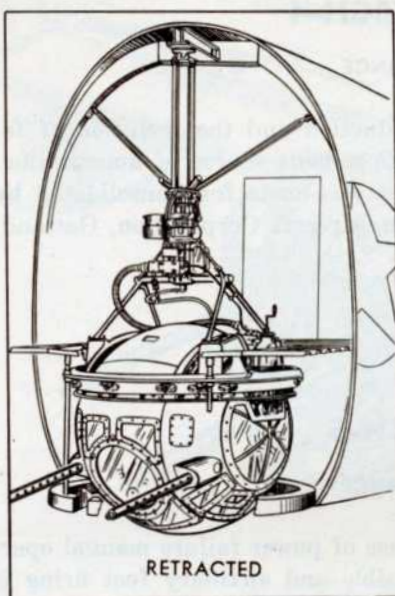
system is provided in this turret and later serial numbers will have provisions for the Gun Sight Mark 18.

The turret is manufactured for the Navy by the Southern Aircraft Corporation, Garland, Texas.

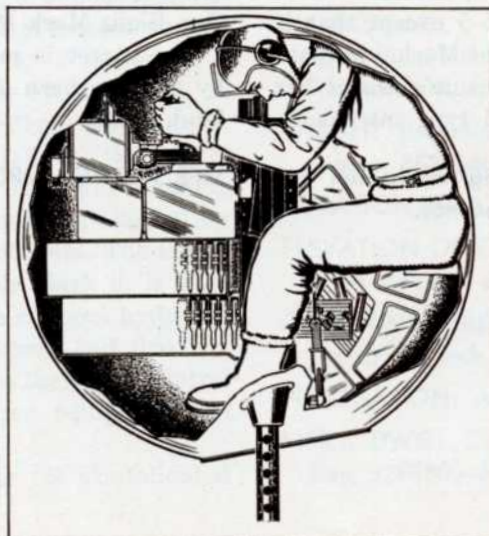
WEIGHT (including actuating mechanism but less gunner): approx. 667 pounds.

MFR'S DWG: MPC 5800-5.

TURRET, LOWER, SPERRY 250SH-1, -1A, -2



SPERRY 250 SH - I



TURRET, LOWER, SPERRY 250SH-1,-1A,-2 (CONT'D)

TURRET, LOWER, SPERRY 250SH-1

BUREAU OF AERONAUTICS COGNIZANCE

THE Lower Turret Model Sperry 250SH-1 is used in the lower position of PB4Y-1 aircraft. It is identical to the AAF Retractable Ball Turret Type A-13. The retraction is accomplished by hydraulic means.

The turret mounts 2 caliber .50 machine guns and is operated hydraulically by a Vickers drive.

The guns are fixed in relation to the turret, and are charged individually by manual chargers. This is a locally controlled turret and the gunner sights through an Automatic Computing Sight Type K-4. The turret, guns, sight and gunner move as a unit while tracking the target.

These turrets were made by the Briggs Manufacturing Company, Detroit, Michigan, and

the Emerson Electric Manufacturing Company, St. Louis, Missouri.

DIMENSIONS:

Turret ring diameter, approx. 46.5 inches.

Turret height extended, approx 131.6 inches.

Turret height retracted, approx. 104.1 inches.

WEIGHT (less gunner): approx. 1,200 pounds.

ROTATION IN AZIMUTH (continuous): 360 degrees.

MOVEMENT IN DEPRESSION: 90 degrees from the horizontal.

OPERATING PRESSURE: approx. 850 pounds per square inch.

PUBLICATION: AAF Tech. Order 11-45G-1.

MFR'S DWG: Briggs Manufacturing Co., 1300.

TURRET, LOWER, SPERRY 250SH-1A

BUREAU OF AERONAUTICS COGNIZANCE

THE Lower Turret Model Sperry 250SH-1A is the same turret as the Sperry 250SH-1,

but provides for an outside source of ammunition.

TURRET, LOWER, SPERRY 250SH-2

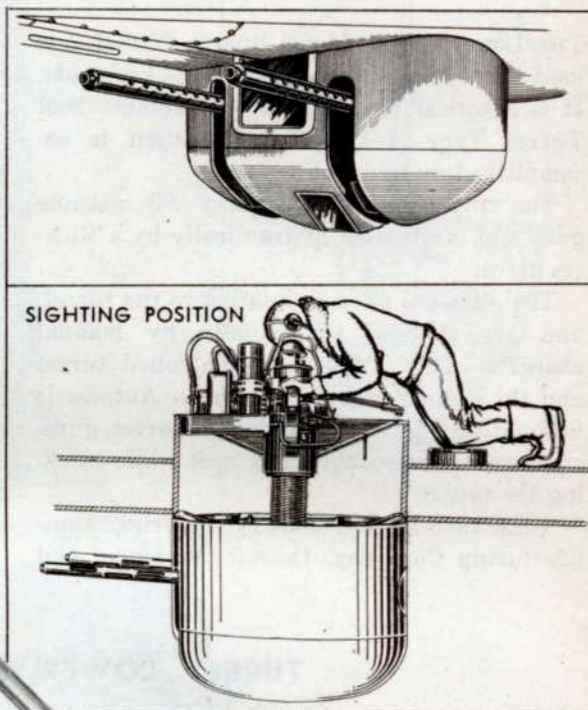
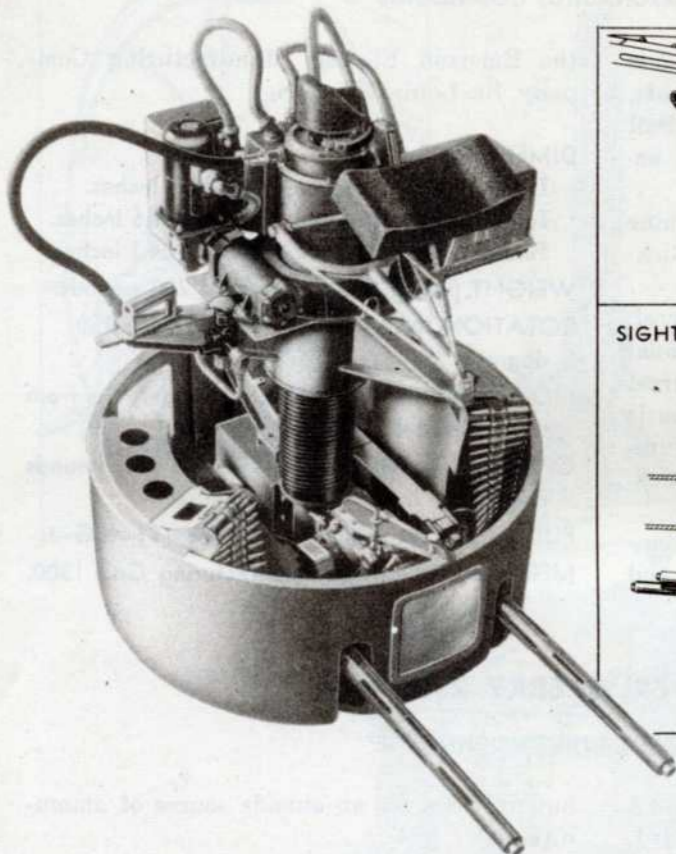
BUREAU OF AERONAUTICS COGNIZANCE

THE Lower Turret Model Sperry 250SH-2 is the same turret as the Sperry 250SH-1, ex-

cept that a Briggs retracting mechanism was combined with an AAF Ball Turret Type A-2.

PUBLICATION: AAF Tech. Order 11-45C-1.

TURRET, LOWER, BENDIX, 250CE-2



TURRET, LOWER, BENDIX, 250CE-2

BUREAU OF AERONAUTICS COGNIZANCE

THE Lower Turret Model Bendix 250CE-2 is the AAF Type A-10. It is used in the lower position of PBJ-1 aircraft. The turret is a retractable structure mounting 2 caliber .50 machine guns, and is amplidyne-driven. The drive motor that provides azimuth movement for the turret also retracts it.

The gunner is in a kneeling position while sighting the target through a periscope sight. The eyepiece of the sight remains fixed, while the prism moves with the guns. Guns are charged by hydraulic chargers, and fired by pressing a trigger switch on the turret control grip.

DIMENSIONS:

Turret diameter, approx. 39.5 inches.

Turret height, approx. 59.2 inches.

WEIGHT: approx. 497 pounds.

ROTATION IN AZIMUTH (continuous): 360 degrees.

DEPRESSION OF GUNS: 88 degrees below horizontal.

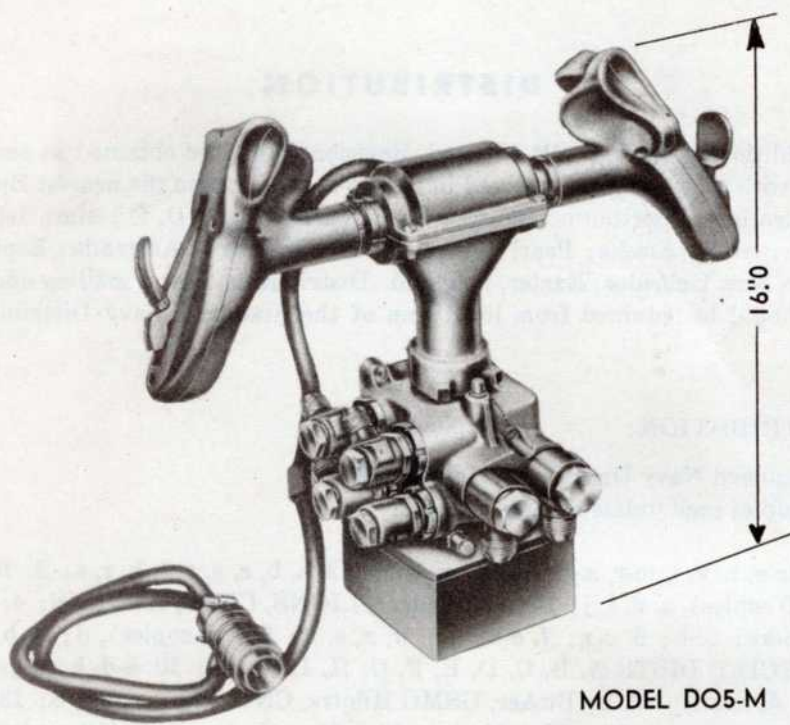
VOLTAGE: 28-volt DC.

PUBLICATION: AAF Tech. Order 11-45A-1.

MFR'S MODEL: K.

MFR'S DWG: Bendix Products Division of Bendix Aviation Corporation, 79800.

VALVE, GUN TURRET CONTROL



VALVE, GUN TURRET CONTROL

BUREAU OF AERONAUTICS COGNIZANCE

THE Gun Turret Control Valve consists of 2 hydraulic metering valves in one housing, operated singly or together by a control assembly mounted above the housing. One valve controls the vertical movement of the guns, and the other controls the horizontal movement.

The control column assembly varies for different turrets. Basically, however, the assembly

consists of a vertical column and a horizontal shaft on top of the vertical column, with a hand grip at each end.

The valve controlling the elevation of the guns is operated by turning the handles about their horizontal axis. The valve controlling the horizontal or train movement of the guns is operated by twisting the vertical column about the vertical axis.

DESIGNATION	TURRETS	DIMENSIONS (approx. inches)	WEIGHT (approx. pounds)
DO5-C	Consair 250CH-3, 4	12.0 x 17.7 x 3.9	9.1
DO5-E	Ereco 250SH-2	6.1 x 11.2 x 3.9 (without handles)	7.2
DO5-M	Martin 250SH-1, 1A, 2; Martin 250CH-1, 2, 3	16.0 x 13.1 x 3.9	10.4
DO5Y-3	MPC 250CH-5-6	12.0 x 17.7 x 3.9	9.1
DO5Y-5	MPC 250CH-5-6	12.0 x 17.7 x 3.9	9.1

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