



**INDEX  
OF  
ARMY  
AERONAUTICAL  
EQUIPMENT**

**WITH NAVY AND BRITISH  
EQUIVALENTS**



**Volume 5  
ARMAMENT**



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**WITH NAVY AND BRITISH EQUIVALENTS**

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to  
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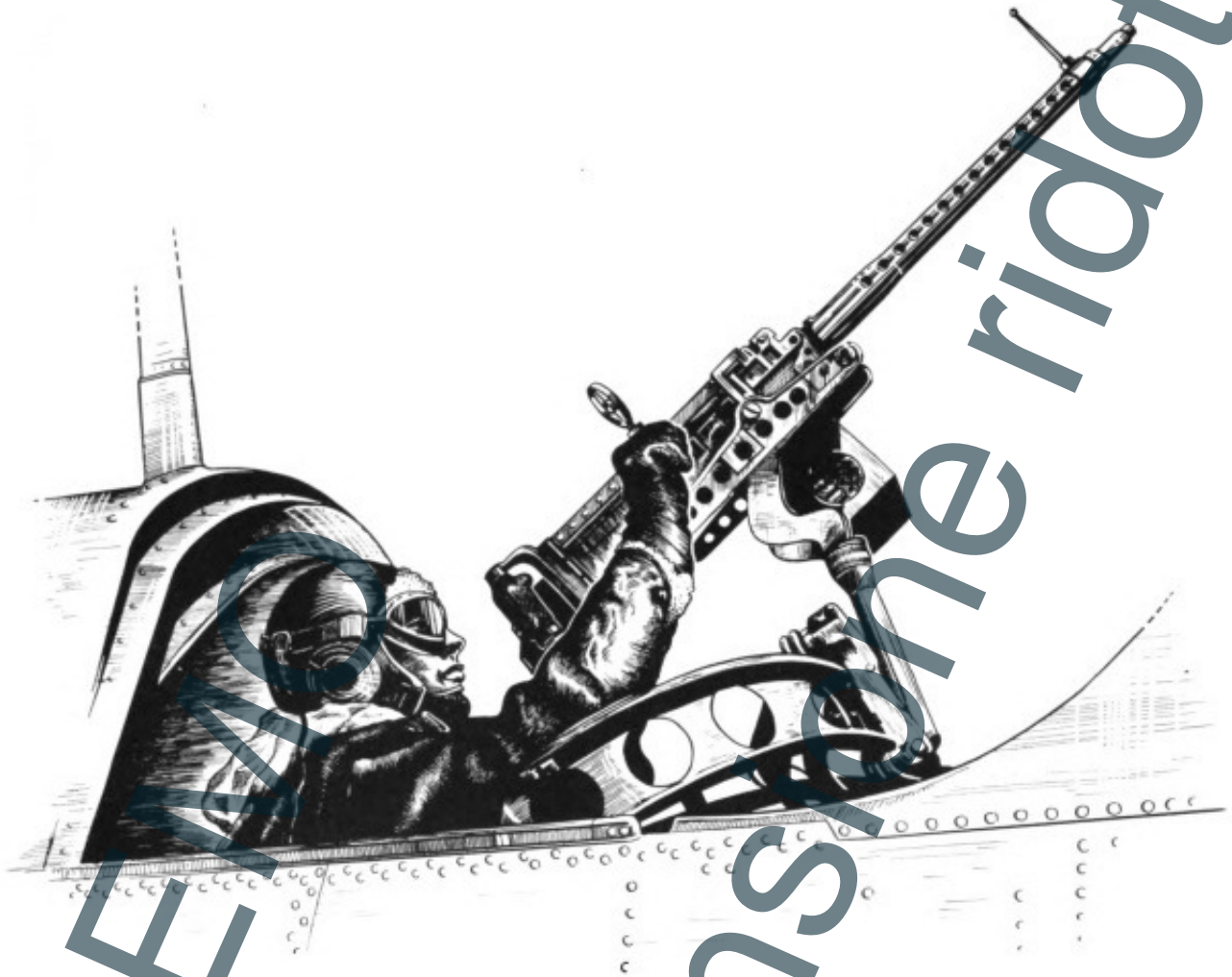
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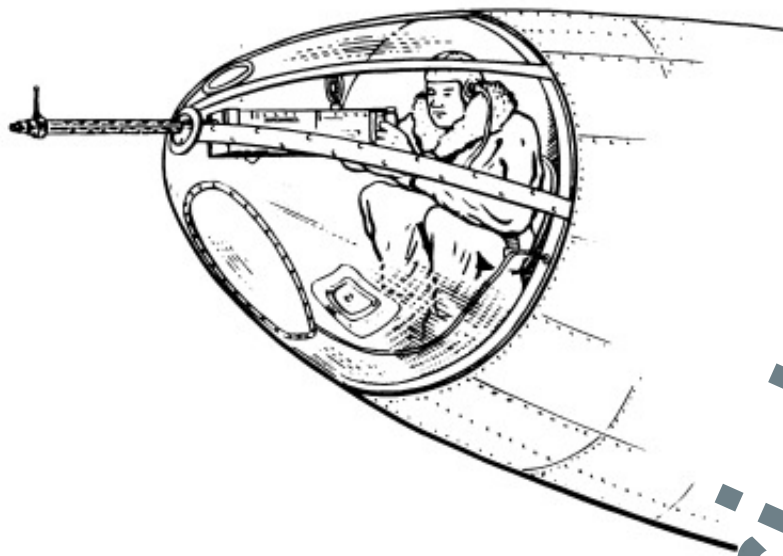


**ARMAMENT**



**GUNNERY  
EQUIPMENT**

DEPARTMENT OF DIMENSIONAL RIDOTTA



## GUN MOUNTS AND GUN MOUNT ADAPTERS

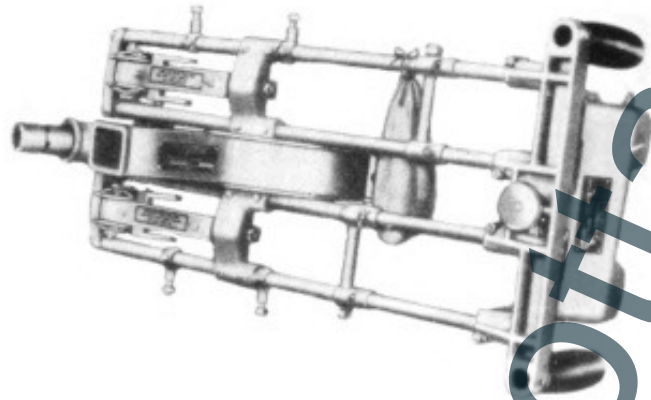
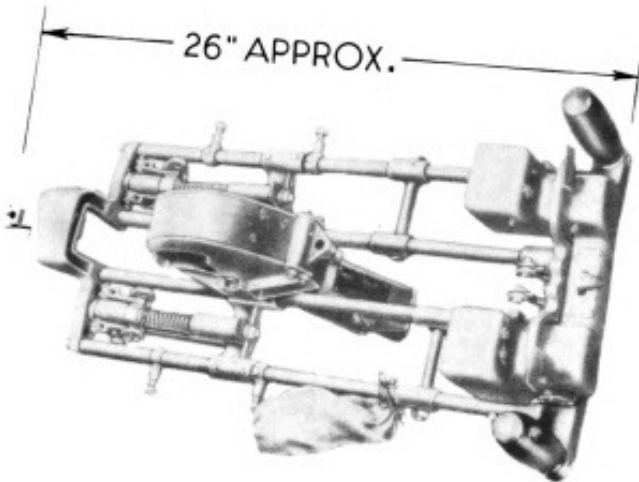
A machine gun is attached to an airplane by means of a gun mount and a gun mount adapter. The type of mounting device employed depends on the type of gun and the purpose for which it is intended. Mounts and adapters are classified primarily for use with .30 caliber or .50 caliber machine guns. For each size of gun, the mounts are further classified according to their function, i.e., fixed, flexible, or turret installation.

Fixed gun mounts are used on fighter aircraft. Since these airplanes are highly maneuverable, the guns may be aimed by pointing the airplane at the target. Fixed guns are installed in the wings or in the fuselage nose. If installed in the fuselage of a single engine airplane the gun fire must be synchronized with the engine to prevent the bullets from striking the propeller.

Flexible gun installations are employed on attack or bombardment airplanes as a defense against enemy attack from any direction. The flexible gun mount and adapter allows movement of the gun in any position, independent of the line of flight of the airplane.

Gun turrets, installed on bombardment airplanes, perform a function similar to flexible gun mounts and adapters. The turrets, however, have a much larger fire coverage, range of vision, and better stability, thereby increasing the efficiency of the gunner.

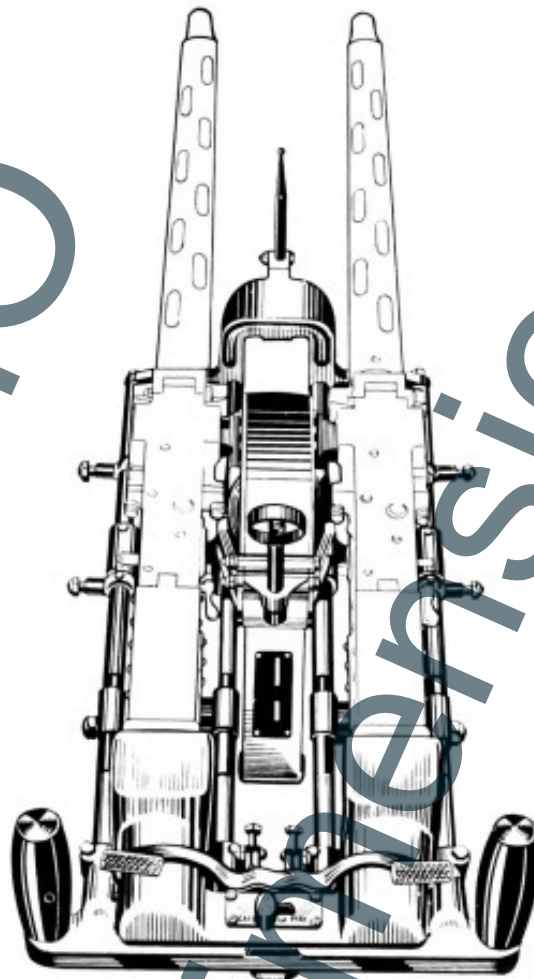
The forces involved in the rapid firing of .30 and .50 caliber guns must be reduced to a minimum for efficient use on airplanes, this is the primary purpose of gun mount adapters. Most gun mount adapters are provided with mechanical, pneumatic, or hydraulic means for absorbing the recoil force of the gun. However, many .30 caliber adapters and a few .50 caliber types are not equipped in this manner and recoil force must be dissipated through the mount to the airplane structure.



**ADAPTER—GUN MOUNT**  
**BELL AIRCRAFT MODEL 19G**

NAMES: Gun mount adapter  
Adapter—gun mount BAM—.30 M2, flexible, twin (Navy)  
Adapter—machine gun (British)  
Twin gun mount adapter

.30 caliber twin adapter



(Continued on page 5)

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## **ADAPTER—GUN MOUNT**

*(Continued from page 4)*

**DESCRIPTION:** This gun mount adapter absorbs the recoil shock of twin, right and left hand, .30 caliber, M2 machine guns. It consists of a frame made of four parallel bars attached to front and rear supports, and a centrally-located ejection chute, which serves both guns. 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 backplate which contains the trigger and trigger safety mechanism. The guns are fired, and the safety control operated, by the thumb of either hand.

This adapter is furnished with ring and bead sight. Ammunition box holders were also supplied with adapters of early manufacture.

**CHARACTERISTICS:**

Dimensions ..... approximately 11 by 5 $\frac{1}{2}$  by 2 $\frac{3}{8}$  inches  
Weight ..... approximately 17 pounds

**RELATIONSHIP OF PARTS:** Used with:

Twin .30 caliber M2 machine guns ..... A. E. Reference Number 93-1440

### **ARMY**

A. E. REFERENCE NUMBER: 52-400

TYPE DESIGNATION: None. Procured as manufacturer's model 19-G.

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

### **NAVY**

Information listed below pertains only to Navy adapter Mark 11, Modification 2, which is the Navy equivalent and is interchangeable with Bell Aircraft Corporation model 19-G, with modifications as noted on interchangeability chart.

BU. ORD. DRAWING NUMBER: Installation 329516, Assembly 329925

AVIATION ORDNANCE STOCK LIST NUMBER: 1-A-67-75

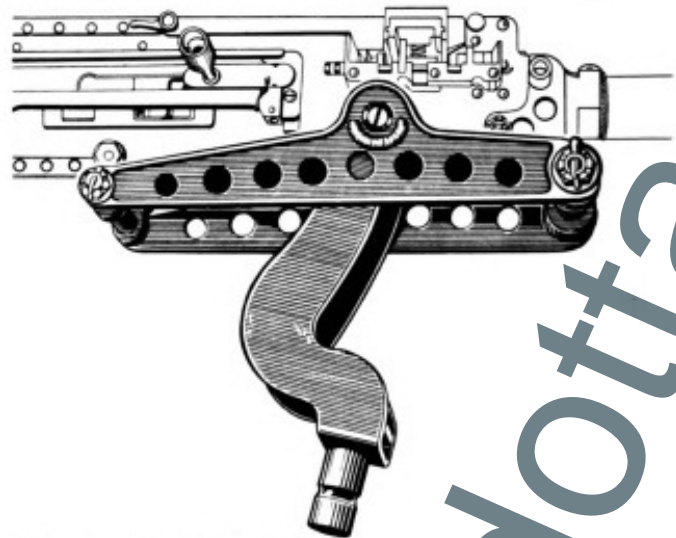
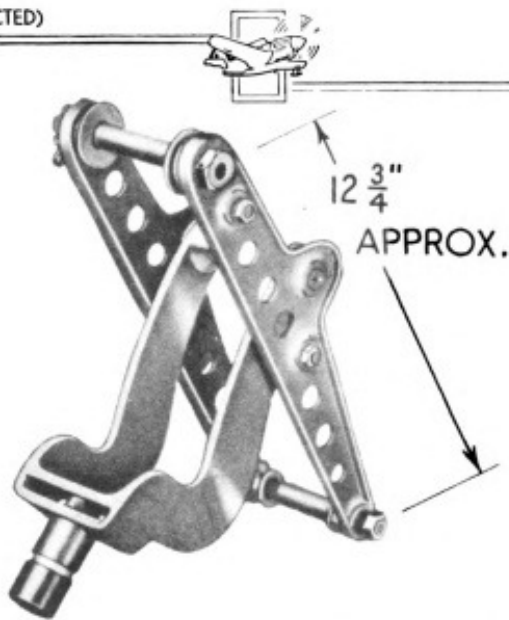
ORDNANCE PAMPHLET NUMBER: 865

PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
Bell Aircraft Corporation	19-G	GM-749-615	A-B	5200002365	11-10-10	150J/6	
	GM-59	03-059-001	N				Navy Mark 11 modification 2. May be made interchangeable by modifying armor plate brackets, sight mount, and yoke.





### ADAPTER—GUN MOUNT

ARMY TYPE C-12 NAVY—SEE BELOW

NAMES: Gun mount adapter

Adapter—gun mount, BAM—.30 M2, flexible, single (Navy)

Adapter—machine gun (British)  
Single gun mount adapter

DESCRIPTION: The Army type C-12 gun mount adapter accommodates a single .30 caliber M2 machine gun. It consists of two side plates, bolted to the gun at the front trunnion and rear mounting attachments. These plates 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 Army type H-1 ammunition box holder attached to studs on the left side plate.

CHARACTERISTICS:

Dimensions ..... approximately 12 3/4 by 10 7/8 by 4 3/8 inches  
Weight ..... approximately 5 1/2 pounds

RELATIONSHIP OF PARTS: Used with:

A single .30 caliber M2 machine gun ..... A. E. Reference Number 93-1520

#### ARMY

A. E. REFERENCE NUMBER: 52-500

SPECIFICATIONS:

Detail ..... 93-24643  
Superseded ..... 24643

A. A. F. DRAWING NUMBER: 37G4926

TYPE DESIGNATION: C-12

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation.

Superseded by Army type C-16 gun mount adapter, A. E. Reference Number 52-600.

SHIPPING DATA: Shipped as a complete unit.

#### NAVY

Information listed below pertains only to Navy Mark 1 adapter, which is the Navy equivalent. It is interchangeable with the Army type C-12, with the modifications noted on the chart.

BU. ORD. DRAWING NUMBER: 178468

AVIATION ORDNANCE STOCK LIST NUMBER: 1-A-65

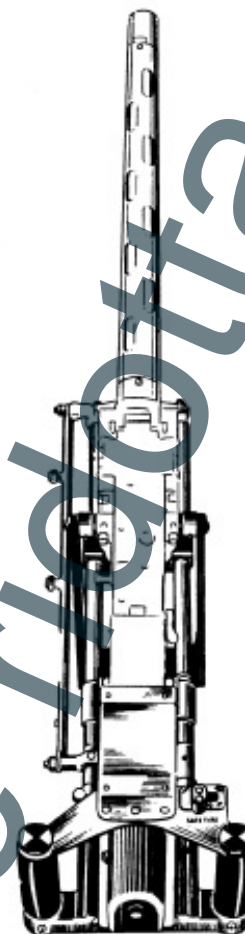
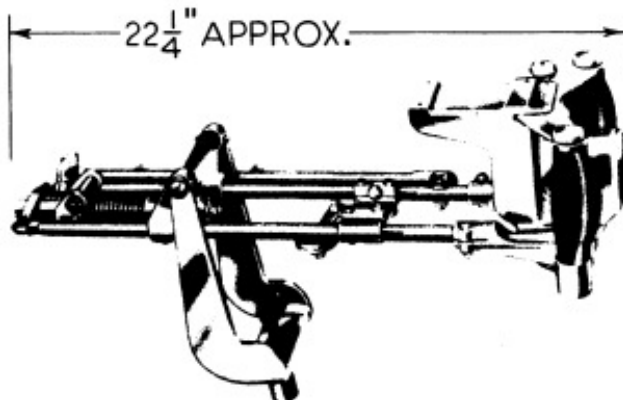
ORDNANCE PAMPHLET NUMBER: 865

PROCUREMENT STATUS: Not under procurement for initial installation.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Av. Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
Ohmer Fare Register Company	*C-12	**37G4926	A-B	5200004500	11-10-9	150J/16	
Groetchen Tool and Manufacturing Company	*C-12 †Mark 1	**37G4926 ††178468	A-B N	5200004500	11-10-9	150J/16	The Navy Mark 1 may be made interchangeable by substitution of yoke, Army part number 37D4929.

Note: \*AAF type; \*\*AAF drawing; †Navy type; ††Navy drawing.



**ADAPTER—GUN MOUNT**  
ARMY TYPE C-16 NAVY—SEE BELOW

NAMES: Gun mount adapter .30 caliber adapter  
Adapter—gun mount, BAM—.30 M2, flexible, single (Navy)  
Adapter—machine gun (British) Single gun mount adapter

DESCRIPTION: The Army type C-16 gun mount adapter absorbs recoil shock for a single .30 caliber M2 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 backplate 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, upward swing is 35 degrees and downward swing is 90 degrees.

CHARACTERISTICS:  
Dimensions . . . . . approximately 22 1/4 by 11 by 7 1/4 inches  
Weight . . . . . approximately 8 pounds 10 ounces

RELATIONSHIP OF PARTS: Used with:  
A single .30 caliber M2 machine gun . . . . . A. E. Reference Number 93-1440

**ARMY**

A. E. REFERENCE NUMBER: 52-600

**SPECIFICATIONS:**

Detail . . . . . 93-24639  
Superseded . . . . . 24639

A. A. F. DRAWING NUMBER: 40K3852 (Superseded by manufacturer's drawing number GM-749-658)

TYPE DESIGNATION: C-16

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION DATA: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

Information listed below pertains only to Navy Mark 12 adapter, which is the Navy equivalent. It is interchangeable with the Army type C-16, with the modifications noted on the chart.

BU. ORD. DRAWING NUMBER: Assembly 320160, Installation 328551

AVIATION ORDNANCE STOCK LIST NUMBER: 1-A-67-15

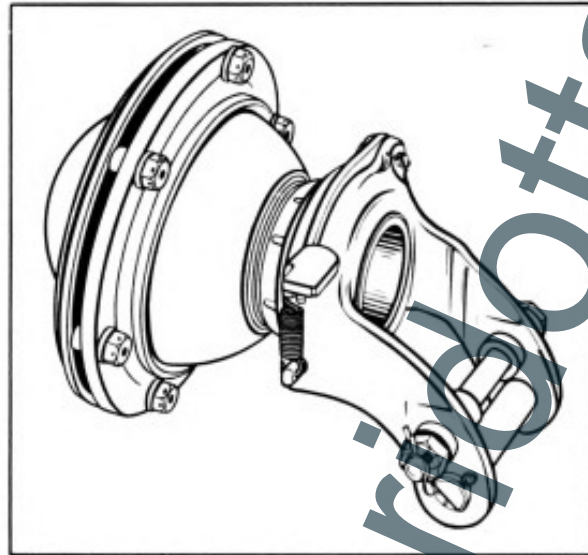
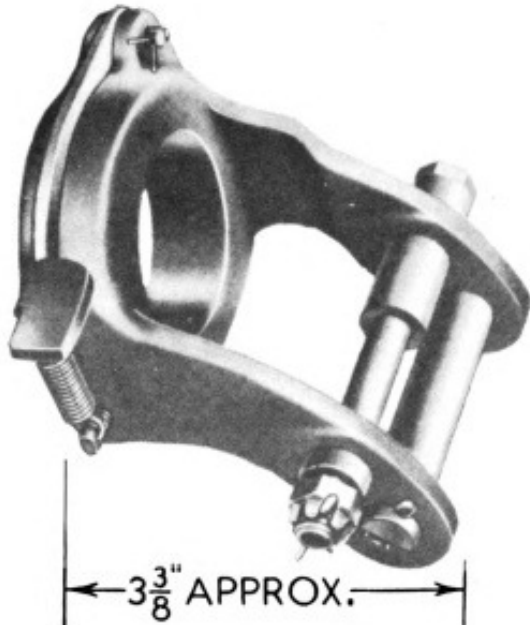
ORDNANCE PAMPHLET NUMBER: 865

PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Type	Remarks
Bell Aircraft Corporation	GM-11G	GM-749-658	A-B	5200004850	11-10-14	150J/30	Army C-16	
	GM-11G	GM-749-658	N				Navy Mark 12	*

\*The Navy Mark 12 includes a telescopic sight bracket and ammunition box holder. It may be made interchangeable with Army type C-16 by substitution of yoke, Bell part number GM-749-692, and removal of the telescopic sight bracket and ammunition box holder.



**ADAPTER—GUN MOUNT**  
**ARMY TYPE C-17**

NAMES: Gun mount adapter

Adapter—machine gun (British)

DESCRIPTION: The Army type C-17 gun mount adapter attaches a single .30 caliber M2 machine gun to a ball and socket type mount, and has provisions for a gun camera. 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.

CHARACTERISTICS:

Dimensions . . . . . approximately 4 <sup>3</sup>/<sub>8</sub> by 4 <sup>1</sup>/<sub>2</sub> by 3 <sup>3</sup>/<sub>8</sub> inches  
Weight . . . . . approximately 2 pounds

RELATIONSHIP OF PARTS: Used with:

A single .30 caliber M2 machine gun, A. E. Reference Number 93-1520, and Army types K-2, K-2A, or K-3 ball and socket gun mounts, A. E. Reference Number 52-3850, 52-3900, and 52-3950.

**ARMY**

A. E. REFERENCE NUMBER: 52-700

SPECIFICATIONS:

Detail . . . . . 93-24696  
Superseded . . . . . 24696

A. A. F. DRAWING NUMBER: 41D5642 (Supersedes Army drawing number 40G6567)

TYPE DESIGNATION: C-17

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
Iron Fireman Manufacturing Company	*C-17	**41D5642	A-B	5200004870	11-10-9	150J/17	
Warner Industries	*C-18	**41D11020	A-B	5200004900	11-10-9	150J/28	The Army type C-18 does not contain a mounting bolt for gun camera installation.
Crosley Corporation	*C-18	**41D11020	A-B	5200004900	11-10-9	150J/28	

Note: \*AAF type; \*\*AAF drawing.



### BOX—AMMUNITION

ARMY TYPE L-4    NAVY TYPE L-4

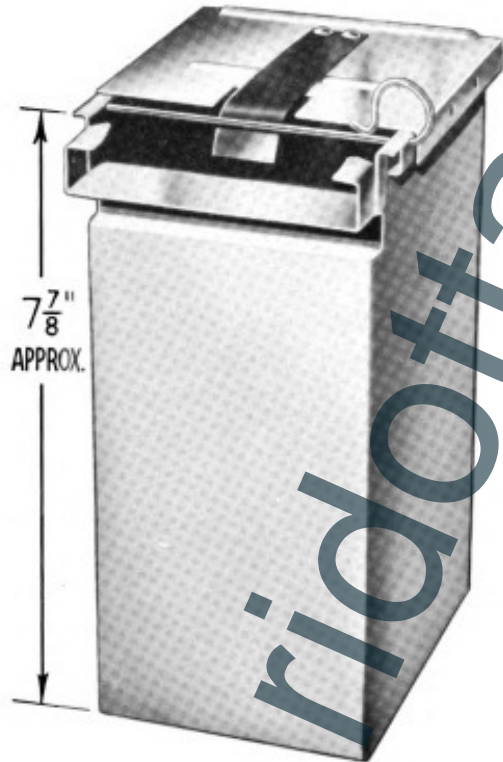
NAMES: Ammunition box  
Magazine (Navy)  
.30 caliber ammunition box

DESCRIPTION: The type L-4 ammunition box is a rectangular metal box, with a capacity of 100 rounds of .30 caliber ammunition in a metallic link belt. It is secured to the gun mount adapter by a type A-1 ammunition box holder. The edge of the box has a curved lip, which prevents the ammunition belt from catching during firing.

Initial feeding of the ammunition belt into the gun is accomplished by sliding the box cover toward the gun.

CHARACTERISTICS:  
Dimensions approximately 8½ by 4½ by 5 inches  
Weight . . . . . approximately 1½ pounds

RELATIONSHIP OF PARTS: Used with:  
Army type A-1 ammunition box holder . . . . . A. E. Reference Number 52-2800



#### ARMY

A. E. REFERENCE NUMBER: 52-1500

SPECIFICATIONS:

Detail . . . . . 93-24653  
Superseded . . . . . 24653

A. A. F. DRAWING NUMBER: 30-616

TYPE DESIGNATION: L-4

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type L-7, ammunition box, A. E. Reference Number 52-1550.

SHIPPING DATA: Shipped as a complete unit.

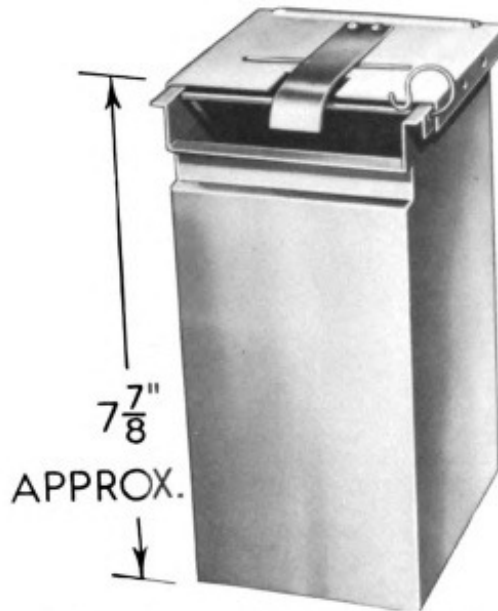
#### NAVY

TYPE DESIGNATION:	Mark 1	Mark 7	L-4
BU. ORD. DRAWING NUMBERS:	Assembly 178456	Installation 300526	Assembly 294272
AVIATION ORDNANCE STOCK LIST NUMBER:	1-M-176	1-M-176-20	1-M-176-30
ORDNANCE PAMPHLET NUMBER:	865	None	None
PROCUREMENT STATUS:	Not Under Procurement	Under Procurement	Not Under Procurement
NOTE:	Navy Mark 1 and L-4 are identical.		

ALL MODELS BELOW ARE INTERCHANGEABLE  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number	Remarks
Geuder, Paeschke and Frey, Company	*L-4	**36-6108	A-N-B	5200090300	150J/575	Has 5/8 inch feed lip.
Pittsburgh-Dubois Company	*L-4	**30-616	A-N-B	5200090300	150J/575	Has 5/8 inch feed lip.
	‡Mark 1	‡‡178456	N			Has 5/8 inch feed lip.
	‡Mark 7	‡‡294272	N			*
Brunhoff Manufacturing Company	*L-7	**42D6859	A-B	5200090500	150J/597	

Note: \*AAF type; \*\*AAF drawing; ‡Bu. Ord. type; ‡‡Bu. Ord. drawing.



**BOX—AMMUNITION**  
**ARMY TYPE L-7**

NAMES: Ammunition box  
.30 caliber ammunition box  
Magazine

DESCRIPTION: The Army type L-7 ammunition box is a rectangular metal box, with a capacity of 100 rounds of .30 caliber ammunition in a metallic link belt. It is identical with the type L-4 ammunition box, except that the type L-7 has a rolled edge instead of a bent lip. The top of the box is removable for loading the ammunition.

This box fits into an ammunition box holder secured to the gun mount adapter.

CHARACTERISTICS:

Dimensions ..... approximately 8 3/8 by 4 1/4 by 4 3/8 inches  
Weight ..... approximately 1 1/2 pounds

RELATIONSHIP OF PARTS: Used with:

Army type A-1 ammunition box holder ..... A. E. Reference Number 52-2800

**ARMY**

A. E. REFERENCE NUMBER: 52-1550

SPECIFICATIONS:

Detail ..... 93-24750  
Superseded ..... 24750

A. A. F. DRAWING NUMBER: 42D6859

TYPE DESIGNATION: L-7

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

**ALL MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number	Remarks
Brunhoff Manufacturing Company	*L-7	**42D6859	A-B	5200090500	150J/597	
Geuder, Paeschke, and Frey, Inc.	*L-4	**36-6108	A-B	5200090300	150J/575	Has 3/8 inch feed lip
Pittsburgh-Dubois Company	*L-4	**30-616	A-B	5200090300	150J/575	Has 3/8 inch feed lip
	*L-4	‡‡155316	N			Has 3/8 inch feed lip
	‡Mark 1	‡‡178456	N			Has 3/8 inch feed lip
	‡Mark 7	‡‡294272	N			

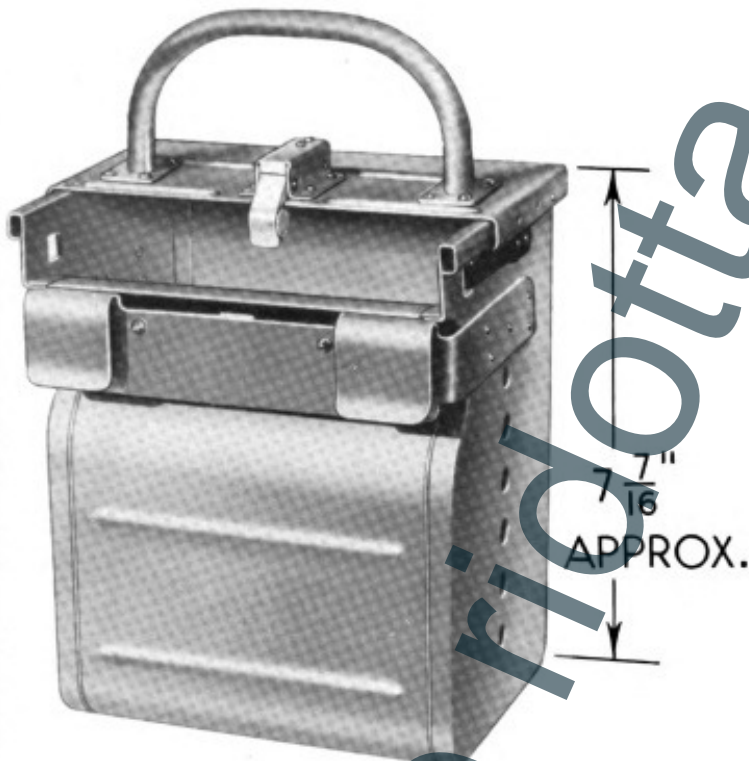
Note: \*AAF type; \*\*AAF drawing; ‡Bu. Ord. type; ‡‡Bu. Ord. drawing.



# BOX—AMMUNITION ARMY TYPE O-1

NAMES: Ammunition box  
Box—ammunition .50 caliber

DESCRIPTION: The Army type O-1 ammunition box is a rectangular metal box, with a capacity of 30 rounds of .50 caliber ammunition in a metallic link belt. It is secured to the gun mount adapter by an ammunition box mount. The edge of the box has a curved lip, to insure smooth feed and to prevent the ammunition belt from catching during firing. The top is removable for loading. While the gun is firing, a flat spring on one side of the box engages the rear of each shell before it enters the gun. This prevents the ammunition from getting out of line, due to vibration, and from slipping back into the box. A tubular grip attached to the cover assists in handling the box during initial feeding of the belt into the gun.



### CHARACTERISTICS:

Dimensions ..... approximately 10 by 6 by 4 5/8 inches  
Weight ..... approximately 2 1/2 pounds

### RELATIONSHIP OF PARTS: Used with:

Army type C-3 ammunition box mount, A. E. Reference Numbers 52-3359 or 52-3360. When installed on Army type E-8 gun mount adapter, A. E. Reference Number 52-1100.  
Army type C-2 ammunition box mount, A. E. Reference Numbers 52-3200 or 52-3300. When installed on Army type E-11 gun mount adapter, A. E. Reference Number 52-1300.

### ARMY

A. E. REFERENCE NUMBER: 52-1600

#### SPECIFICATIONS:

Detail ..... 93-24673  
Superseded ..... 24673

MANUFACTURER: Brunhoff Manufacturing Company.

A. A. F. DRAWING NUMBER: 35D3891

TYPE DESIGNATION: O-1

A. S. C. STOCK NUMBER: 5200090900

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

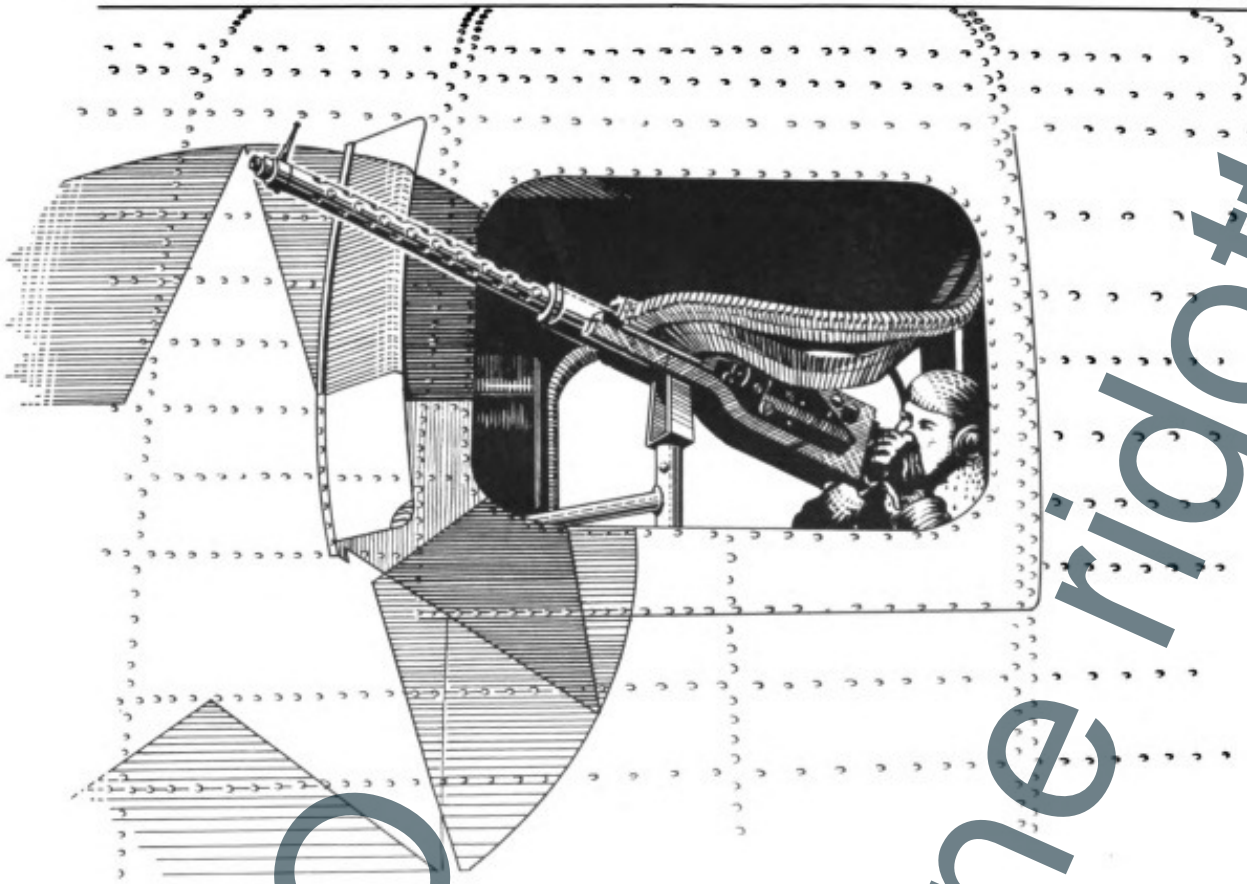
### NAVY

There is no Navy equivalent for the Army item.

### BRITISH

REFERENCE NUMBER: 150J/578

dimensione ridotta



## **FLEXIBLE FEED CHUTES**

Flexible feed chutes are used to keep the cartridge belt from catching as it travels from the ammunition box to the gun, and to prevent cartridges from twisting and causing a jam. Chutes enable ammunition boxes of large carrying capacity to be located at some distance from the machine guns. This allows placement of guns in positions on the airplane where limited space prevents normal installation.

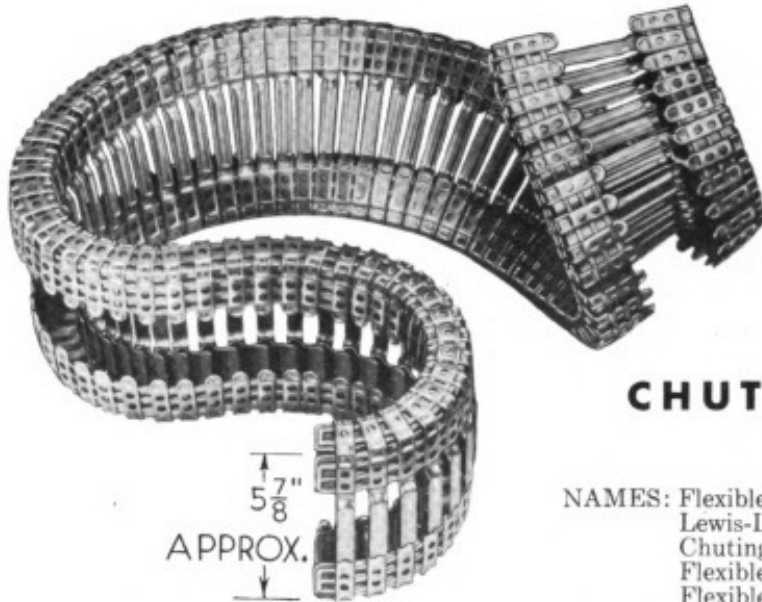
Interlocked metal stampings, shaped to support and direct the cartridge belt, comprise the chute. At both ends of the chute are adapters, one for the gun, the other for the ammunition box.

The length of flexible chuting, when compressed, is about forty per cent less than when extended; length of chuting is measured when extended.

Flexible feed chutes have been supplied in two general types, separable and permanent. The permanent type chute is composed of a series of links which are spot-welded together to form a permanent flexible chute. The separable type chute is composed of links which are held together by spring action and may be separated by a special tool which releases the spring tension. The separable type chute has superseded the permanent type chute for all initial installations.



# FLEXIBLE FEED CHUTES ARMAMENT—GUNNERY



## CHUTE—FLEXIBLE FEED LEWIS-LARSON TYPE B

NAMES: Flexible feed chute  
Lewis-Larson flexible chuting  
Chuting assembly—flexible ammunition .50 cal.  
Flexible ammunition chute  
Flexible feed chuting

DESCRIPTION: The Lewis-Larson type B flexible feed chute is a separable feed chute, for use with M2 .50 caliber machine guns. This type is supplied in various lengths as ordered, but must be equipped with a box end and gun end adapter before it is ready for use.

CHARACTERISTICS: Dimensions (less adapters):

Width	.....	approximately 5 7/8 inches
Height	.....	approximately 1 1/4 inches
Length	.....	must be specified when ordering
Weight	.....	approximately 3/4 pound per foot of length

RELATIONSHIP OF PARTS: Used with:

Army type L-1 (Lewis-Larson type G-1) gun end adapter, A. E. Reference Number 52-1723, and Army type L-2 (Lewis-Larson type M-3) Box end adapter, A. E. Reference Number 52-1724.

### ARMY

A. E. REFERENCE NUMBER: 52-1722

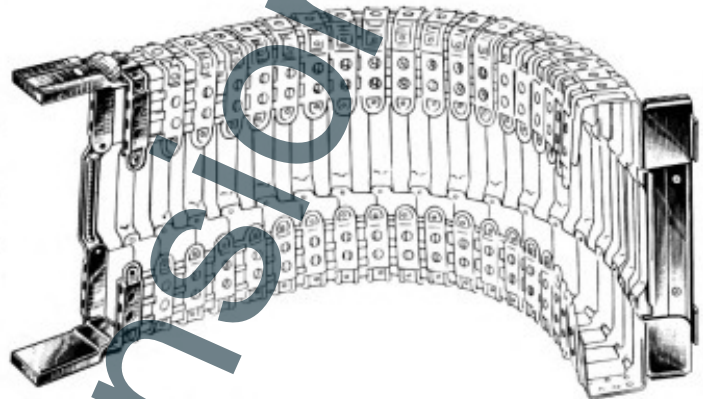
SPECIFICATIONS:

Detail ..... 24850  
 A. A. F. DRAWING NUMBER: 43A20364  
 TYPE DESIGNATION: None (Procured as manufacturer's type B).  
 A. S. C. STOCK NUMBER: Refer to chart.  
 PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit in 15, 25, or 50 foot lengths as ordered.

### NAVY

The Navy is presently procuring this item from the Army.

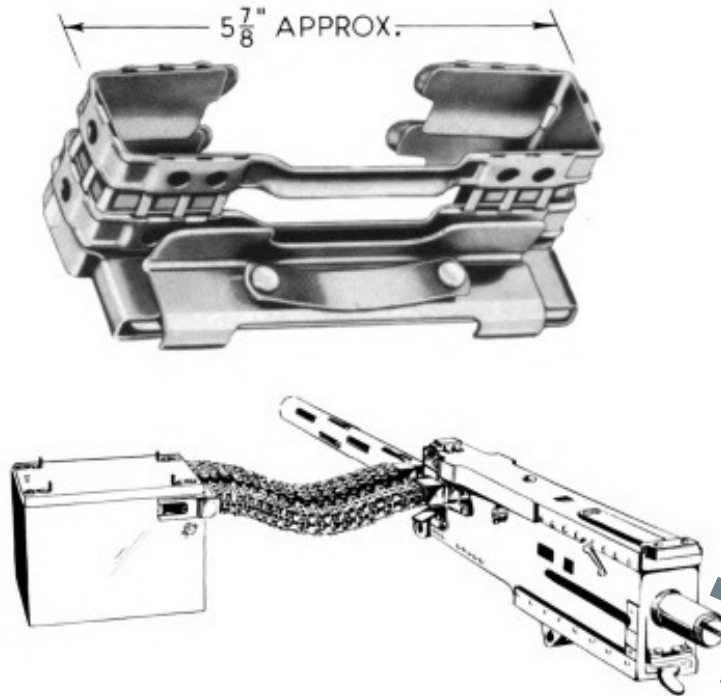


### MODELS BELOW ARE INTERCHANGEABLE Models are used in services as noted in column 4 A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
Brunhoff Manufacturing Company	LLB50	105A40	A-N-B	5200177125	150J/776
Smoot-Holman Company	LLB50	105A40	A-N-B	5200177125	150J/776

NOTE: The Lewis-Larson model LLB50 supersedes, and is interchangeable with, flexible ammunition chuting assemblies A. E. Reference Numbers 52-1730, 52-1750, 52-1760, 52-1770, 52-1790, 52-1800, and 52-1810. When replacing any of these assemblies, one gun end adapter, A. E. Reference Number 52-1723, and one box end adapter, A. E. Reference Number 52-1724, must be supplied for each installation.





**ADAPTER—GUN END**  
**ARMY TYPE L-1**

NAMES: Gun End Adapter  
Gun Feedway Adapter  
Flexible Feed Chute Adapter

DESCRIPTION: The Army type L-1 gun end adapter is used to connect the flexible feed chute to the gun in such a manner that the function of the chute is not impaired. It is attached to the M2, .50 caliber machine gun by means of the Army type C-2 or C-3 ammunition box mount, and may be quickly attached or removed from this mount by releasing a spring-held latch which forms a part of the adapter.

CHARACTERISTICS:

Weight..... approximately 1/4 pound.  
Dimension..... approximately 2 1/16 by 5 7/8 by 1 1/2 inches.

RELATIONSHIP OF PARTS: Used with:

Army type L-2 box end adapter, A. E. Reference Number 52-1724, and Lewis-Larson type B flexible feed chute, A. E. Reference Number 52-1722.

**ARMY**

A. E. REFERENCE NUMBER: 52-1723

SPECIFICATIONS:

Detail..... 24875

AN OR A. A. F. DRAWING NUMBER: 43A20362

TYPE DESIGNATION: L-1

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

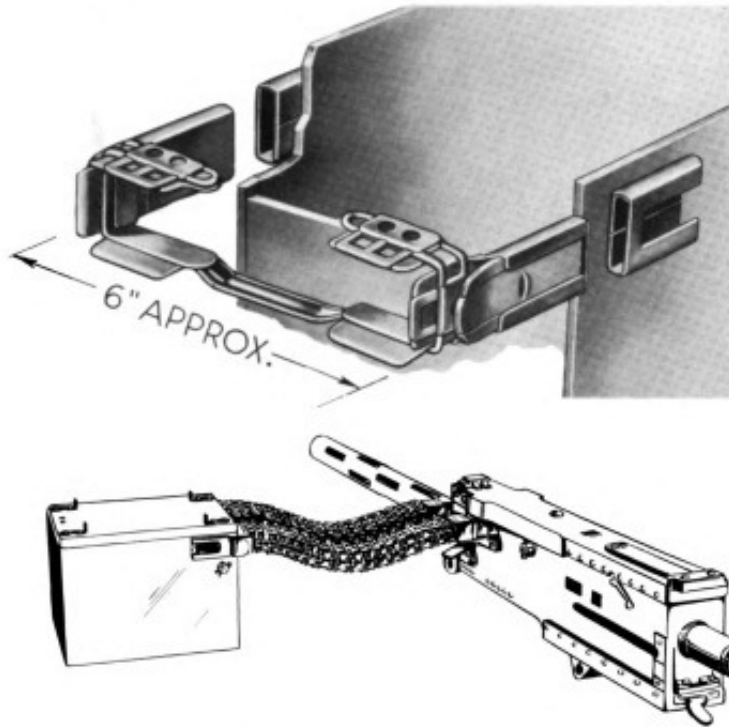
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
Smoot-Holman Company	G-1	105A12	A-B	5200001775	150J 782
Brunhoff Mfg. Company	G-1	105A12	A-B	5200001775	150J 782



**ADAPTER—BOX END**  
**ARMY TYPE L-2**

**NAMES:** Box end adapter  
Box feedway adapter  
Flexible feed chute adapter

**DESCRIPTION:** The Army type L-2 box end adapter is used to provide a quickly detachable means of connecting the flexible feed chute to a .50 caliber ammunition box. This adapter is supplied in three parts: one reinforced chute link with a bayonet connector at each end, and two channel connectors. The chute link is attached to, and becomes a part of, the flexible feed chute, and the two channel connectors are welded to the ammunition box.

**CHARACTERISTICS:**  
Dimensions ..... approximately 1 1/4 by 6 by 3 inches.  
Weight ..... approximately 1/4 pound.

**RELATIONSHIP OF PARTS:** Used with:  
Army type L-1 gun end adapter, A. E. Reference Number 52-1723, and Lewis-Larson type B flexible feed chute, A. E. Reference Number 52-1722.

**ARMY**

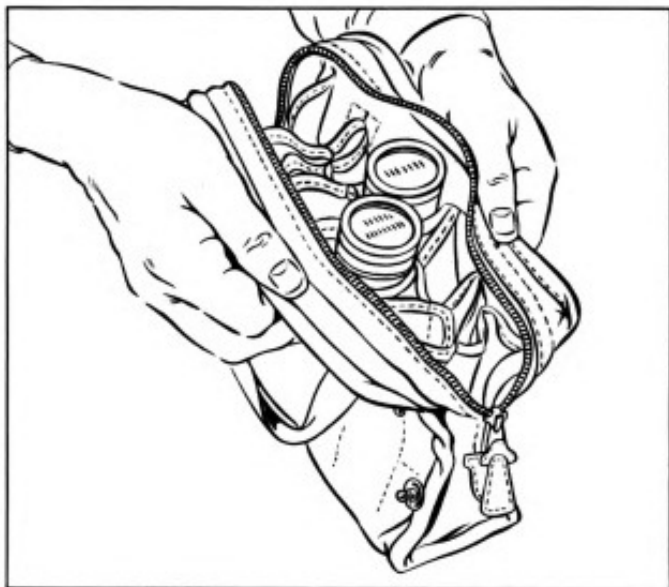
A. E. REFERENCE NUMBER: 52-1724  
**SPECIFICATIONS:**  
Detail ..... 24876  
A. A. E. DRAWING NUMBER: 43A20361  
TYPE DESIGNATION: L-2  
A. S. C. STOCK NUMBER: Refer to chart.  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
Smoot-Holman Company	M-3	105A24	A-B	5200001785	150J/783
Brunhoff Mfg. Company	M-3	105A24	A-B	5200001785	150J/783



**CONTAINER—SIGNAL FLARE**  
**ARMY TYPE A-1**

NAME: Signal flare container

DESCRIPTION: The Army type A-1 signal flare container is a portable carrier for aircraft signal flares. It is made of canvas, has a plywood bottom support, and cotton webbing strap handles for carrying. A full length zipper enables the entire top to be opened.

The container is divided into two parallel compartments, one able to hold four and the other five M-10, M-11, M-14, M-15, or M-16 signal flares. Snap fasteners attach the container to the pistol holder inside the airplane.

CHARACTERISTICS:

Dimensions.....	approximately 8 1/2 by 9 1/4 by 3 1/16 inches.
Weight.....	approximately 3/4 pound.
Capacity.....	9 flares.

**ARMY**

A. E. REFERENCE NUMBER: 52-2250

SPECIFICATIONS:

Detail.....	93-24713
Superseded.....	24713

MANUFACTURER: Troy Sunshade Company.

A. A. F. DRAWING NUMBER: 41G9233

TYPE DESIGNATION: A-1

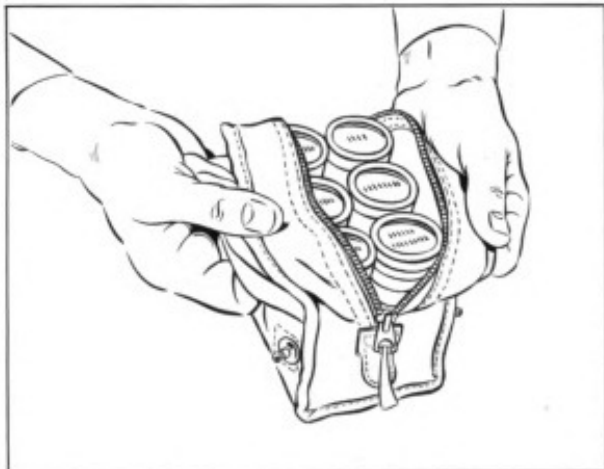
A. S. C. STOCK NUMBER: 4500216600

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type A-7 signal flare container A. E. Reference Number 52-2256.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.



**CONTAINER—SIGNAL FLARE**  
**ARMY TYPE A-5**

NAME: Signal flare container

DESCRIPTION: The Army type A-5 signal flare container is a carrier for aircraft signal flares. It is made of canvas, with a plywood bottom and cotton webbing strap handles for carrying.

The container has two parallel compartments, each able to hold three flares of types AN-M37 to AN-M45 inclusive. A full length zipper enables the entire top to be opened. Snap fasteners attach the container to the pistol holder inside the airplane.

CHARACTERISTICS:

Dimensions .....	approximately 4 $\frac{3}{4}$ by 5 $\frac{3}{4}$ by 4 $\frac{1}{2}$ inches.
Weight .....	approximately $\frac{1}{2}$ pound.
Capacity .....	6 flares.

RELATIONSHIP OF PARTS: Used with:

Army type A-2 pyrotechnic pistol holder, A. E. Reference Number 52-2826.

**ARMY**

A. E. REFERENCE NUMBER: 52-2254

SPECIFICATIONS:

Detail .....	93-24771
Superseded .....	24771

MANUFACTURER: Troy Sunshade Company.

A. A. F. DRAWING NUMBER: 42G11966

TYPE DESIGNATION: A-5

A. S. C. STOCK NUMBER: 4500230375

TECHNICAL ORDER NUMBER: 11-15-8

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

dimension file



**CONTAINER—SIGNAL FLARE**  
**ARMY TYPE A-6**

NAME: Signal flare container

DESCRIPTION: The Army type A-6 signal flare container is a carrier for aircraft signal flares. It is made of canvas with a plywood bottom, and cotton webbing strap handles for carrying. The container has two parallel compartments, each able to hold six flares of types AN-M37 to AN-M45 inclusive. A full length zipper enables the entire top to be opened. Snap fasteners attach the container to the pistol holder inside the airplane.

CHARACTERISTICS:

Dimensions .....	approximately 4 1/4 by 11 1/4 by 4 1/2 inches.
Weight .....	approximately 1 1/2 pound.
Capacity .....	12 flares.

RELATIONSHIP OF PARTS: Used with:

Army type A-2 pyrotechnic pistol holder, A. E. Reference Number 52-2826.

**ARMY**

A. E. REFERENCE NUMBER: 52-2255

SPECIFICATIONS:

Detail .....	93-24772
Superseded .....	24772

MANUFACTURER: Troy Sunshade Company.

A. A. F. DRAWING NUMBER: 42G11967

TYPE DESIGNATION: A-6

A. S. C. STOCK NUMBER: 4500230400

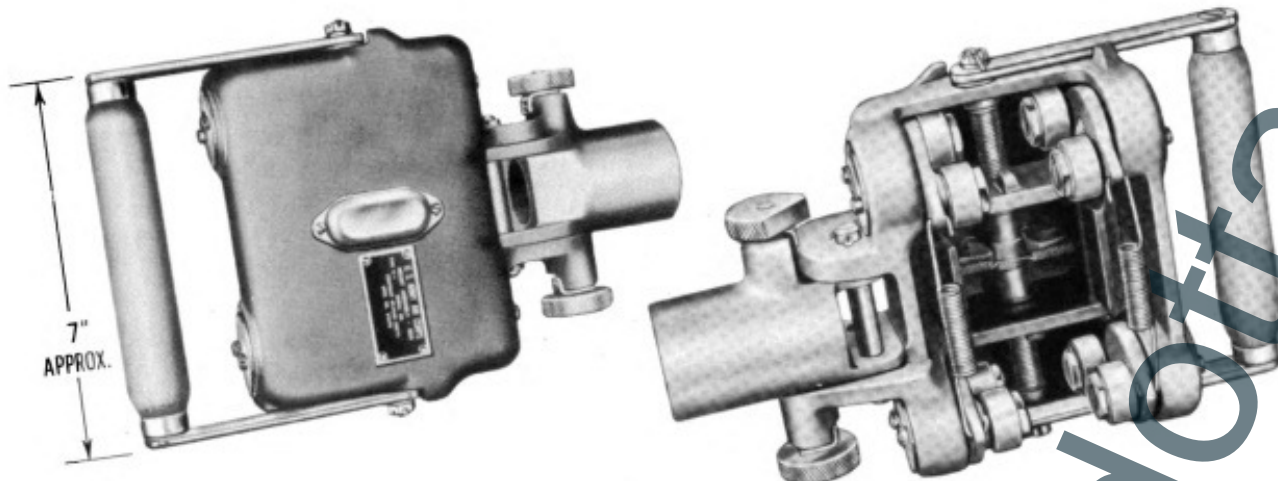
TECHNICAL ORDER NUMBER: 11-15-8

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.



**MOUNT-GUN**  
**ARMY TYPE H-1**

**NAMES:** Gun mount  
Flexible gun mount

**DESCRIPTION:** The Army type H-1 gun mount provides means for moving one .50 caliber M2 machine gun or twin, .30 caliber M2 machine guns along a stationary track or rail conforming to the shape of a fuselage opening. The mount consists of a steel housing surrounding a movable truck which engages the rail, a brake mechanism, and a socket with a locking device to hold and lock the gun, or guns, in the desired position.

**CHARACTERISTICS:**

Dimensions.....approximately 11 by 7 by 4½ inches  
Weight.....approximately 16 pounds 8 ounces

**RELATIONSHIP OF PARTS:** Used with:

A single .50 caliber M2 machine gun mounted on an Army type E-11 or E-12 adapter, A. E. Reference Number 52-1300 or 52-1325; or two .30 caliber M2 machine guns mounted on a Bell model 19-G gun mount adapter, A. E. Reference Number 52-400.

**ARMY**

A. E. REFERENCE NUMBER: 52-3700

**SPECIFICATIONS:**

Detail.....98-24698  
Superseded.....24698

A. A. F. DRAWING NUMBER: 41G6410 (Supersedes Army Drawing S41D6785).

TYPE DESIGNATION: H-1

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit, without rail which is not furnished by the government.

**NAVY**

There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
The Duro Company	*H-1	**41G6410	A-B	5200473335	150J/50
Aerial Machine and Tool Company	*H-1	**41G6410	A-B	5200473335	150J/50

Note: \*AAF type; \*\*AAF drawing.



# MOUNTS ARMAMENT—GUNNERY

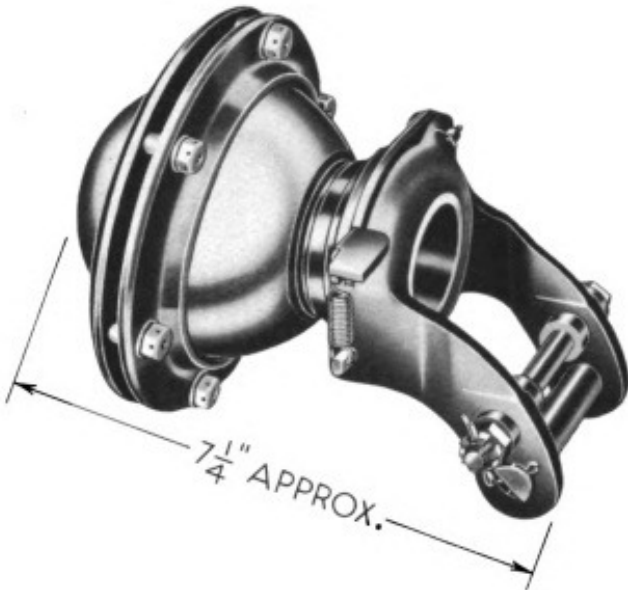
## MOUNT ASSEMBLY— BALL AND SOCKET GUN ARMY TYPE K-1

NAMES: Ball and socket gun mount assembly  
Ball and socket mount  
Gun mount

DESCRIPTION: The Army type K-1 ball and socket gun mount, consisting of a type K-2 ball and a type C-17 adapter, accommodates a single .30 caliber M2 machine gun. The adapter is fastened to the front trunnion of the gun and clips to the rear of the ball. The socket halves, which surround the ball, attach to both sides of a plexiglass enclosure or window, where they are held by two retaining flanges. A removable sleeve in the ball may be withdrawn to permit use of a gun camera in this mount.

### CHARACTERISTICS:

Dimensions . . . . . approximately 5¾ by 5¾ by 7½ inches.  
Weight . . . . . approximately 4¼ pounds.



RELATIONSHIP OF PARTS: Used with:

A .30 caliber M2 flexible machine gun, A. E. Reference Number 93-1520.

### ARMY

A. E. REFERENCE NUMBER: 52-3800

#### SPECIFICATIONS:

Detail . . . . . 93-24655  
Superseded . . . . . 24655

A. A. F. DRAWING NUMBER: 40G6567

TYPE DESIGNATION K-1

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type K-3 ball and socket gun mount, A. E. Reference Number 52-3950.

SHIPPING DATA: Shipped as a complete unit.

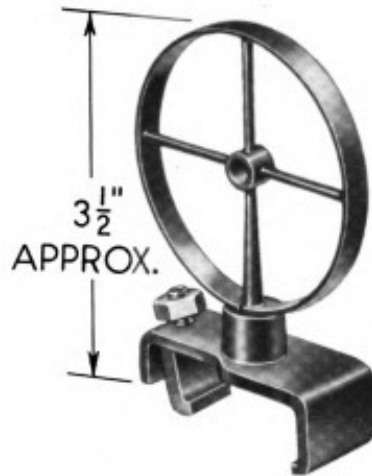
### NAVY

There is no Navy equivalent for the Army item.

**ALL MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number	Remarks
Moore-Eastwood and Company	*K-1	**40G6567	A-B	5200473350	150J/18	
	*K-2	**41B5641	A-B	5200473370	150J/27	Ball mount only. Requires adapter.
Iron Fireman Manufacturing Company	*K-1	**40G6567	A-B	5200473350	150J/18	
	*K-2	**41B5641	A-B	5200473370	150J/27	Ball mount only. Requires adapter.
	*K-2A	**41B10360	A-B	5200473380	150J/19	Ball mount only. Requires adapter. Non-removable sleeve.
Anetsberger Brothers Incorporated	*K-2A	**41B10360	A-B	5200473380	150J/19	Ball mount only. Requires adapter. Non-removable sleeve.
Ainsworth Manufacturing Company	*K-3	AG-150	A-B	5200473385	150J/51	Ball mount only. Requires adapter. Non-removable sleeve.

Note: \*AAF type; \*\*AAF drawing.



**SIGHT—FLEXIBLE GUN RING**  
ARMY TYPE B-10 NAVY—SEE BELOW

NAMES: Flexible gun ring sight  
Gun ring sight  
Ring sight  
.30 caliber gun ring sight

DESCRIPTION: The type B-10 flexible gun ring sight is used on flexibly mounted .30 caliber M2 machine guns. It is usually employed with an A-4 flexible gun post sight.

The gun ring sight is made of rust-proof steel which is given a dull finish to prevent reflection. It consists of two concentric rings and an adjustable clamp. The larger ring is connected to a metal post mounted on the clamp. The smaller ring, or center peep, is supported from the larger ring, and contains two cross hairs which are used to align the bead on the post sight with the target. The clamp, consisting of a horizontal bar with two hooked lugs, secures the sight to the cover plate of the machine gun. When in position, the ring sight will be approximately eight inches from the gunner's eye.

CHARACTERISTICS:

Dimensions..... approximately 3 1/2 by 2 3/8 by 1/8 inches  
Weight..... approximately 1/4 pound  
Large ring (inside diameter)..... approximately 2 1/4 inches  
Small ring (inside diameter)..... approximately 1/2 inch

RELATIONSHIP OF PARTS: Used with:

Army type A-4 flexible gun post sight, A. E. Reference Number 52-4600 on a .30 caliber M2 machine gun, A. E. Reference Number 93-1520.

**ARMY**

A. E. REFERENCE NUMBER: 52-4900

SPECIFICATIONS:

Detail..... 93-24587

A. A. F. DRAWING NUMBER: 37B3574

TYPE DESIGNATION: B-10

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

TYPE DESIGNATION: B-10

BU. ORD. DRAWING NUMBER: 297061

AVIATION ORDNANCE STOCK LIST NUMBER: 2-S-3106

ORDNANCE PAMPHLET NUMBER: 263 and 865

PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
Pausin Manufacturing Company	*B-10	**37B3574	A-N-B	5200728700	108B/18
International Register Company	*B-10	**37B3574	A-N-B	5200728700	108B/18

Note: \*AAF type; \*\*AAF drawing.



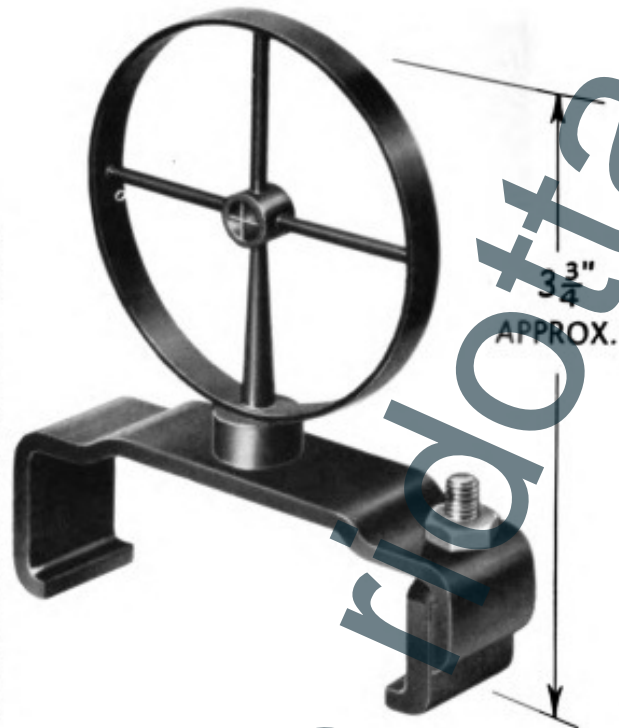


### SIGHT—FLEXIBLE GUN RING ARMY TYPE B-11 NAVY—SEE BELOW

- NAMES: Flexible gun ring sight  
 Gun ring sight  
 Ring sight  
 .50 caliber gun ring sight  
 Sight, open, rear ring (Navy)

DESCRIPTION: The type B-11 flexible gun ring sight is used on flexibly mounted .50 caliber M2 machine guns. It is usually employed with an A-5 flexible gun post sight.

The gun ring sight is made of rust-proof steel which is given a dull finish to prevent reflection. It consists of two concentric rings and an adjustable clamp. The larger ring is welded to a metal post mounted on the clamp. The smaller ring, or center peep, is supported from the larger ring, and contains two cross hairs which are used to align the bead of the post sight with the target. The clamp, consisting of a horizontal bar with two hooked lugs, secures the sight to the cover plate of the machine gun. When in position, the sight will be approximately eight inches from the gunner's eye.



CHARACTERISTICS:

- Dimensions..... approximately 3 1/8 by 2 5/8 by 3 3/4 inches  
 Weight..... approximately 1/2 pound  
 Large ring (inside diameter)..... approximately 2 3/8 inches  
 Small ring (inside diameter)..... approximately 1 1/2 inch

RELATIONSHIP OF PARTS: Used with:

Army type A-5 flexible gun post sight, A. E. Reference Number 52-4700 on a .50 caliber M2 machine gun, A. E. Reference Number 93-1590.

ARMY

A. E. REFERENCE NUMBER: 52-5000

SPECIFICATIONS:

Detail..... 93-24588

A. A. F. DRAWING NUMBER: 37A5811

TYPE DESIGNATION: B-11

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type B-15 ring sight, A. E. Reference Number 52-5110

SHIPPING DATA: Shipped as a complete unit.

NAVY

TYPE DESIGNATION: B-11

BU. ORD. DRAWING NUMBER: 297057

AVIATION ORDNANCE STOCK LIST NUMBER: 2-S-3107

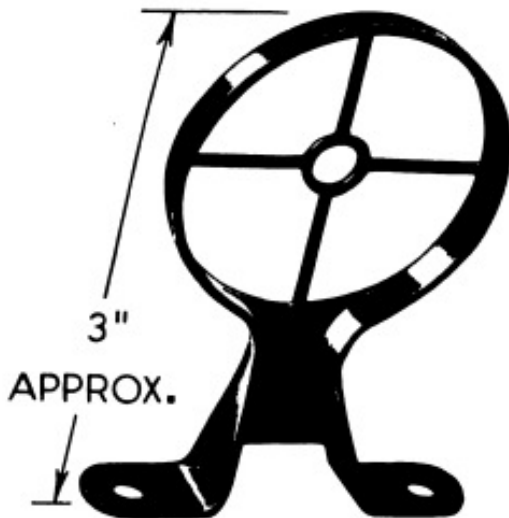
ORDNANCE PAMPHLET NUMBERS: 263 and 865

PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
International Register Company	*B-11	**37A5811	A-N-B	5200729000	108B / 4
American Signal Corporation	*B-11	**37A5811	A-N-B	5200729000	108B / 4

Note: \*AAF type; \*\*AAF drawing.



**SIGHT—FLEXIBLE GUN RING**  
**ARMY TYPE B-13**

**NAMES:** Flexible gun ring sight  
Gun ring sight  
Ring sight  
.50 caliber gun ring sight

**DESCRIPTION:** The Army type B-13 flexible gun ring sight is used on flexibly mounted .50 caliber M2 machine guns. It is usually employed with an A-11 flexible gun post sight.

The gun ring sight is made of rust-proof steel, which is given a dull finish to prevent reflection. It consists of two concentric rings mounted on a bracket which is bolted directly to the rear of the gun mount assembly, approximately eight inches from the gunner's eye.

**CHARACTERISTICS:**

Dimensions .....	approximately 3 by 2 $\frac{3}{8}$ by $\frac{5}{8}$ inches
Weight .....	approximately 1 ounce
Large ring (inside diameter) .....	approximately 1 $\frac{3}{4}$ inches
Small ring (inside diameter) .....	approximately $\frac{1}{4}$ inch

**RELATIONSHIP OF PARTS:** Used with:

Army type A-11 flexible gun post, A. E. Reference Number 52-4850 on a .50 caliber M2 machine gun, A. E. Reference Number 93-1590, mounted on an Army type E-8 gun mount adapter, A. E. Reference Number 52-1100.

**ARMY**

A. E. REFERENCE NUMBER: 52-5050

**SPECIFICATIONS:**

Detail .....	93-24759
Superseded .....	24759

**MANUFACTURER:** Ohio Art Company.

**A. A. DRAWING NUMBER:** 42B8318

**TYPE DESIGNATION:** B-13

**A. S. C. STOCK NUMBER:** 5200729115

**TECHNICAL ORDER NUMBER:** 11-35-13

**PRODUCTION STATUS:** Under procurement.

**SHIPPING DATA:** Shipped as a complete unit.

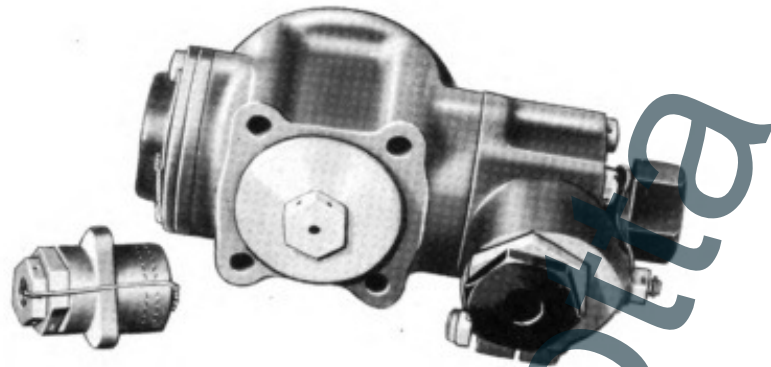
**NAVY**

There is no Navy equivalent for the Army item.

**BRITISH**

**REFERENCE NUMBER:** 105B 75

Dimensional data and technical specifications overlaid on the page.



**GENERATOR—GUN SYNCHRONIZER IMPULSE**  
**ARMY TYPE E-8 NAVY—SEE BELOW**

NAMES: Gun synchronizer impulse generator  
 Synchronizer—gun impulse generator

DESCRIPTION: The Army type E-8 gun synchronizer impulse generator is part of the synchronizing system which is used to control the firing of .30 and .50 caliber M2 machine guns. This unit generates the timed mechanical impulses which enable the trigger motor to fire the gun.

The major parts of the impulse generator unit are a housing, a cam, an eccentric sleeve and a reciprocating cam follower. The cam is rotated at propeller speed and contains one, two, or three lobes for use with either a two, three, or four bladed propeller. A solenoid, actuated by the control handle gun switch, retracts a plunger from the shoulder of the cam follower and allows the follower to be pulled against the cam. Rotation of the cam then produces a series of mechanical impulses.

**CHARACTERISTICS:**

Dimensions ..... approximately 6 1/8 by 3 1/2 by 3 inches.  
 Weight ..... approximately 2 1/4 pounds.

**RELATIONSHIP OF PARTS:** Used with:

Army type E-3 impulse unit, A. E. Reference Number 52-2600, Army type E-3A trigger motor, A. E. Reference Number 52-3000, and Army type G-10 gun firing solenoid, A. E. Reference Number 52-6300.

**ARMY**

A. E. REFERENCE NUMBER: 52-2700

**SPECIFICATIONS:**

Detail ..... 93-24609A  
 Superseded ..... 93-24609

A. A. F. DRAWING NUMBER: 38D4828

TYPE DESIGNATION: E-8

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

TYPE DESIGNATION: E-8

**SPECIFICATIONS:**

General ..... M-460

BU. AER. DRAWING NUMBER: W. A. C. 114081, 114081-N-1, or Ranger 7588

BU. AER. F. S. S. C. STOCK NUMBER: R-86-G-37010

ORDNANCE PAMPHLET NUMBER: 552

BU. AER. CIRCULAR LETTER NUMBER: Aer-Ma-12431-EG-F41-14

PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Metal Specialty Company	*E-8	**38D4828	A-N-B	5200291050	11-20-13	108A 161
Moore-Eastwood and Company	*E-8	**38D4828	A-N-B	5200291050	11-20-13	108A 161

Note: \*AAF type; \*\*AAF drawing.



**ENDS—IMPULSE UNIT**  
**ARMY TYPE E-3 NAVY MARK 1**

**NAMES:** Impulse unit ends  
Cable ends—impulse, BAM, —.30 and .50 caliber (Navy)  
Impulse tube and wire ends

**DESCRIPTION:** These are the end fittings and couplings of the gun synchronizer's impulse tube and wire unit which connects the impulse generator to the trigger motor. The impulse tube and wire unit consists of a steel tube, a single strand of steel wire and the necessary couplings and fittings. The airplane contractor furnishes the wire and tubing. The end fittings and couplings are provided by the Government.

**CHARACTERISTICS:**

**Dimensions:**

End for type E-8 impulse generator..... approximately 4 1/2 by 1 1/4 by 1 1/4 inches.

End for type E-3A trigger motor..... approximately 1 1/4 by 1 1/16 by 1 1/16 inches.

**Weight:**..... approximately 1 pound (together).

**RELATIONSHIP OF PARTS:** Used with:

Army type E-8 impulse generator, A. E. Reference Number 52-2700, and Army type E-3A trigger motor, A. E. Reference Number 52-3000.

**ARMY**

A. E. REFERENCE NUMBER: 52-2600

**SPECIFICATIONS:**

Detail..... 93-24592

Superseded..... 24592

A. A. F. DRAWING NUMBER: 076031 and H35G5394

**TYPE DESIGNATION:** E-3

**A. S. C. STOCK NUMBER:** Refer to chart.

**TECHNICAL ORDER NUMBER:** Refer to chart.

**PRODUCTION STATUS:** Under procurement.

**SHIPPING DATA:** Shipped as a complete unit, consisting of one impulse generator end and one trigger motor end packed together.

**NAVY**

**TYPE DESIGNATION:** Mark 1

**BU. ORD. DRAWING NUMBER:** Assembly, 163658; Installation, 300936

**AVIATION ORDNANCE STOCK LIST NUMBER:** 1-C-60

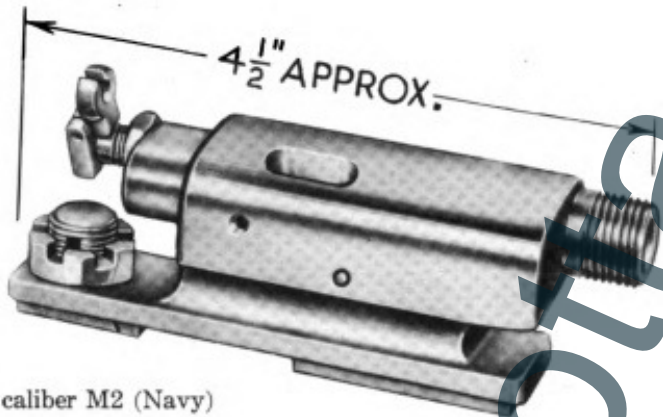
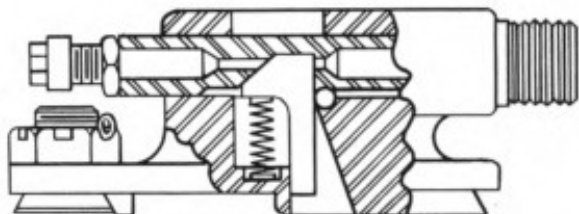
**PUBLICATIONS:** O. P. 865, O. P. 552, OCL V-54

**PROCUREMENT STATUS:** Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Tietzman Engineering Company	*E-3	**076031	A-N-B	5200250600	11-20-13	108A 37
Johnson Fare Box Company	*E-3	**076031	A-N-B	5200250600	11-20-13	108A 37

NOTE: Ends listed above are identical to Navy Mark 1, except that Navy furnishes ends complete with wire.  
Note: \*AAF type; \*\*AAF drawing.



**MOTOR—TRIGGER**  
**ARMY TYPE E-3 NAVY MARK 1**

**NAMES:** Trigger motor  
Motor—trigger, BAM—.30 and .50 caliber M2 (Navy)  
Synchronizer trigger motor

**DESCRIPTION:** This trigger motor, mounted on the side of synchronized .30 and .50 caliber M2 fixed machine guns, is actuated by the timed impulses transmitted along the impulse wire from the impulse generator. It consists of a steel housing containing a slide, slide spring, 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 upward and into the gun. This trips the firing mechanism. An adjusting screw is used to vary the distance the slide may project into the gun.

**CHARACTERISTICS:**  
Dimensions.....approximately 4½ by 1½ by 1¼ inches.  
Weight.....approximately 7/8 pound.

**RELATIONSHIP OF PARTS:** Used with:  
Type E-8 gun synchronizer impulse generator, A. E. Reference Number 52-2700, and Army type E-3 impulse unit ends, A. E. Reference Number 52-2600.

**ARMY**

A. E. REFERENCE NUMBER: 52-2900  
**SPECIFICATIONS:**  
Detail.....93-24593  
A. A. F. DRAWING NUMBER: 076023  
**TYPE DESIGNATION:** E-3  
A. S. C. STOCK NUMBER: Refer to chart.  
**TECHNICAL ORDER NUMBER:** Refer to chart.  
**PRODUCTION STATUS:** Not under procurement for initial installation. Superseded by Army type E-3A trigger motor, A. E. Reference Number 52-3000.  
**SHIPPING DATA:** Shipped as a complete unit.

**NAVY**

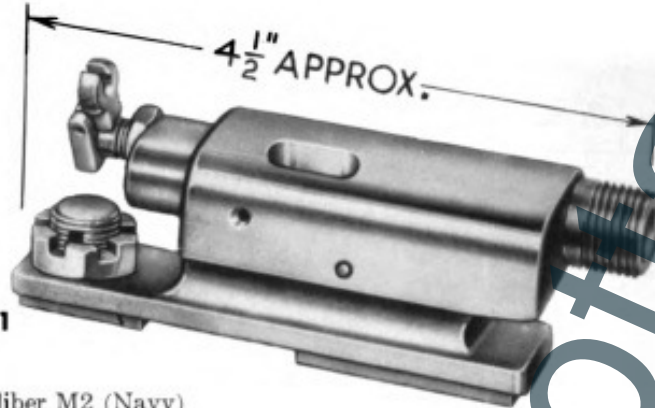
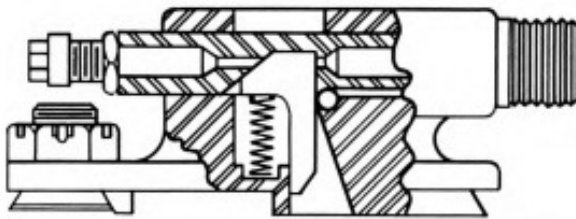
**TYPE DESIGNATION:** Mark 1  
**BU. ORD. DRAWING NUMBER:** 178474  
**AVIATION ORDNANCE STOCK LIST NUMBER:** 1-M-619  
**ORDNANCE PAMPHLET NUMBER:** 865; 552  
**PROCUREMENT STATUS:** Not under procurement for initial installation.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
L. A. B. Corporation	*E-3	**076023	A-B	5200465600	11-20-11	108A/1
	*E-3A	**4283980	A-B	5200239040	11-20-15	108A/158
John Oster Manufacturing Company	*E-3	**076023	A-B	5200465600	11-20-11	108A/1
	*E-3A	**4283980	A-B	5200239040	11-20-15	108A/158
Argus Manufacturing Company	†Mark 1	††178474	N			
Crown Cork & Seal Company	†Mark 1, Mod. 1	††227622	N			§

Note: §Same as E-3A, except for 0.0017 inch difference in housing; \*AAF type; \*\*AAF drawing; †Navy type; ††Navy drawing.

SYNCHRONIZERS  
ARMAMENT—GUNNERY



**MOTOR—TRIGGER**  
ARMY TYPE E-3A NAVY MARK 1 MOD. 1

NAMES: Trigger motor  
Motor—trigger, BAM—.30 or .50 caliber M2 (Navy)  
Synchronizer trigger motor

DESCRIPTION: This trigger motor, mounted on the side of synchronized .30 and .50 caliber M2 fixed machine guns, is actuated by the timed impulses transmitted along the impulse wire from the 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 upward and into the gun. This trips the firing mechanism. An adjusting screw is used to vary the distance the slide may project into the gun.

This trigger motor is the same type as the type E-3, except for modification of the plunger and slide. The length of the slide has been shortened 0.010 inch to prevent the gun from firing too close to the propeller blades. A relief has also been added to the top side of the plunger, to limit extent of over-travel.

CHARACTERISTICS:

Dimensions..... approximately 4 1/2 by 1 1/2 by 1 3/4 inches.  
Weight..... approximately 1/8 pound.

RELATIONSHIP OF PARTS: Used with:

Type E-8 gun synchronizer impulse generator, A. E. Reference Number 52-2700, and Army type E-3 impulse unit ends, A. E. Reference Number 52-2600.

ARMY

A. E. REFERENCE NUMBER: 52-3000

SPECIFICATIONS:

Detail..... 93-24593A  
Superseded..... 93-24593

A. A. F. DRAWING NUMBER: 42B3980

TYPE DESIGNATION: E-3A

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

NAVY

TYPE DESIGNATION: Mark 1 Mod. 1

BU. ORD. DRAWING NUMBER: 227622

AVIATION ORDNANCE STOCK LIST NUMBER: 1-M-621-200

ORDNANCE PAMPHLET NUMBER: 865; 552

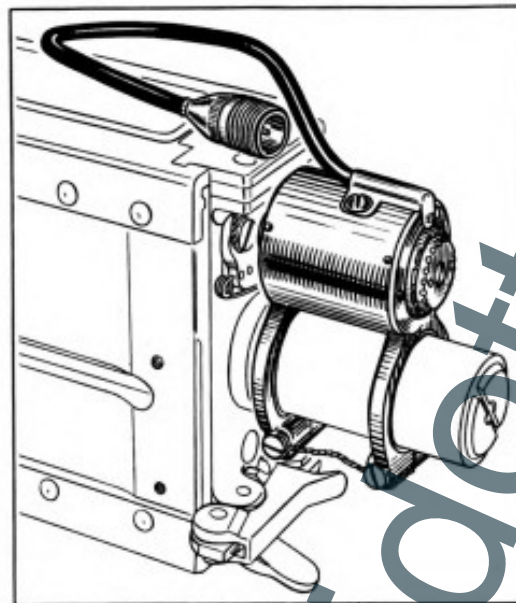
ORDNANCE CIRCULAR LETTER: V-7-43

PROCUREMENT STATUS: Under procurement.

**ALL MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
L. A. B. Corporation	*E-3A	**42B3980	A-B	5200239040	11-20-15	108A/158	
	*E-3	**076023	A-B	5200465600	11-20-11	108A/1	
John Oster Manufacturing Company	*E-3A	**42B3980	A-B	5200239040	11-20-15	108A/158	
	*E-3	**076023	A-B	5200465600	11-20-11	108A/1	
Crown Cork & Seal Company	‡Mark 1, Mod. 1	‡‡227622	N				§
Argus Manufacturing Company	‡Mark 1	‡‡227622	N				

Note: §Same as E-3A except for 0.0017 inch difference in housing; \*AAF type; \*\*AAF drawing; †Navy type; ‡‡Bu. Ord. drawing.



### SOLENOID—GUN

ARMY TYPE G-11 NAVY MARK 7 MODIFICATION 1

NAMES: Gun solenoid  
Gun firing solenoid

Firing solenoid  
Electric trigger control (Navy)

DESCRIPTION: The G-11 solenoid, used for the electrical trigger control of free firing .50 caliber, model M2 machine guns, is mounted on a bracket attached to the buffer tube of the gun. A movable plunger is connected to the trigger arm. When the solenoid is energized by pressing the firing switch, magnetic forces in the core of the solenoid coil attract the plunger, 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. The coil is connected to the battery system by a long conduit extension with a female connector on the free end. This connector is the single-prong screw-on type.

#### CHARACTERISTICS:

Dimensions	approximately 3 1/4 by 3 3/4 by 1 7/8 inches.
Weight	approximately 1 1/3 pounds.
Operating voltage	24 volts, direct current.
Current drain	5 1/2 amperes.
Plunger stroke	0.062 inches.

#### RELATIONSHIP OF PARTS: Used with:

Army type A-1 manual trigger, A. E. Reference Number 52-7075, on a .50 caliber M2 machine gun, A. E. Reference Number 93-1560.

#### ARMY

A. E. REFERENCE NUMBER: 52-6350

#### SPECIFICATIONS:

Detail	93-24746
Superseded	24746

TYPE DESIGNATION: G-11

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

#### NAVY

TYPE DESIGNATION: Mark 7 Mod. 1

BU. ORD. SKETCH NUMBER: 99030

AVIATION ORDNANCE STOCK LIST  
NUMBER: 1-C-5463

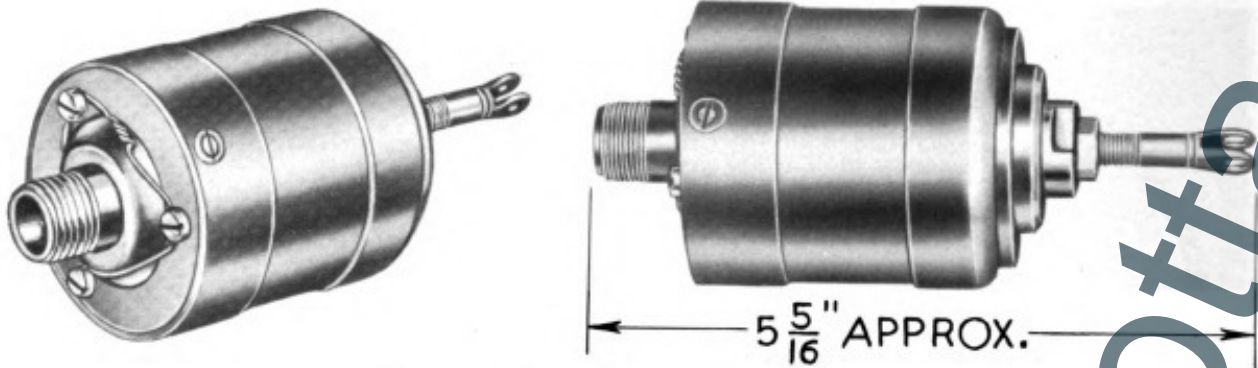
ORDNANCE PAMPHLET NUMBER: 865

PROCUREMENT STATUS: Under procurement.

**ALL MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Webster Electric Company	*G-11	**93-24746 Detail Specification	A-B	5200752867	11-1-30	105D/59
Magnavox Company, Incorporated	*G-11 †Mark 7, Mod. 1	**14D5G3 ††99030	A-B N	5200752867	11-1-30	105D/59

Note: \*AAF type; \*\*AAF drawing; †Navy type; ††Navy drawing.



**SOLENOID—GUN**  
**ARMY TYPE G-13**

**NAMES:** Gun solenoid  
Gun firing solenoid  
Firing solenoid  
Solenoid

**DESCRIPTION:** The Army type G-13 solenoid, used for electrical trigger control of a remotely placed 37 mm automatic cannon, is mounted on a bracket at the rear of the gun. A movable plunger in the solenoid is linked to the firing mechanism. When the solenoid is energized by pressing a firing switch, magnetic forces in the core of the solenoid coil attract the plunger, 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.

The electrical connector is the single pin screw-on type.

**CHARACTERISTICS:**

Dimensions	approximately 5 <sup>5</sup> / <sub>16</sub> by 2 <sup>1</sup> / <sub>4</sub> by 2 <sup>1</sup> / <sub>4</sub> inches.
Weight	approximately 2 <sup>1</sup> / <sub>4</sub> pounds.
Operating voltage	24 volts direct current.
Current drain	10 amperes.
Plunger stroke	0.250 inches.
Electrical connector	Army part number 41A9227 (identical to AN3102-10S-2P).

**RELATIONSHIP OF PARTS:** Used with:  
37 mm M4 automatic gun, A. E. Reference Number 93-1280.

**ARMY**

A. E. REFERENCE NUMBER: 52-6360

**SPECIFICATIONS:**

Detail ..... 24754

A. A. F. DRAWING NUMBER: 42B7343

TYPE DESIGNATION: G-13

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type G-15, A. E. Reference Number 52-6370.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

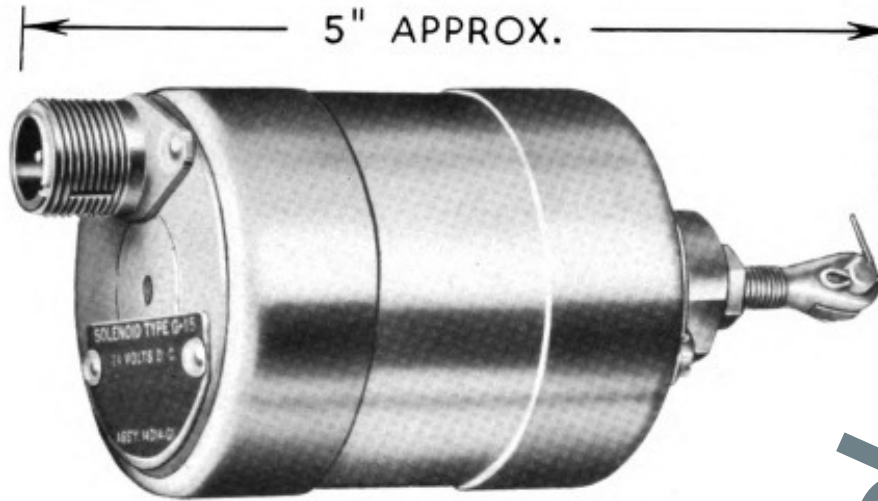
There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Webster Electric Company	*G-13	**42B7343	A-B	5200752870	11-1-30	105D/196
Magnavox Company, Incorporated	*G-15	14D14G1	A-B	5200752890	11-1-30	105D/91

Note: \*AAF type; \*\*AAF drawing.





**SOLENOID—GUN**  
**ARMY TYPE G-15**

**NAMES:** Gun solenoid  
Gun firing solenoid  
Firing solenoid  
Solenoid

**DESCRIPTION:** The Army type G-15 solenoid is used for electrical trigger control of a remote 37 mm automatic gun. The solenoid is mounted on a bracket at the rear of the cannon. When the solenoid is energized by depressing a firing switch, magnetic forces in the core of the coil attract a movable plunger, release the sear, and fire the gun. Release of the firing switch opens the solenoid circuit and a spring returns the plunger to its original position, causing the gun to cease firing.

The electrical connector is a single pin screw-on type.

**CHARACTERISTICS:**

Dimensions.....	approximately 5 by 2¼ by 2¼ inches.
Weight.....	approximately 2½ pounds.
Operating voltage.....	24 volts, direct current.
Current drain.....	10 amperes.
Plunger stroke.....	¾ inch.
Electrical connector.....	AN3102-10S-2P.

**RELATIONSHIP OF PARTS:** Used with:  
37 mm M4 automatic gun, A. E. Reference Number 93-1280.

**ARMY**

A. E. REFERENCE NUMBER: 52-6370

**SPECIFICATIONS:**

Detail.....	93-24764
Superseded.....	24764

A. A. F. DRAWING NUMBER: Detail specification 93-24764

TYPE DESIGNATION: G-15

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

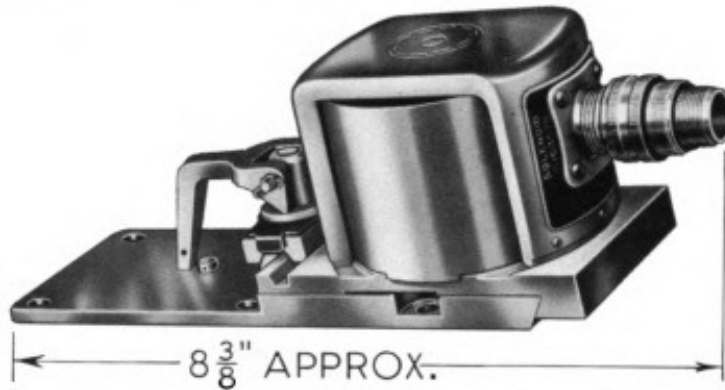
**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
Magnavox Company, Incorporated	*G-15	.14D14G1	A-B	5200752890	11-1-30	105D/91
Webster Electric Company	*G-13	**A2B7343	A-B	5200752870	11-1-30	105D/196

Note: \*AAF type; \*\*AAF drawing.



# GUN SOLENOIDS ARMAMENT—GUNNERY



## TRIGGER—ELECTRIC AN-M1

FORMER ARMY TYPE G-17      FORMER NAVY MARK 6, MOD. 1

NAMES: Electric trigger      Gun solenoid      Electric trigger control (Navy)  
Solenoid—cannon      Gun firing solenoid

DESCRIPTION: The Ordnance AN-M1 electric trigger, used for electrically controlling the fire of a 20-mm cannon, is mounted on a bracket on the bottom of the gun. The solenoid body is mounted perpendicular to a 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, in the core of the solenoid coil, attract the plunger, 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.

The sear cover plate assembly and the solenoid body comprise the complete AN-M1 electric trigger, which was formerly known as the Army type G-17 gun firing solenoid, and the Navy Mark 6, Mod. 1 electric trigger control. The electrical connector is the single pin screw-on type.

### CHARACTERISTICS:

Dimensions.....	approximately 8 3/8 by 2 3/4 by 2 7/8 inches.
Weight.....	approximately 5 1/2 pounds.
Operating voltage.....	24 volts direct current.
Current drain.....	10 amperes.
Plunger stroke.....	5/16 inch.
Electrical connector.....	AN3102-10S-2P.

RELATIONSHIP OF PARTS: Used with: M1 or AN-M2 20-mm automatic gun.

### ARMY

A. E. REFERENCE NUMBER: 52-6380

#### SPECIFICATIONS:

Detail..... 24808 (type G-17)

A. A. F. DRAWING NUMBER: H43G10990

TYPE DESIGNATION: AN-M1

FORMER ARMY TYPE: G-17

PRODUCTION STATUS: Under procurement by Ordnance Office, War Department.

SHIPPING DATA: Normally shipped as an integral part of 20-mm gun (see A. E. Reference Number 93-1351 to 93-1355). Formerly shipped as a separate unit.

### NAVY

TYPE DESIGNATION: AN-M1 (Formerly Mark 6 Mod. 1)

BU. ORD. DRAWING NUMBER: SK 99028

AVIATION ORDNANCE STOCK LIST NUMBER: Refer to chart.

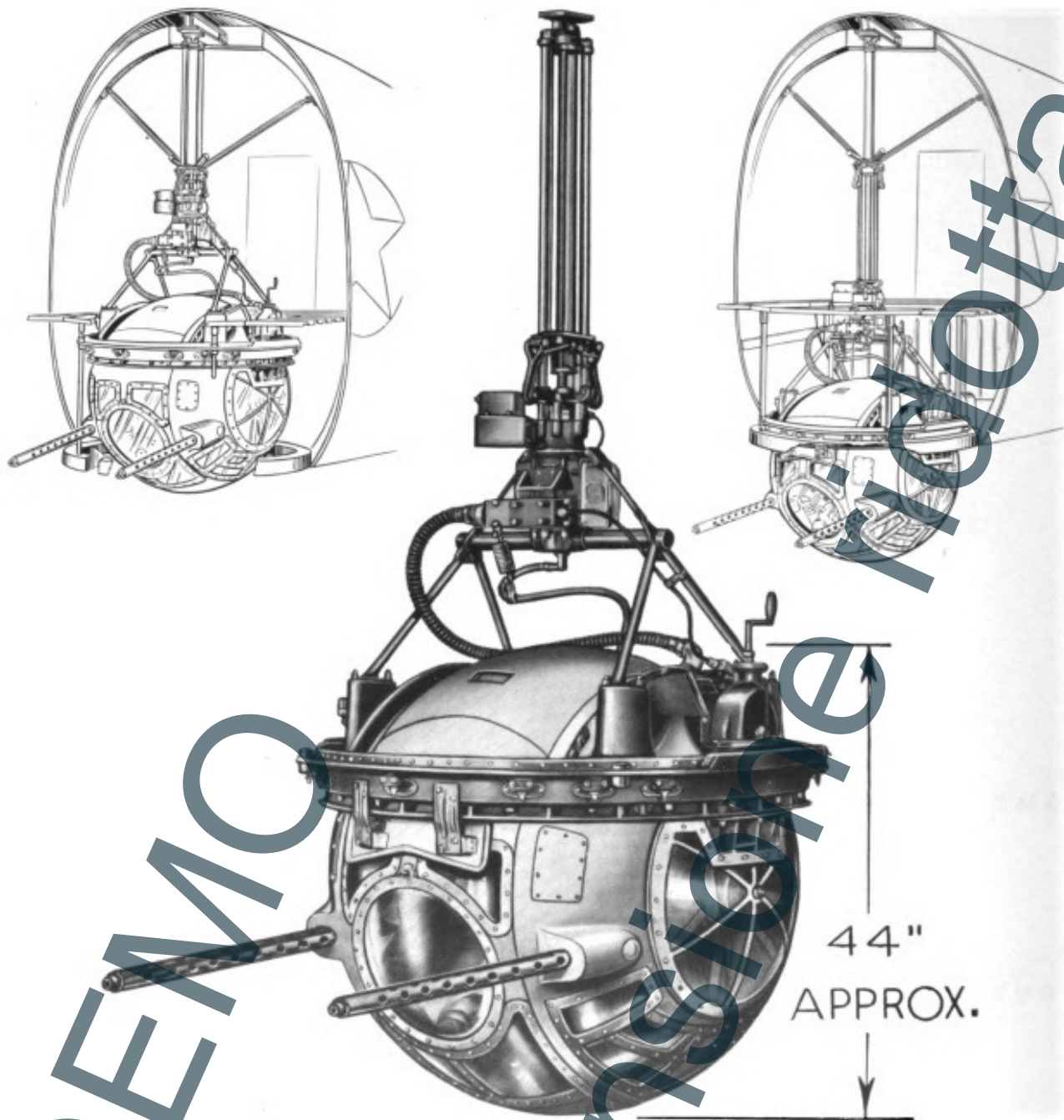
ORDNANCE PAMPHLET NUMBER: 865

PROCUREMENT STATUS: Under procurement.

**ALL MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Aviation Ordnance Stock List Number	Remarks
Ordnance Office War Department	†AN-M1	C70766	A-N-B			105D/13	1-T-2890	
Magnavox Company, Incorporated	*G-17	14D22G3	A-N-B			105D/13	1-C-5460-75	
	*G-8	14D2G1	A-B	5200752845	11-1-30 11-1-37	105D/36		§
	‡Mark 6, Mod. 1 (AN-M1)	14D22G3	N				1-C-5460-5	

Note: §Only when height of this solenoid does not interfere with airplane structure; †Army-Navy standard type; \*AAF type; ‡Navy type.



**TURRET—RETRACTABLE LOWER GUN**

ARMY TYPE A-13 NAVY—SEE BELOW

NAMES: Retractable lower gun turret  
Turret—lower gun—retractable—44 inch ball  
Briggs retractable ball turret

Lower gun turret—local control—retractable  
(British)  
Lower ball local control turret—retractable

DESCRIPTION: The Army type A-13 turret, which mounts two .50 caliber M2 machine guns, is supported by a framework suspended from an hydraulic cylinder inside the top of the fuselage. The cylinder piston moves up and down through a 28-inch stroke to raise or lower the turret. In case of failure of the turret hydraulic system, two pins on the flange of the cylinder guide provide auxiliary means of

(Continued on page 159)



## TURRET—RETRACTABLE LOWER GUN

(Continued from page 158)

retraction if fastened to the bomb hoist. A Vickers electro-hydraulic unit enables the turret to rotate in any direction. In the event of power failure, the turret can be moved manually by the gunner.

The guns, which are fixed in relation to the turret, are charged individually by manual chargers, and fired by pressing a button on the turret control handle.

The gunner is housed entirely inside the spherical structure comprising the turret enclosure, and armor plate provides for his protection. He sights through an automatic compensating sight and the turret, guns, sight, and gunner move as a unit while tracking the target.

Slip rings in the hangar assembly bring electrical power into the turret for operation of the Vickers unit, gunsight, interphone, trouble-light, and other equipment. An outlet and controlling rheostat inside the turret are provided for the gunner's electrically heated suit.

### CHARACTERISTICS:

- Turret ring diameter ..... approximately 47 1/4 inches.
- Turret height ..... approximately 131 5/8 inches extended; 104 1/8 inches retracted.
- Weight ..... approximately 780 pounds.
- Rotation in azimuth ..... 360 degrees.
- Rotation in elevation ..... 85 degrees from vertical.
- Operating voltage ..... 27.5 volts direct current.

### RELATIONSHIP OF PARTS:

A complete list of all turret equipment whether government or contractor furnished, will be found in the turret manufacturer's model specification.

### ARMY

- A. E. REFERENCE NUMBER: 52-8050
- TYPE DESIGNATION: A-13
- A. S. C. STOCK NUMBER: Refer to chart.
- TECHNICAL ORDER NUMBER: Refer to chart.
- PRODUCTION STATUS: Under procurement.
- SHIPPING DATA: Shipped as a complete unit, less guns, ammunition, and compensating sight.

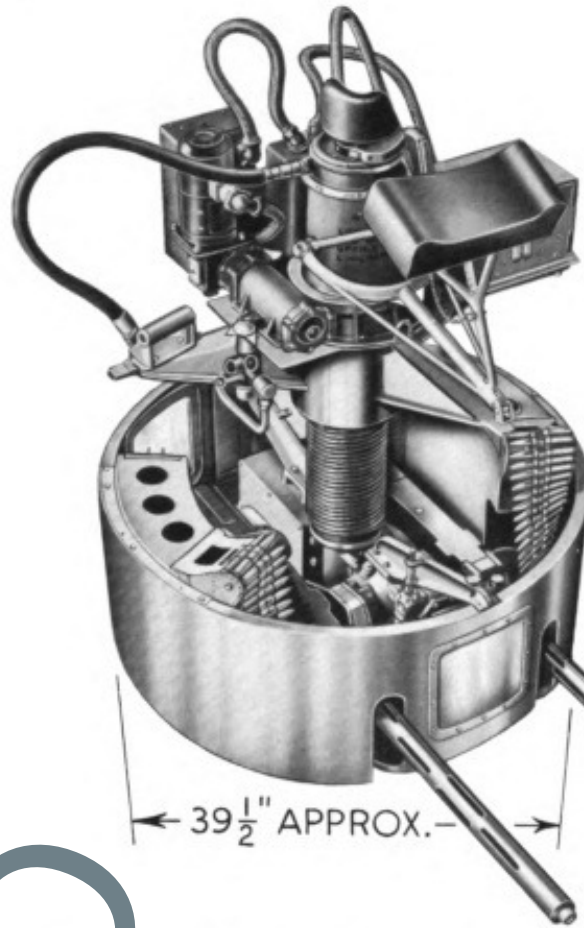
### NAVY

The Navy uses this turret on airplanes procured from the Army.

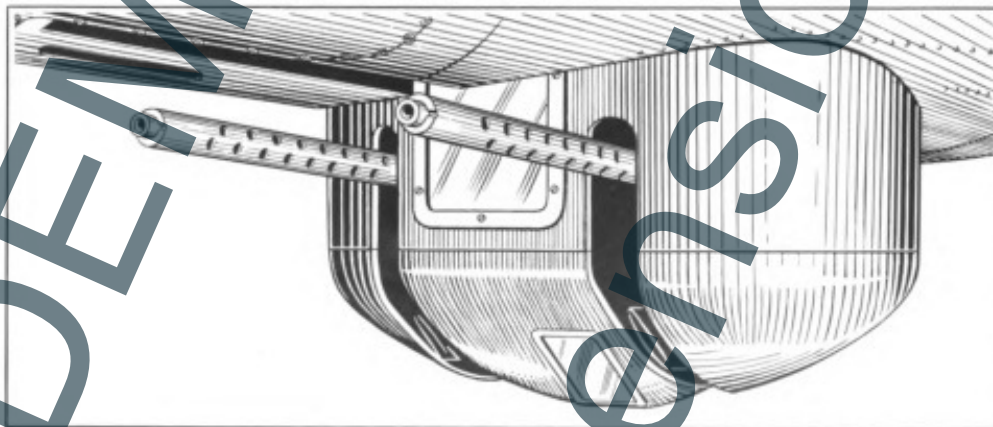
**ALL MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Manufacturer's Specification	Remarks
Briggs Manufacturing Company	A-13	30000	A-B	5400963110		150A/31	BR-BT-7R	
	A-2	1300	A-B	5400963065	11-45C-1	150A/4	S-69808	§
Sperry Gyroscope Company	A-2	645796	A-B	5400963090	11-45C-1	150A/4	S-69808	§
Emerson Electric Manufacturing Company	A-2	205955M	A-B	5400963065	11-45C-1	150A/4	S-69808	§

Note: §The ball of this turret is identical with Army type A-13 but a conversion kit is required to convert the hangar assembly. Uses a different fire interrupter.  
Note: \*AAF type.



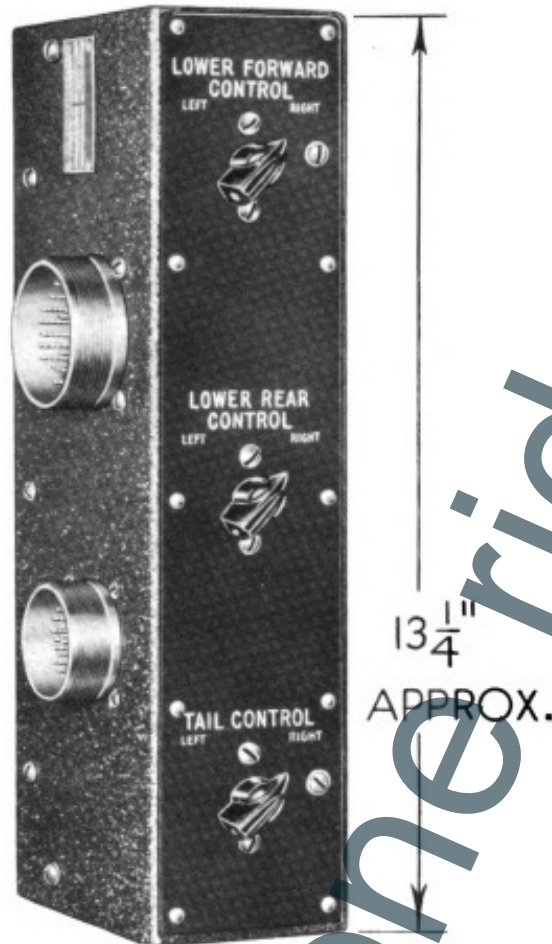
**TURRET—LOWER GUN**  
ARMY TYPE A-5 NAVY—SEE BELOW



NAMES: Lower gun turret  
Retractable lower gun turret—Bendix  
Bendix lower gun turret  
Power operated lower gun turret  
Turret—lower gun—retractable

DESCRIPTION: The Army type A-5 turret, a retractable structure mounting two .50 caliber M2 machine guns, is supported from a central column by four spider arms. This turret is located beneath the belly of the fuselage. It is electrically operated by two drive motors, one for rotation of the turret, the other

(Continued on page 161)



**BOX—SIDE BLISTER SELECTOR SWITCH**  
GENERAL ELECTRIC COMPANY DRAWING NUMBER T-8252890, GROUP 1

NAME: Side blister selector switch box

DESCRIPTION: The side blister selector switch box, used in the B-29 central station fire control system, is accessible to the gunners at both side blister sighting stations. This box contains three manual two-position selector switches for determining which side blister sighting station shall have primary control of the lower aft gun turret, secondary control of the lower forward gun turret, and secondary control of the tail gun mount. These switches are all marked LEFT and RIGHT; indicating which side blister has control.

CHARACTERISTICS:

Dimensions..... approximately 13 1/4 by 5 7/8 by 3 7/8 inches.  
Weight..... approximately 5 pounds.

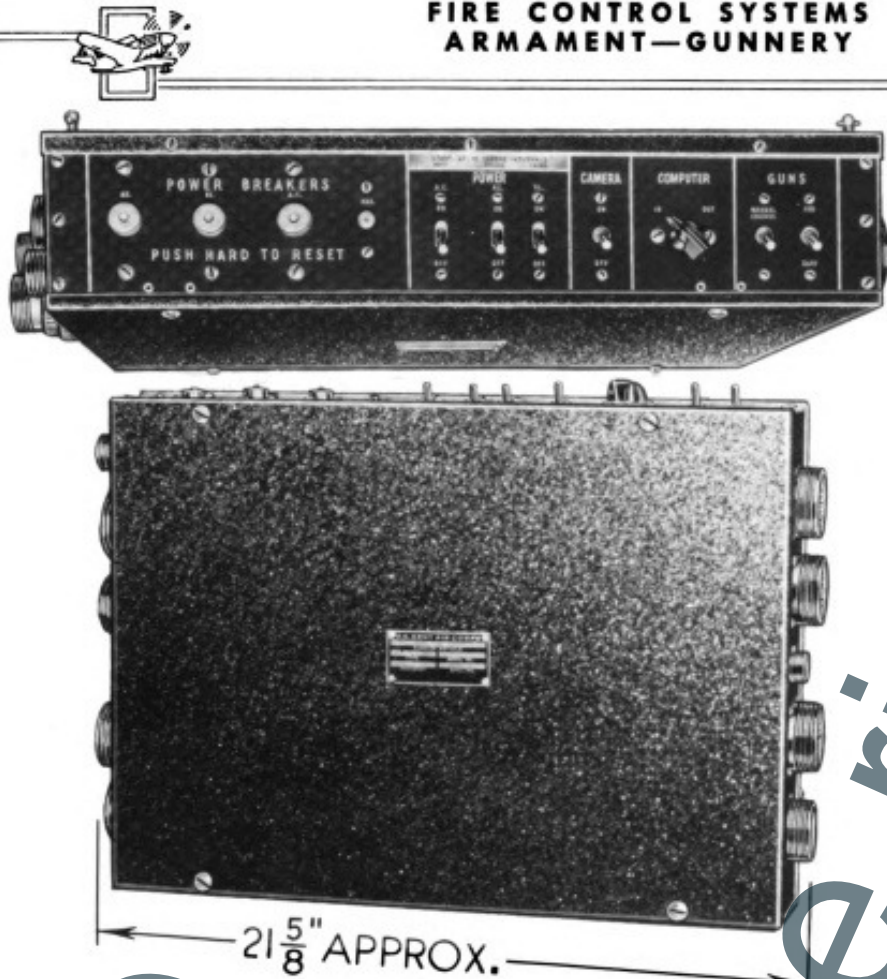
RELATIONSHIP OF PARTS: Used with:  
B-29 central station fire control system.

**ARMY**

A. E. REFERENCE NUMBER: 52-6856  
MANUFACTURER: General Electric Company.  
MANUFACTURER'S DRAWING NUMBER: T-8252890, Group 1  
MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.



**BOX-TAIL SYSTEM CONTROL**  
**GENERAL ELECTRIC COMPANY DRAWING NUMBER W-8258881, GROUP 1**

**NAME:** Tail system control box

**DESCRIPTION:** This control box is used by the gunner at the tail sighting station of the B-29 central station fire control system. It consists of power breakers and switches, and the camera, computer, and gun safety switches.

The power breakers prevent overloading the amplidyne and dynamotor for the tail gun mount.

The power switches are of the single pole double throw ON-OFF type, and control alternating current from the dynamotor and power to the tail gun mount.

The computer switches are the same type as the power switches. They control input to the computer.

The gun safety switches, also of the ON-OFF type provide fire, safe and manual charge positions for the guns in the tail gun mount.

**CHARACTERISTICS:**

Dimensions..... approximately 21 $\frac{5}{8}$  by 15 $\frac{1}{2}$  by 4 $\frac{1}{16}$  inches.  
 Weight..... approximately 35 pounds.

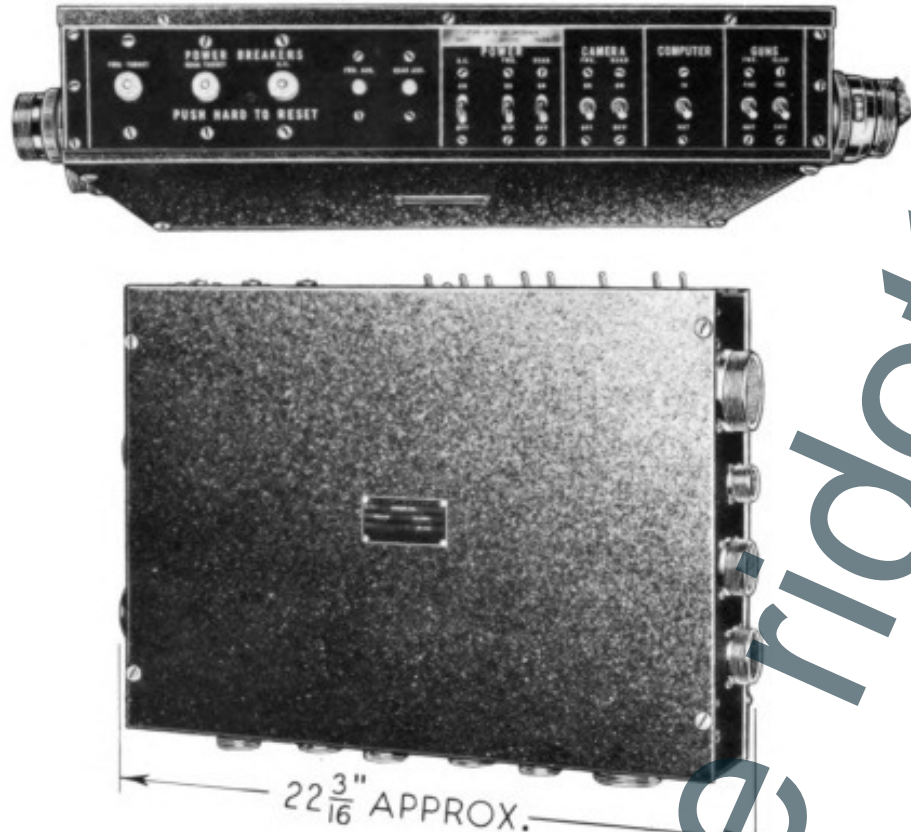
**RELATIONSHIP OF PARTS:** Used with:  
 B-29 central station fire control system.

**ARMY**

A. E. REFERENCE NUMBER: 52-6857  
 MANUFACTURER: General Electric Company  
 MANUFACTURER'S DRAWING NUMBER: W-8258881, Group 1  
 MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1  
 PRODUCTION STATUS: Under procurement.  
 SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.



**BOX—UPPER BLISTER SYSTEM CONTROL**  
**GENERAL ELECTRIC COMPANY DRAWING NUMBER W-8258865, GROUP 1**

**NAME:** Upper blister system control box

**DESCRIPTION:** This control box is installed near the gunner at the upper ring sighting station of the B-29 central station fire control system. It contains power breakers and switches, and the camera, computer, and gun safety switches.

The power breakers prevent overloading the amplidynes and dynamotors for the upper forward and rear turrets.

The power switches, of the single pole double throw ON-OFF type, control the alternating current from the dynamotor and the power supply to the upper forward and rear turrets.

The computer switches are the same type as the power switches. They control electrical input to the computer.

The gun safety switches, also of the ON-OFF type, provide FIRE and SAFE positions for the guns in the upper forward and rear turrets.

**CHARACTERISTICS:**

Dimensions.....approximately  $22 \frac{3}{16}$  by  $16 \frac{3}{16}$  by  $4 \frac{3}{16}$  inches.  
 Weight.....approximately 35 pounds.

**RELATIONSHIP OF PARTS:** Used with:  
 B-29 central station fire control system.

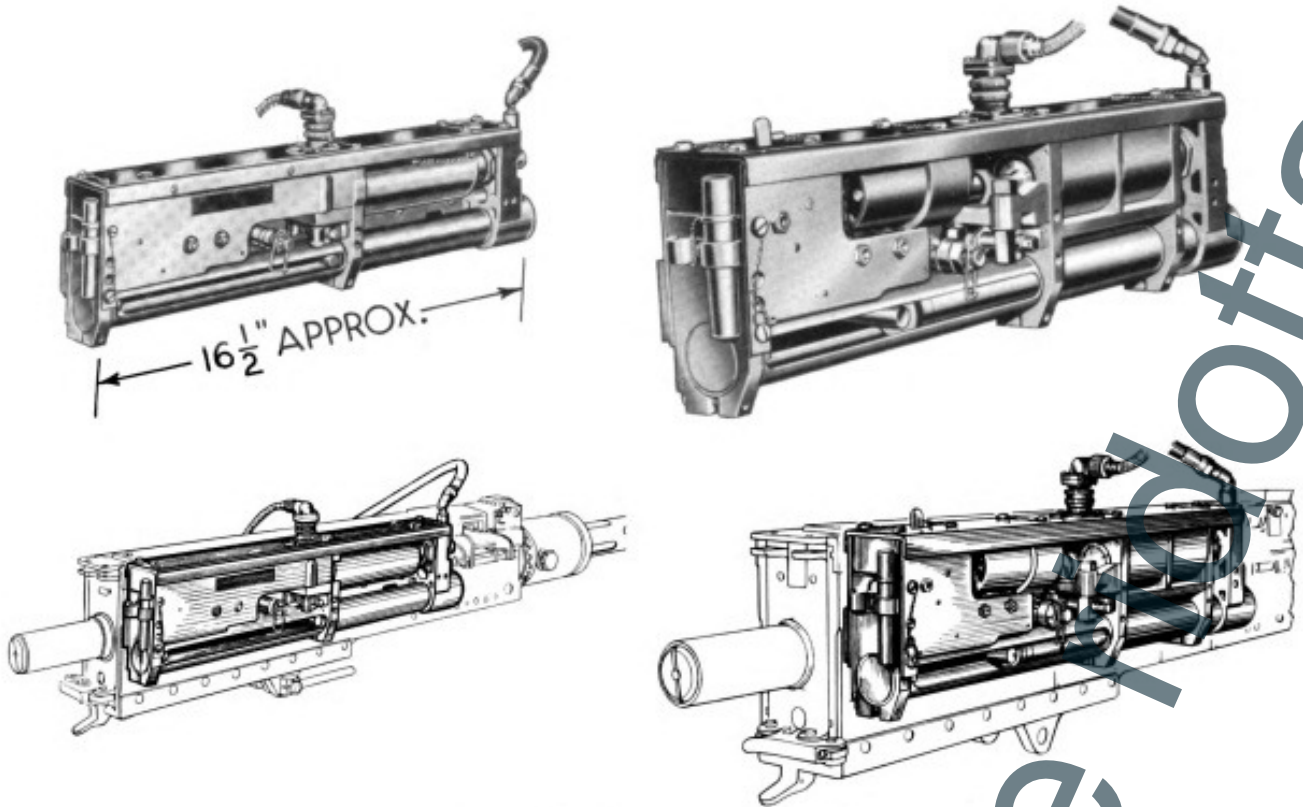
**ARMY**

A. E. REFERENCE NUMBER: 52-6858  
 MANUFACTURER: General Electric Company  
 MANUFACTURER'S DRAWING NUMBER: W-8258865, Group 1  
 MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1  
 PRODUCTION STATUS: Under procurement.  
 SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.





### CHARGER—GUN

GENERAL ELECTRIC COMPANY DRAWING NUMBER T-8252878, GROUP 1

NAMES: Gun charger  
Compressed air gun charger

CO<sub>2</sub> charger  
Carbon Dioxide charger

DESCRIPTION: This gun charger is mounted on the side of a .50 caliber M2 machine gun used in the G. E. central station fire control systems. It is electrically controlled, so that when a firing key is closed, the gun fires. The charger automatically operates to cock or charge the gun in the event of a misfire. Five or six cocking operations are repeated in rapid succession, after which the charger will stop, indicating difficulty due to causes other than defective ammunition.

To actuate the gun bolt, a piston acts against a stud that extends outward from the side of the gun. This stud is carried by the gun bolt, and projects through a guide slot into a cylinder. To operate the cylinder piston, compressed air, or gas, under a pressure of 1000 pounds per square inch, is admitted to the cylinder. The admission of the gas is controlled by a valve mechanism, which in turn is operated by an electromagnet known as the charging solenoid.

CHARACTERISTICS:

Dimensions..... approximately 16½ by 4¾ by 2¾ inches.  
Weight..... approximately 10½ pounds.

RELATIONSHIP OF PARTS: Used with:

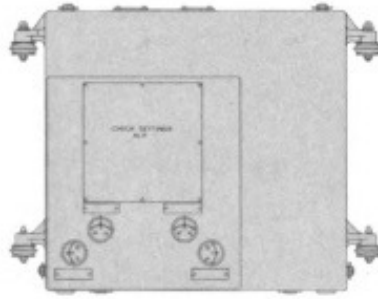
B-29 central station fire control system, P-61 central station fire control system, and A-26 central station fire control system.

ARMY

A. E. REFERENCE NUMBER: 52-1720  
MANUFACTURER: General Electric Company.  
MANUFACTURER'S DRAWING NUMBER: T-8252878, Group 1  
MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1; GO-17400-B; and GO-17397-B.  
A. S. C. STOCK NUMBER: 5900170000  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

NAVY

There is no Navy equivalent for the Army item.



**COMPUTER—DOUBLE PARALLAX**  
**GENERAL ELECTRIC COMPANY MODEL NUMBER 2CH1D1**

NAME: Double parallax computer

DESCRIPTION: When a single sighting station controls two turrets, an additional parallax unit is required, to compensate for the fact that the two turrets are located at different points in the airplane.

This type of computer is used with each of the sighting stations for secondary control over an additional turret in the B-29 central station fire control system. It corrects for ballistics, parallax and lead, and permits an increase in both accuracy of fire and in the maximum range of accurate fire. This computer, attached to the left front side of a single parallax computer, changes the position of the second turret with respect to the position of the first turret, the first turret having been previously corrected by the single parallax computer with respect to the position of the sight by an angle equal to the correction necessary to cause the projective to hit the target at which it is aimed. These corrections are dependent upon the distance between the airplane and the target, the relative speeds of the two, and the altitude and air speed at which the airplane is flying.

CHARACTERISTICS:

- Dimensions . . . . . approximately 23 $\frac{1}{2}$  by 18 $\frac{3}{8}$  by 18 $\frac{3}{8}$  inches.
- Weight . . . . . approximately 115 pounds.
- Operating voltage . . . . . 28 volts direct current.

RELATIONSHIP OF PARTS: Used with:

Single parallax computer, A. E. Reference Number 52-6860 in the B-29 central station fire control system.

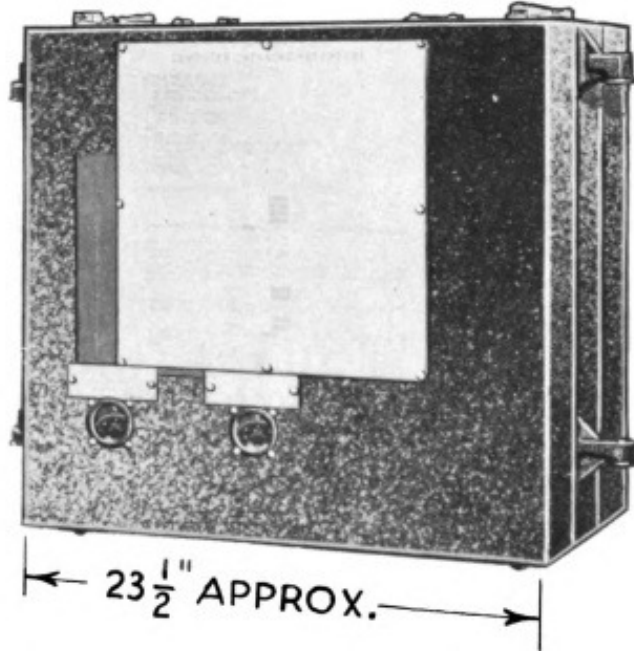
**ARMY**

- A. E. REFERENCE NUMBER: 52-6859
- MANUFACTURER: General Electric Company.
- MANUFACTURER'S MODEL NUMBER: 2CH1D1
- MANUFACTURER'S DRAWING NUMBER: WW-8009120, Group 1
- MANUFACTURER'S SPECIFICATION NUMBER: GO-18398-B-1
- PRODUCTION STATUS: Under procurement.
- SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

DIMENSIONAL PHOTO



**COMPUTER—SINGLE PARALLAX**  
**GENERAL ELECTRIC COMPANY MODEL NUMBER 2CH1C1**

NAME: Single parallax computer

DESCRIPTION: This type of computer is used with each of the sighting stations, for controlling one turret in the B-29 central station fire control system. It corrects for ballistics, parallax and lead and permits an increase in both the accuracy of fire and the maximum range of accurate fire. This computer, located at a distance from the sighting station, changes the position of the turret with respect to the sight, by an angle equal to the correction necessary to cause the projectile to hit the target at which it is aimed. This correction is dependent upon the distance between the airplane and target, the relative speeds of the two, and the altitude and air speed of the airplane.

CHARACTERISTICS:

- Dimensions..... approximately 23½ by 18⅝ by 10⅜ inches.
- Weight..... approximately 90 pounds.
- Operating voltage..... 28 volts direct current.

RELATIONSHIP OF PARTS: Used with:

Altitude and airspeed handset, A. E. Reference Number 52-6863, in the B-29 central station fire control system.

**ARMY**

- A. E. REFERENCE NUMBER: 52-6860
- MANUFACTURER: General Electric Company.
- MANUFACTURER'S MODEL NUMBER: 2CH1C1
- MANUFACTURER'S DRAWING NUMBER: WW-8009119, Group 1
- MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1
- PRODUCTION STATUS: Under procurement.
- SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.



**DRIVE—**  
**TAIL GUN MOUNT AZIMUTH**  
GENERAL ELECTRIC COMPANY  
DRAWING NUMBER W-8258810, GROUP 1

NAME: Tail gun mount azimuth drive

DESCRIPTION: In the B-29 central station fire control system, any movement of the tail sighting station is transmitted into a like movement of the tail mount guns.

The drive, used to horizontally move the tail gun mount, consists of a drive motor, two selsyn receivers and the necessary gearing.

Indications of misalignment between the selsyns on the mount and the selsyns on the sight are sent to the servo-amplifier, causing the amplidyne field in the motor generator to become energized. Power is then sent to the drive motor, which turns the gearing and rotates the mount. When the selsyns on the mount and the selsyns on the sight are once again aligned, the signal to the servo amplifier ceases and the amplidyne field is de-energized. This cuts off the power to the drive motor, stopping the mount.

**CHARACTERISTICS:**

Dimensions .....	approximately 14 $\frac{7}{16}$ by 5 $\frac{5}{16}$ by 12 $\frac{5}{8}$ inches.
Weight .....	approximately 50 pounds.
Motor .....	1.5 horsepower, G.E. model 5BC31NJ65.
Full load revolutions per minute .....	4000.
Field current .....	5.3 amperes.
Field voltage .....	28 volts direct current.
Field resistance .....	4.5 ohms.
Drive gear ratio .....	1250:1.

**RELATIONSHIP OF PARTS:** Used with:

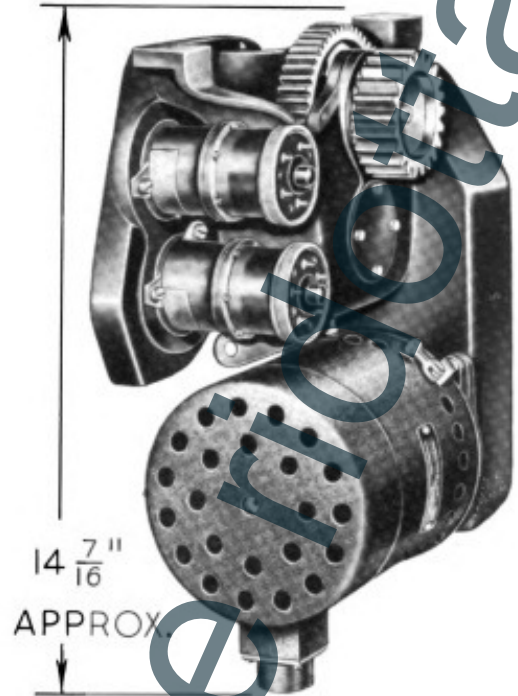
Amplidyne motor-generator, G. E. model 5AM61NJ1C, A. E. Reference Number 52-3045, and selsyns, G. E. Model 2J1G1, A. E. Reference Number 52-4210, in the B-29 central station fire control system.

**ARMY**

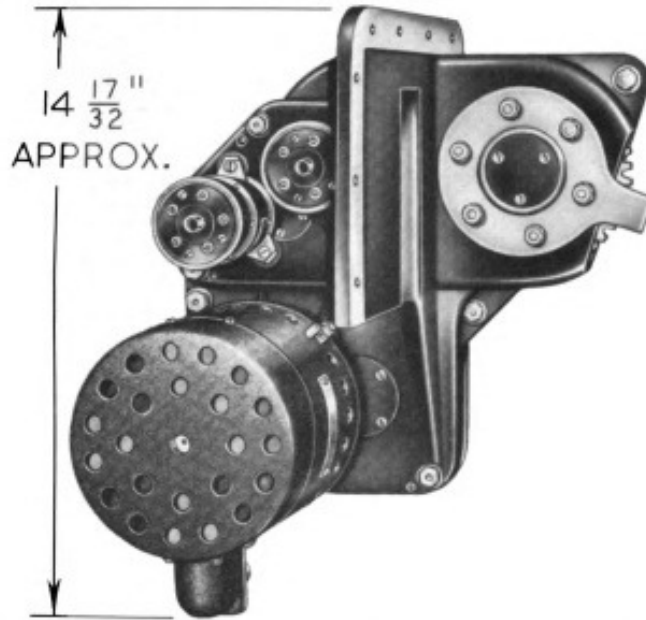
A. E. REFERENCE NUMBER: 52-6861  
MANUFACTURER: General Electric Company.  
MANUFACTURER'S DRAWING NUMBER: W-8258810, Group 1.  
MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit, including selsyns.

**NAVY**

There is no Navy equivalent for the Army item.



DEMOSITION



**DRIVE—TAIL GUN MOUNT ELEVATION**  
**GENERAL ELECTRIC COMPANY DRAWING NUMBER W-8258807, GROUP 1**

NAME: Tail gun mount elevation drive

DESCRIPTION: In the B-29 central station fire control system, any movement of the tail sighting station is transmitted into a like movement of the tail mount guns.

The drive, used to elevate or depress the tail gun mount, consists of a drive motor, two selsyn receivers and the necessary gearing.

Indications of misalignment between the selsyns on the mount and the selsyns on the sight are sent to the servo amplifier, causing the amplidyne field in the motor-generator to become energized. Power is then sent to the drive motor, which turns the gearing and elevates or depresses the mount. When the selsyns on the mount and the selsyns on the sight are once again aligned, the signal to the servo amplifier ceases, and the amplidyne field is de-energized. This cuts off the power to the drive motor, stopping the mount.

**CHARACTERISTICS:**

Dimensions.....	approximately 13 <sup>5</sup> / <sub>8</sub> by 12 <sup>13</sup> / <sub>16</sub> by 14 <sup>17</sup> / <sub>32</sub> inches.
Weight.....	approximately 50 pounds.
Motor.....	1.5 horsepower, G.E. model 5BC31NJ65.
Full load revolutions per minute.....	4000.
Field current.....	5.3 amperes.
Field voltage.....	28 volts direct current.
Field resistance.....	4.5 ohms.
Drive gear ratio.....	1163:1.

**RELATIONSHIP OF PARTS:** Used with:

Amplidyne motor-generator, G. E. model 5AM61NJ1C, A. E. Reference Number 52-3045, and selsyns G. E. model 2J1G1, A. E. Reference Number 52-4210, in the B-29 central station fire control system.

**ARMY**

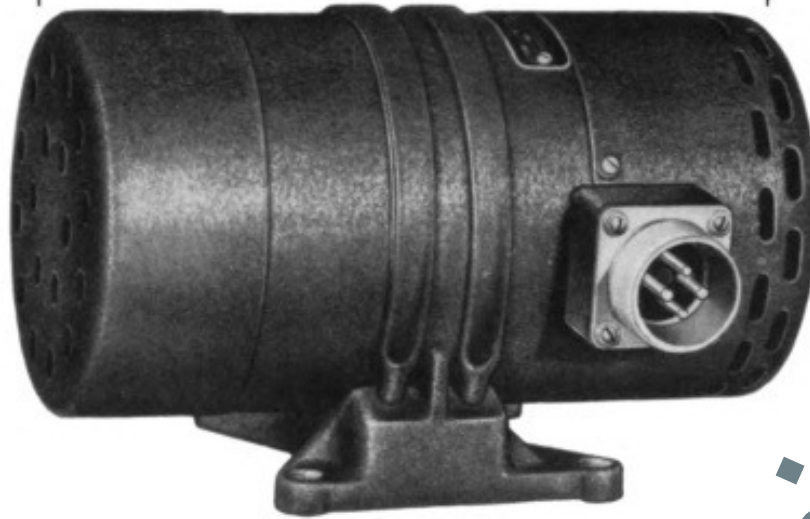
A. E. REFERENCE NUMBER: 52-6862  
MANUFACTURER: General Electric Company.  
MANUFACTURER'S DRAWING NUMBER: W-8258807, Group 1  
MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit, including selsyns.

**NAVY**

There is no Navy equivalent for the Army item.



8 <sup>15</sup>/<sub>16</sub> " APPROX.



**DYNAMOTOR**  
**GENERAL ELECTRIC MODEL 5D21NJ3A**

**NAMES:**

**DESCRIPTION:** This dynamotor, a six pole, 8000 revolution per minute motor-generator, furnishes alternating current at 110 volts and 400 cycles per second, for the servo-amplifier and selsyns used in the B-29 and A-26 central station fire control systems. It consists of a 24 to 28 volt direct current shunt wound motor on a common shaft with a 110 volt single phase generator. The entire assembly is enclosed in a single housing. The motor operates from the airplane's power supply.

**CHARACTERISTICS:**

Dimensions .....	approximately 8 <sup>15</sup> / <sub>16</sub> by 5 <sup>1</sup> / <sub>2</sub> by 6 <sup>3</sup> / <sub>4</sub> inches.
Weight .....	approximately 14 pounds.
Motor:	
Voltage .....	27 volts direct current.
Current .....	35 amperes.
Speed .....	8000 revolutions per minute.
Generator:	
Voltage .....	110 volts alternating current.
Current .....	4.4 amperes.
Rating .....	400 cycles per second single phase.

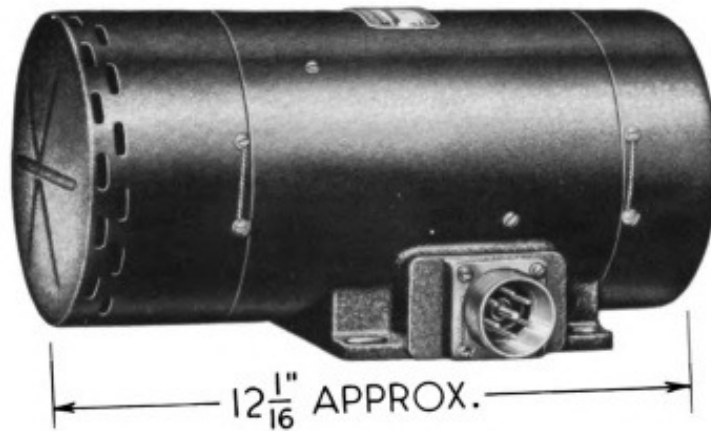
**RELATIONSHIP OF PARTS:** Used with:  
B-29 and A-26 central station fire control systems.

**ARMY**

A. E. REFERENCE NUMBER: 52-2580  
MANUFACTURER: General Electric Company  
MANUFACTURER'S MODEL NUMBER: 5D21NJ3A  
MANUFACTURER'S DRAWING NUMBER: TT-8117016, Group 1  
MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1; GO-17397-B  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.



### MOTOR-GENERATOR—AMPLIDYNE REMOTE CONTROL GENERAL ELECTRIC COMPANY MODEL 5AM31NJ9

NAMES: Amplidyne remote control motor-generator      Amplidyne      Motor generator

DESCRIPTION: This type amplidyne motor-generator, used to supply current for the operation of remotely controlled machine gun turrets, consists essentially of a direct current electric motor and a direct current output generator mounted on the same shaft. In spite of the fact that the motor operates constantly to turn the shaft, there is no output from the generator unless the generator field is excited. This field requires only a small current to produce full generator output voltage. Minute variations in the field current instantaneously produce large variations in the generator's output. When the turret's guns and sight are in exact alignment no current is transmitted to the field; thus no output to the turret drive motor takes place even though the generator armature is turning. When the sight and guns are not in alignment, current is transmitted to the field and the generator produces voltage to cause the turret drive motor to align the guns with the sight. Two amplidyne motor-generators and two turret drive motors are required for each turret; one of each for movement of the guns in elevation and depression and the others for rotation of the turret.

**CHARACTERISTICS:**

Dimensions	approximately 12 by 7 $\frac{3}{8}$ by 6 inches.
Weight	approximately 29 pounds.
Revolutions per minute	8300.
Motor input:	
Voltage	27 volts, direct current
Current	44 amperes
Winding	Compound.
Generator output:	
Voltage	60 volts, direct current
Current	8.8 amperes
Power	530 watts
Winding	amplidyne.

**RELATIONSHIP OF PARTS:** Used in:

B-29 central station fire control system, P-61 central station fire control system and A-26 central station fire control system.

**ARMY**

A. E. REFERENCE NUMBER: 52-3040

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Manufacturer's Specification
General Electric Company	5AM31NJ9	P-8111135 outline TT-5818156 assembly	A	5900466500	OST-1B
Marathon Electric Manufacturing Corporation	5AM31NJ9	P-8111135 outline TT-5818156 assembly	A	5900466500	OST-1B



## STATION—SIGHTING

### GENERAL ELECTRIC COMPANY MODEL 2CSD1C1

NAMES: Sighting station  
Periscopic sighting station

DESCRIPTION: The gunner at the periscopic sighting station in the A-26 airplane can see targets above or below the airplane, but he cannot see both at the same time.

The sight itself is a double-end periscope, having a rotating eyepiece located just below the top mounting flange. This eyepiece transfers the line of sight into the tube of the periscope either up or down, depending upon the area to be scanned. The gunner needs only to aim his sight at the target, and the selection of the line of sight is made automatically within the sighting station. A changeover mirror is rotated to change the line of sight from the upper periscope head to the lower head, or vice versa. This mirror is turned by a changeover motor whenever the line of sight intersects the fuselage, thus allowing the gunner to follow his target without pausing to shift the line of sight when the target moves above or below him.

The selsyn transmitters, indicating horizontal motion of the sight, are located near the bottom end of the periscope tube. The selsyns indicating vertical movement are located just behind the gunner's control grips. A firing trigger is incorporated in one of these grips.

A collector ring assembly, located near the base of this sighting station, enables the sight to be rotated 360 degrees without twisting the power cables. This supplies electric power while the sight is rotated.

#### CHARACTERISTICS:

Dimensions . . . . . approximately 77 1/8 by 17 1/2 by 24 inches  
Weight . . . . . approximately 135 pounds  
Required voltage 28 volts direct current for lamp  
110 volts alternating current for selsyns  
Range . . . . . 360 degrees in azimuth  
90 degrees in elevation  
90 degrees in depression  
Field of view at  
any one time . . . 70 degree cone  
Lamp . . . . . Kollsman 71-A-O

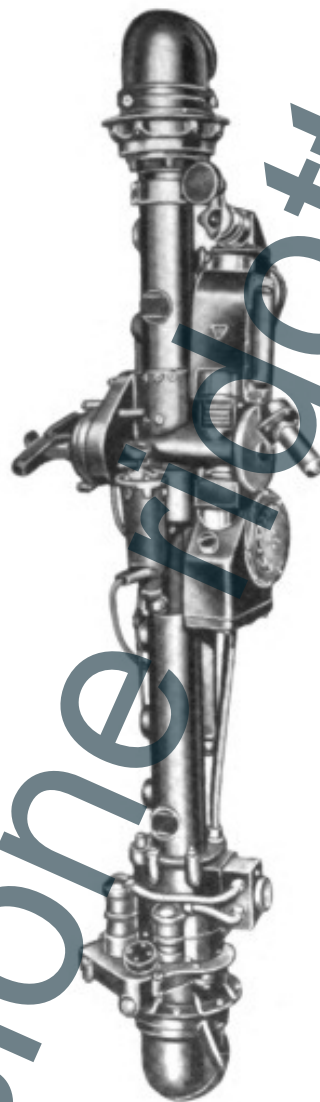
RELATIONSHIP OF PARTS: Used with:  
A-26 central station fire control system.

#### ARMY

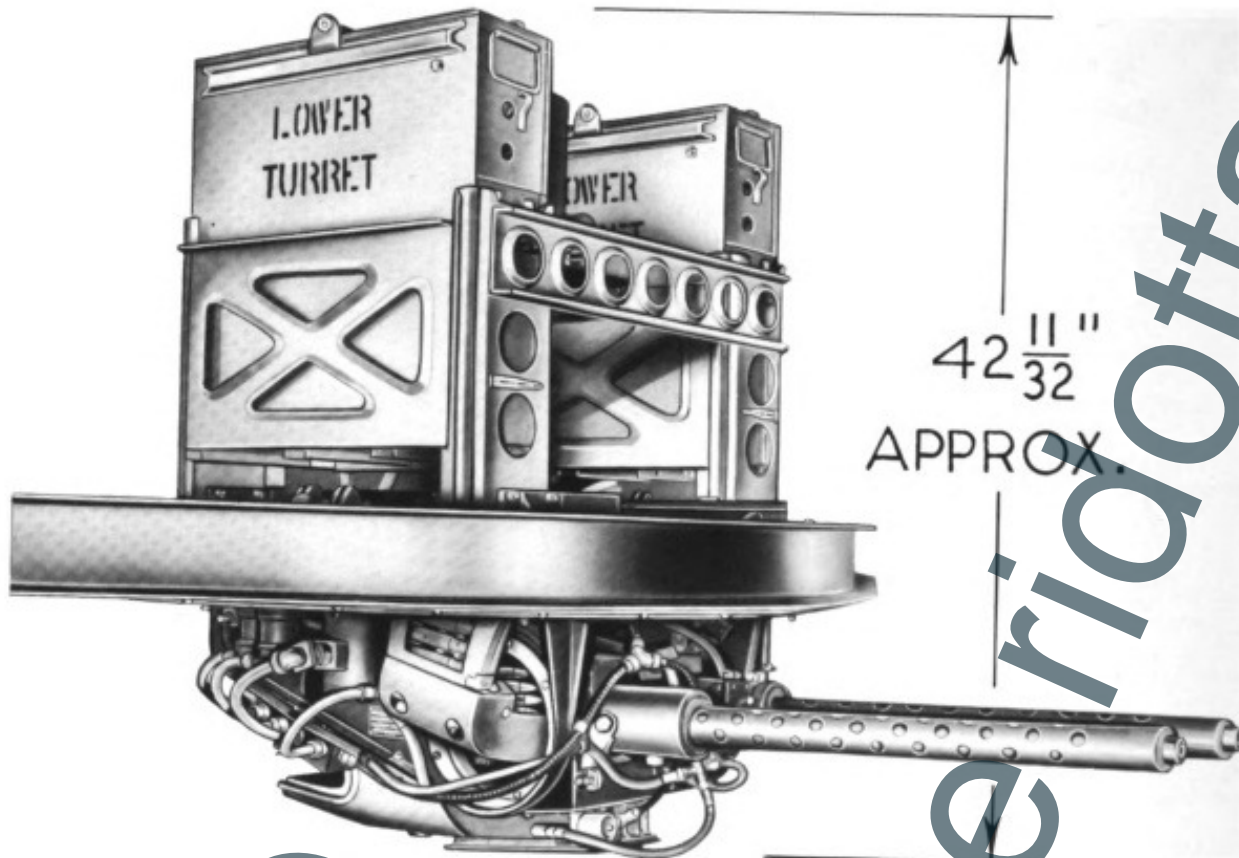
A. E. REFERENCE NUMBER: 52-6703  
MANUFACTURER: General Electric Company  
MANUFACTURER'S MODEL NUMBER: 2CSD1C1  
MANUFACTURER'S DRAWING NUMBER: W-8009100, Group 1  
MANUFACTURER'S SPECIFICATION NUMBER: GO-17397-B  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit, including lamp and selsyns.

#### NAVY

There is no Navy equivalent for the Army item.

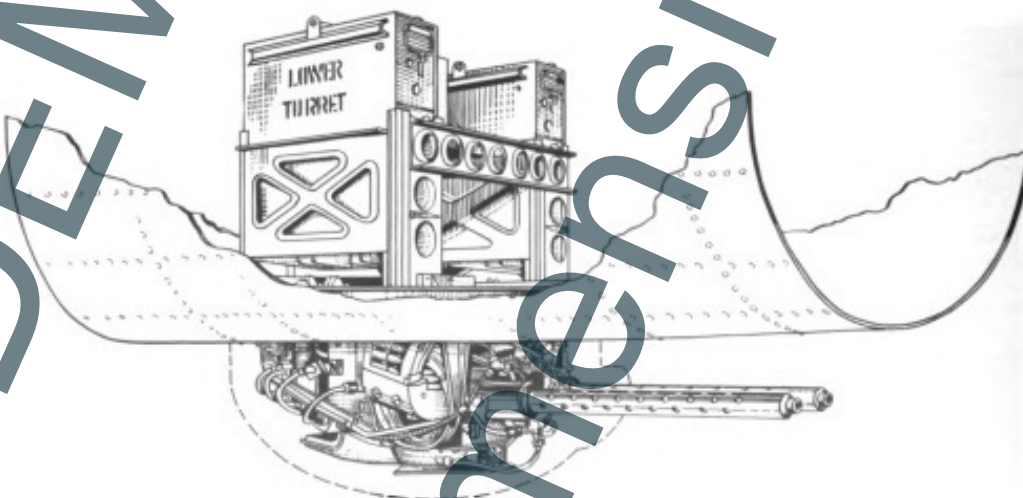






**TURRET—LOWER GUN**  
GENERAL ELECTRIC COMPANY MODEL 2CGD50LRC1

NAME: Lower gun turret



(Continued on page 223)



## TURRET—LOWER GUN

(Continued from page 222)

**DESCRIPTION:** This remotely controlled turret, housing two .50 caliber M2 machine guns, is supported, in the A-26 airplane, by a mounting ring and saddle assembly. It is electrically operated by two drive motors, each powered by an amplidyne motor-generator; one drive motor for horizontal rotation of the turret, the other for movement of the guns in elevation and depression. Two ammunition cases, each with a capacity of approximately 560 rounds of .50 caliber ammunition, are mounted above the guns. A collector unit with twenty-five slip rings is mounted on the axis of rotation of the turret to furnish electrical power to the various units in it.

When not in use, the turret is turned so the guns are horizontal and pointed aft. It is latched in this position to prevent accidental movement, which might result in an increase in drag.

**CHARACTERISTICS:**

- Dome diameter ..... approximately 40 $\frac{5}{16}$  inches
- Ring diameter ..... approximately 38 inches
- Height to ring ..... approximately 28 $\frac{1}{32}$  inches
- Height overall ..... approximately 42 $\frac{1}{32}$  inches
- Weight ..... approximately 275 pounds
- Rotation in azimuth ..... 360 degrees
- Movement in depression ..... 95 degrees

**RELATIONSHIP OF PARTS:** Used with:

Turret drive motor, A. E. Reference Number 52-3065; Amplidyne motor-generator, A. E. Reference Number 52-3040; Gun charger, A. E. Reference Number 52-1720; and Selsyns, A. E. Reference Number 52-4210.

**ARMY**

A. E. REFERENCE NUMBER: 52-6704  
A. S. C. STOCK NUMBER: Refer to chart.  
TECHNICAL ORDER NUMBER: Refer to chart.  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

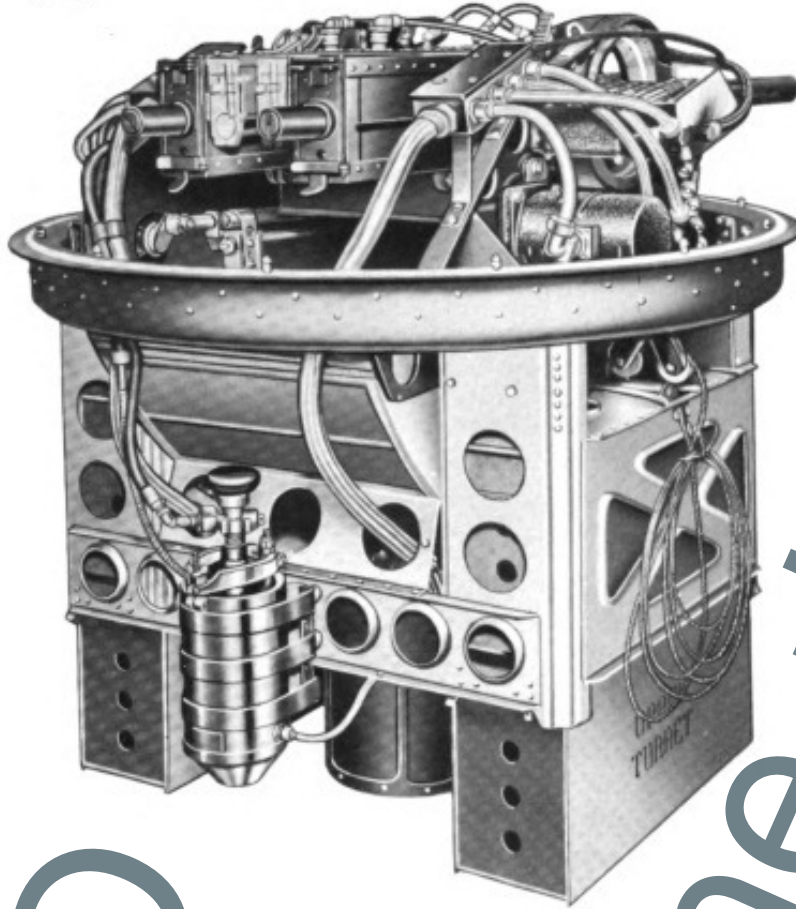
**NAVY**

There is no Navy equivalent for the Army item.

**ALL MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

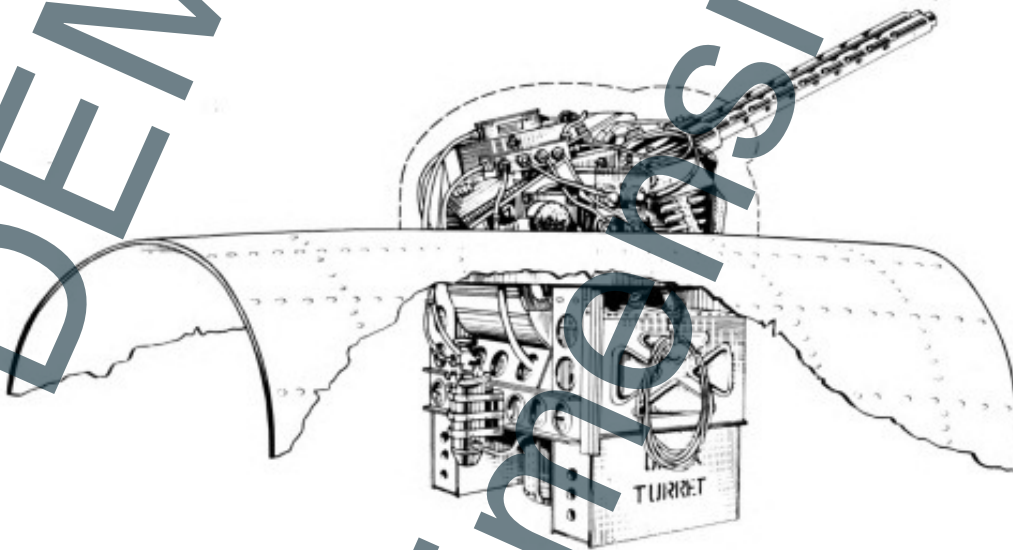
Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Manufacturer's Specification	Used on Airplanes	Remarks
General Electric Company	2CGD50LRC1	WW-8019523	A	GO-17397-B	A-26	
	2CGD50LRC5	WW-8009114, Group 1	A	GO-18393-B-1	B-29 aft	*
	2CGD50LRC4	WW-8009113, Group 1	A	GO-18393-B-1	B-29 fore	*

\*Uses different contour follower and fire interrupter.



**TURRET—UPPER GUN**  
GENERAL ELECTRIC COMPANY MODEL 2CGD5OURC1

NAME: Upper gun turret



(Continued on page 225)



## TURRET—UPPER GUN

(Continued from page 224)

**DESCRIPTION:** This remotely controlled turret, housing two .50 caliber M2 machine guns, is supported, in the A-26 airplane, by a mounting ring and saddle assembly. It is electrically operated by two drive motors, each powered by an amplidyne motor-generator; one drive motor for horizontal rotation of the turret, the other for movement of the guns in elevation and depression. Two ammunition cases, each with a capacity of approximately 560 rounds of .50 caliber ammunition, are mounted below the guns. A collector unit with twenty-five slip rings is mounted on the axis of rotation of the turret, to furnish electrical power to the various units in it.

When not in use, the turret is turned so the guns are horizontal and pointed forward. It is latched in this position, and may be fired by the pilot when he aims the airplane at a target.

**CHARACTERISTICS:**

- Dome diameter ..... approximately 40 $\frac{5}{16}$  inches
- Ring diameter ..... approximately 38 inches
- Height to ring ..... approximately 28 $\frac{13}{32}$  inches
- Height overall ..... approximately 41 $\frac{1}{8}$  inches
- Weight ..... approximately 275 pounds
- Rotation in azimuth ..... 360 degrees
- Movement in elevation ..... -5 degrees to +90 degrees

**RELATIONSHIP OF PARTS:** Used with:

Turret drive motor, A. E. Reference Number 52-3065; Amplidyne motor-generator, A. E. Reference Number 52-3040; Gun charger, A. E. Reference Number 52-1720; and Selsyn, A. E. Reference Number 52-4210.

**ARMY**

A. E. REFERENCE NUMBER: 52-6705  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

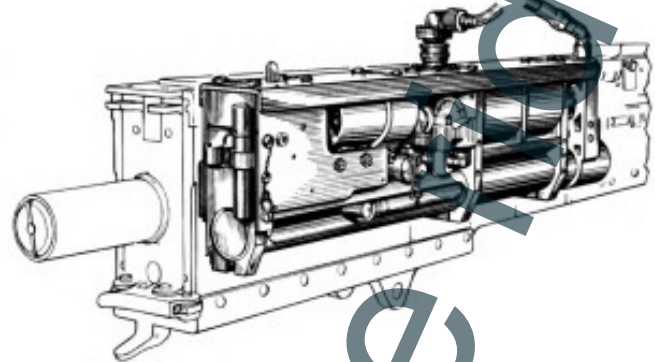
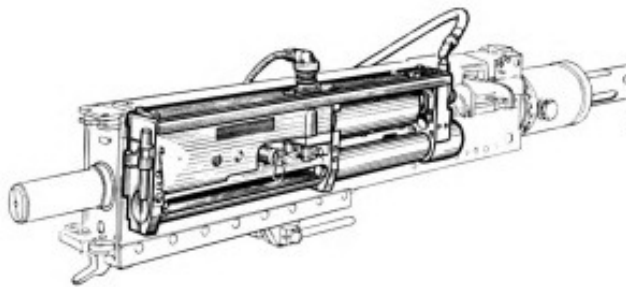
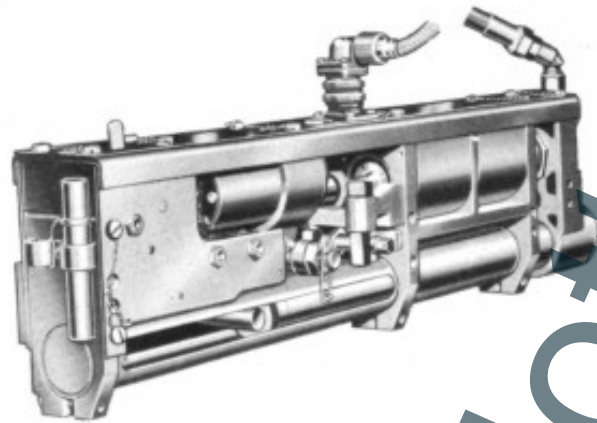
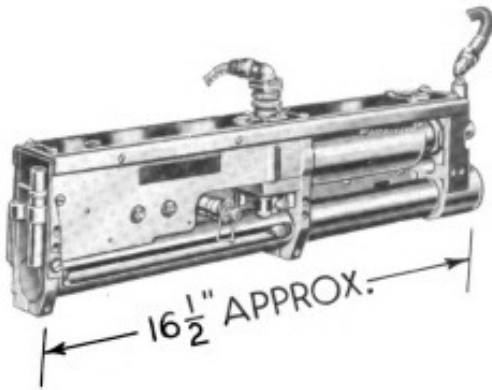
**NAVY**

There is no Navy equivalent for the Army item.

**ALL MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Manufacturer's Specification	Used in Airplanes	Remarks
General Electric Company	2CGD50URC1	WW-8019524	A	GO-17397-B	A-26	
	2CGD50URC3	WW-8009111 Group 1	A	GO-18393-B-1	B-29 fore	*
	2CGD50URC4	WW-8009112 Group 1	A	GO-18393-B-1	B-29 aft	*

\*Uses different contour follower and fire interrupter.



### CHARGER—GUN

GENERAL ELECTRIC COMPANY DRAWING NUMBER T-8252878, GROUP 1

NAMES: Gun charger  
Compressed air gun charger

CO<sub>2</sub> charger  
Carbon Dioxide charger

DESCRIPTION: This gun charger is mounted on the side of a .50 caliber M2 machine gun used in the G. E. central station fire control systems. It is electrically controlled, so that when a firing key is closed, the gun fires. The charger automatically operates to cock or charge the gun in the event of a misfire. Five or six cocking operations are repeated in rapid succession, after which the charger will stop, indicating difficulty due to causes other than defective ammunition.

To actuate the gun bolt, a piston acts against a stud that extends outward from the side of the gun. This stud is carried by the gun bolt, and projects through a guide slot into a cylinder. To operate the cylinder piston, compressed air, or gas, under a pressure of 1000 pounds per square inch, is admitted to the cylinder. The admission of the gas is controlled by a valve mechanism, which in turn is operated by an electromagnet known as the charging solenoid.

CHARACTERISTICS:

Dimensions..... approximately 16½ by 4¾ by 2¾ inches.  
Weight..... approximately 10½ pounds.

RELATIONSHIP OF PARTS: Used with:

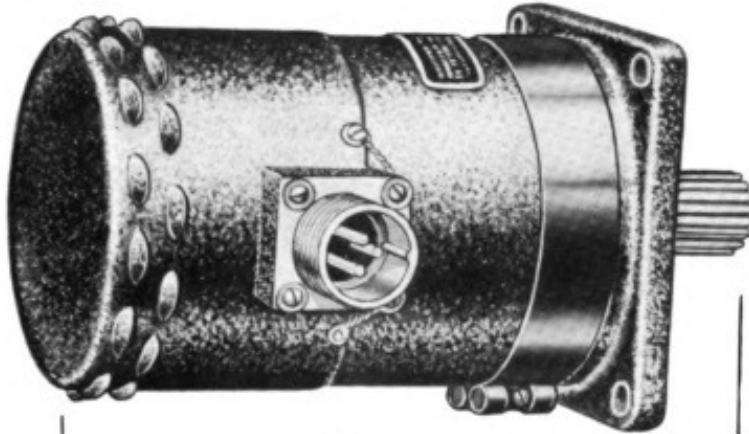
B-29 central station fire control system, P-61 central station fire control system, and A-26 central station fire control system.

ARMY

A. E. REFERENCE NUMBER: 52-1720  
MANUFACTURER: General Electric Company.  
MANUFACTURER'S DRAWING NUMBER: T-8252878, Group 1  
MANUFACTURER'S SPECIFICATION NUMBER: GO-18393-B-1; GO-17400-B; and GO-17397-B.  
A. S. C. STOCK NUMBER: 5900170000  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

NAVY

There is no Navy equivalent for the Army item.



7 <sup>11</sup>/<sub>16</sub> APPROX.  
**MOTOR-TURRET DRIVE**  
GENERAL ELECTRIC COMPANY MODEL 5BA50LJ2A

NAMES: Turret drive motor  
Drive motor

Universal turret drive motor

DESCRIPTION: This 1/2 horsepower universal turret drive motor is of the four-pole, two-brush type, with a separately excited field. When used to rotate a turret (azimuth drive), it is connected to a 533 to 1 reduction gear train. When used to elevate or depress a two gun turret gun carriage, (elevation drive) it is connected to an 800 to 1 reduction gear; for a four gun turret gun carriage, it is connected to a 600 to 1 reduction gear. The motor is bolted to the turret, and the extended armature shaft engages the drive pinion of the gear train used in the reduction mechanism. This motor is equipped with sealed type ball bearings containing enough low temperature lubricant to last throughout normal operational life. One amplidyne motor-generator is required to furnish power for the operation of each turret drive motor.

CHARACTERISTICS:

Dimensions.....	approximately 7 3/4 by 5 5/8 by 4 1/4 inches
Weight.....	approximately 8 pounds
Type.....	1/2 horsepower direct current
Full load revolutions per minute.....	4000
Field current.....	2.3 amperes
Field voltage.....	24 volts, direct current
Field resistance.....	9.4 ohms

RELATIONSHIP OF PARTS: Used with:

Amplidyne motor generator G. E. model 5AM31NJ9, A. E. Reference Number 52-3040 in Army type B-29 central station fire control system, Army type P-61 central station fire control system, and Army type A-26 central station fire control system.

ARMY

A. E. REFERENCE NUMBER: 52-3065

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: This unit is normally a component part of the turrets used in the fire control systems but may be shipped as a separate unit when required.

NAVY

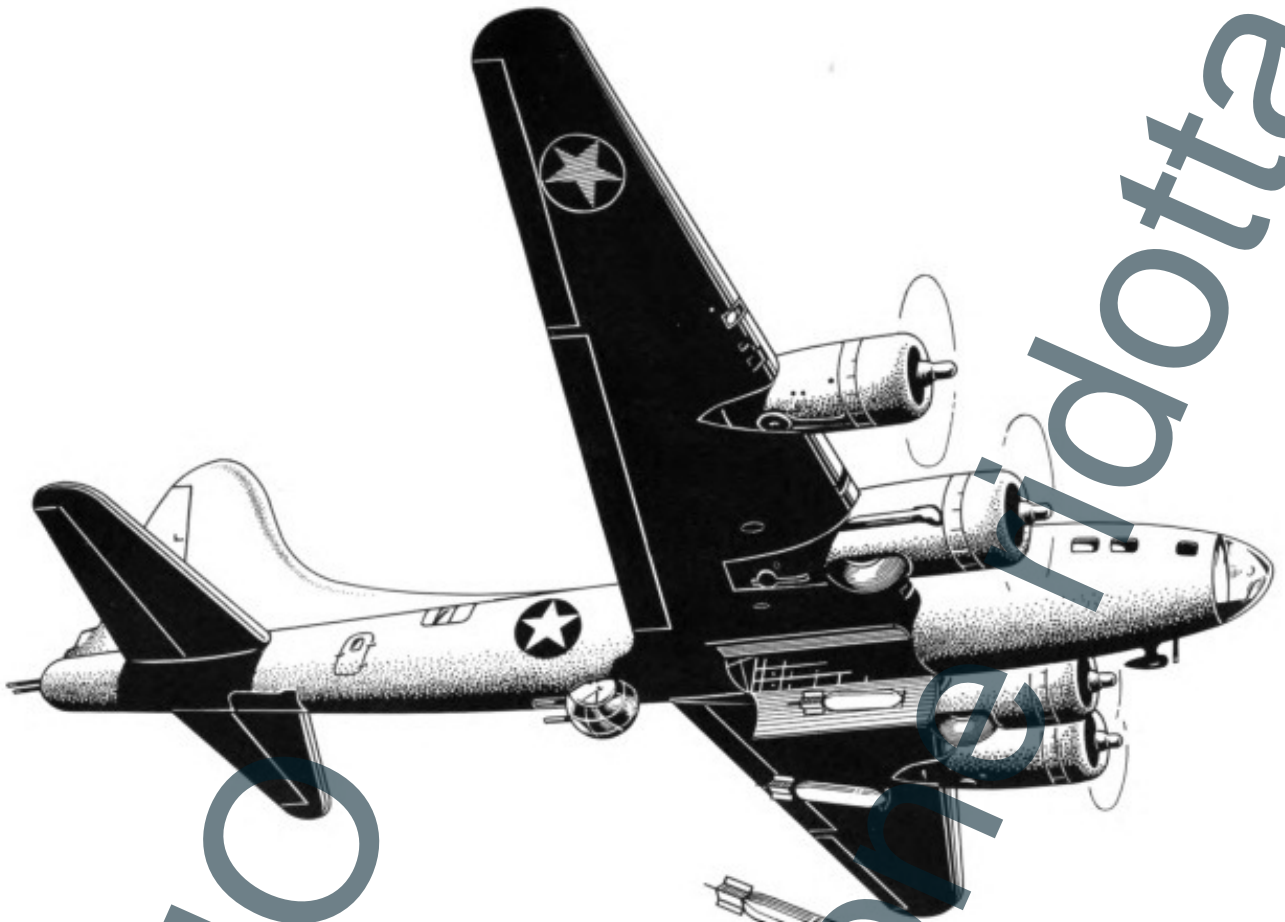
There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Manufacturer's Specification	Remarks
General Electric Company	5BA50LJ2A	TT-8117000	A	OST-1B	GE model 5BA50LJ2A supersedes and is interchangeable with GE model 5BA50LJ2.
Electric Vacuum Cleaner Company	5BA50LJ2A	TT-8117000	A	OST-1B	



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# BOMBING EQUIPMENT





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**ADAPTER—BOX**  
**BRITISH TYPE A**

**NAMES:** Box adapter  
Bomb box adapter

Universal bomb carrier adapter box  
Box, adapter and terminal

**DESCRIPTION:** The British type A box adapter consists of a rectangular shaped junction box with a built-in 5 hole socket, and an extension cable with a 5 pin plug attached. This adapter is used to enable installation of incendiary or small bomb boxes in the universal bomb carrier, and to permit systematic electrical release of these boxes.

**CHARACTERISTICS:**

Dimensions..... approximately 5 1/8 by 2 1/4 by 1 3/8 inches (without socket)  
Dimensions..... approximately 1 3/4 by 2 1/8 inches (socket only)

**INSTALLATION PECULIARITIES:** This adapter is equipped with a built-in socket, British Reference Number 5D/526, and a four foot extension cable with a 5 pin plug, British Reference Number 5D/517. It is inserted between the carrier and the airplane socket.

**RELATIONSHIP OF PARTS:** Used with:

Universal bomb carrier, A. E. Reference Numbers 64-197, 64-198 and 64-199, and 5-way bomb socket, A. E. Reference Number 64-4195.

**ARMY**

A. E. REFERENCE NUMBER: 64-110  
MANUFACTURER: Guardian Electric Company  
MANUFACTURER'S DRAWING NUMBER: 20388  
MANUFACTURER'S SPECIFICATION NUMBER: G32693  
A. S. C. STOCK NUMBER: 6400008420  
PRODUCTION STATUS: Not under procurement for initial installation.  
SHIPPING DATA: Shipped as a complete unit, including extension cable and plug.

**NAVY**

There is no Navy equivalent for this item.

**BRITISH**

REFERENCE NUMBER: 5D/610

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**PANEL—AUTOPILOT CONTROL**  
**ARMY TYPE A-6A NAVY—SEE BELOW**

**NAMES:** Autopilot control panel  
 Control box  
 Control panel  
 Pilot's control box  
 Pilot's control panel  
 Turn type remote control unit (British)

**DESCRIPTION:** The autopilot control panel is a part of the automatic pilot, and is mounted in the pilot's compartment. It contains all the controls necessary for the operation of the automatic pilot when used in conjunction with a bombsight or as a navigational aid.

The assembly incorporates a turn control, by means of which coordinated turns can be made, and a turn control transfer switch, which permits operation of a remotely located turn control.

Six toggle switches located below the turn control activate the complete automatic pilot, including the directional stabilizer. The master and the stabilizer servo switch are connected by a bar which moves both ON and OFF together, and prevents the other switches from being used before the automatic pilot is in operation. Movement of the bar to the OFF position operates all switches simultaneously, disconnecting the automatic pilot.

Six tell-tale lights, two for each axis of control, are located at the top of the panel. When a light is illuminated, it indicates a condition of unbalance in an axis of control. During proper operation of the pilot all lights are extinguished.

Adjusting knobs for the centering, sensitivity, ratio and turn compensation for the three axis of control are located on the face of the panel.

**CHARACTERISTICS:** Dimensions ..... approximately 8 by 8 by 4 $\frac{1}{16}$  inches  
 Weight ..... approximately 5 $\frac{9}{16}$  pounds  
 Illumination ..... None  
 Markings ..... Fluorescent—radioactive

**RELATIONSHIP OF PARTS:** Part of the Army type C-1 automatic pilot, A. E. Reference Number 64-2300

**ARMY**

A. E. REFERENCE NUMBER: 64-195  
**SPECIFICATIONS:**

General ..... C-24825  
 Detail ..... C-24861

**MANUFACTURER:** Minneapolis Honeywell  
 Regulator Company, part number G1047  
 outline drawing number DR2155.

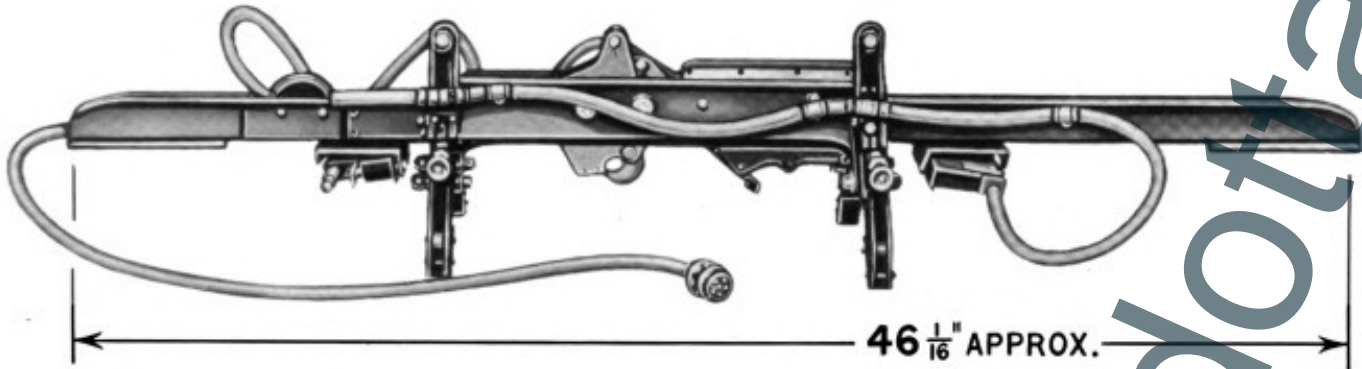
**TYPE DESIGNATION:** A-6A  
**A. S. C. STOCK NUMBER:** 6400092800  
**TECHNICAL ORDER NUMBER:** 11-60-1  
**PRODUCTION STATUS:** Under procurement.  
**SHIPPING DATA:** Shipped as a complete unit.

**NAVY**

**TYPE DESIGNATION:** A part of Mark 2  
 Modification 1 Stabilized Bombing Approach Equipment  
**AVIATION ORDNANCE STOCK LIST NUMBER:** 2-S-335  
**NAVAL ORDNANCE PAMPHLET NUMBER:** 639  
**PROCUREMENT STATUS:** Under procurement.

**BRITISH**

**REFERENCE NUMBER:** 106J/699



**CARRIER—UNIVERSAL BOMB**  
ARMY TYPE NUMBER 1 MARK III    BRITISH NUMBER 1 MARK III

NAMES: Universal bomb carrier  
British bomb carrier

DESCRIPTION: The Number 1 Mark III universal bomb carrier is a British designed device for carrying and releasing bombs having one or three suspension lugs. The carrier is electrically controlled, and provides selective arming of the bombs.

Major parts of the bomb carrier are two fusing units, a bomb hook, release unit, crutch assemblies (sway bracing), and a junction box with a male plug.

The fusing units are provided to enable fusing of both, or either, the nose and tail of a bomb.

CHARACTERISTICS:

Weight.....	approximately 17 pounds
Dimensions.....	approximately 46 $\frac{1}{16}$ by 7 $\frac{3}{4}$ by 10 $\frac{1}{4}$ inches
Power supply.....	24 volts, direct current
Capacity.....	1000 pounds

RELATIONSHIP OF PARTS: Used with:

5-way bomb socket, type A, A. E. Reference Number 64-4195, and box adapter, A. E. Reference Number 64-110.

**ARMY**

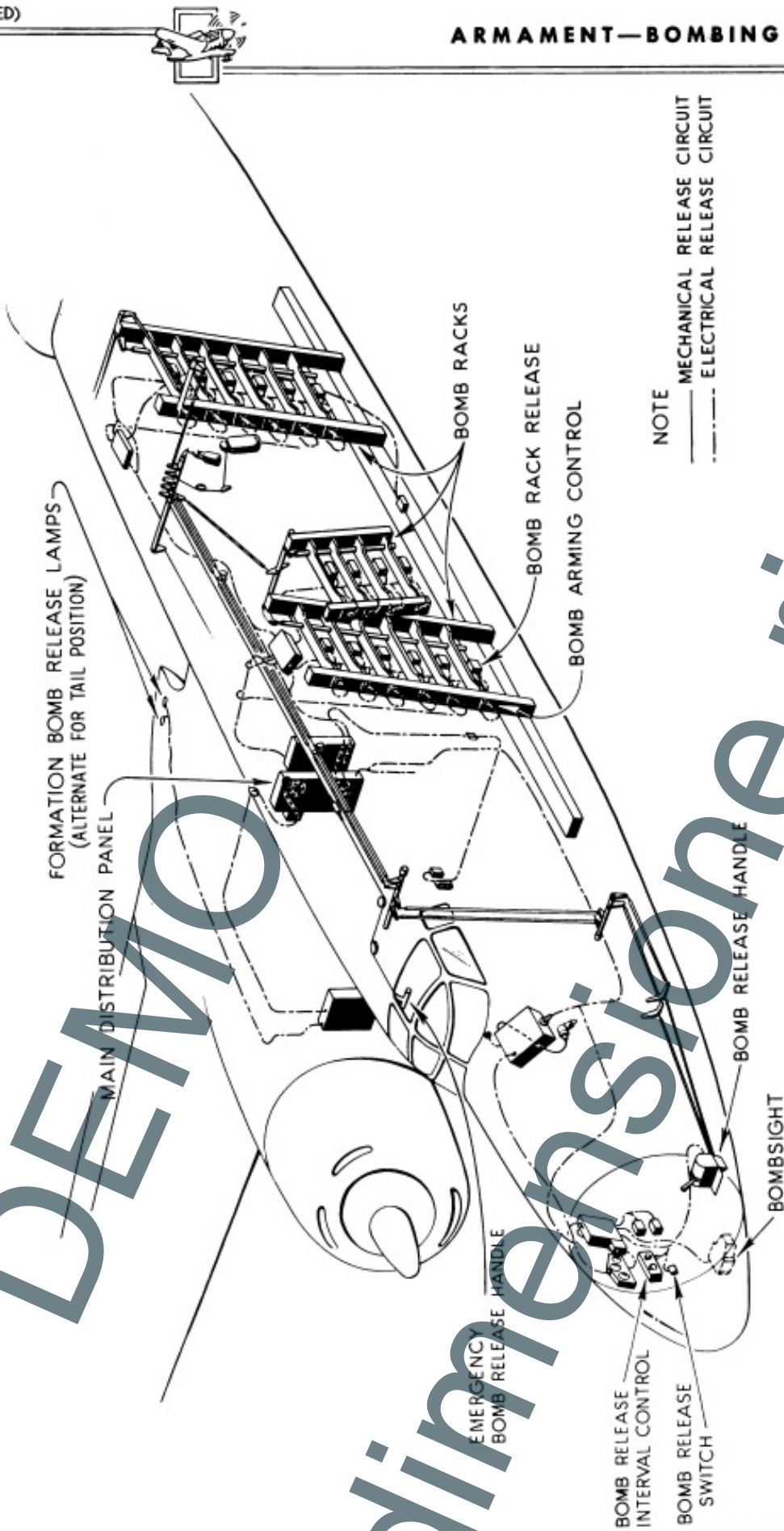
A. E. REFERENCE NUMBER: 64-198  
MANUFACTURER'S DRAWING NUMBER: Mills Novelty Company BR-719-CSP  
TYPE DESIGNATION: Number 1 Mark III  
A. S. C. STOCK NUMBER: 6400162010  
TECHNICAL ORDER NUMBER: 11-5-43  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for this item.

**BRITISH**

BRITISH REFERENCE NUMBER: 111A/41



NOTE

— MECHANICAL RELEASE CIRCUIT  
 - - - ELECTRICAL RELEASE CIRCUIT

# TYPICAL BOMB RELEASE SYSTEM

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## **BOMB ARMING CONTROLS**

Bomb arming controls allow bombs to be dropped either in safe or in armed condition. Bombs are dropped safe when their release over friendly territory is necessary.

The control is operated by the bombardier's fuse switch. When the bombardier places the switch OFF, the bombs are safe and will not normally explode upon impact. When the switch is ON, the bombs are armed and explode upon impact.

The bomb arming or fusing wire of the bomb is placed between ball ended retainers on the bomb arming control which is installed on the bomb rack. One of these retainers is stationary and the other, under spring tension, is movable.

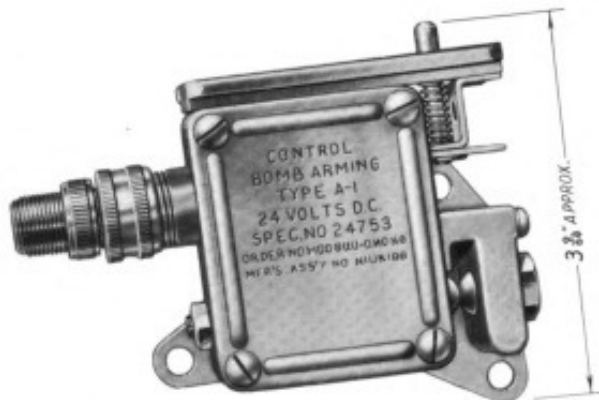
To release a bomb in an armed condition, the electrical circuit is energized by turning the bombardier's fuse switch ON. As the circuit is energized, a pin moves into a hole in the center of the ball ended retainers, thereby locking the arming wire in place. When the bomb is dropped, the arming wire is pulled from the bomb and allows the bomb to explode upon impact.

To release a bomb in a safe condition, the bombardier places the fuse switch OFF. This de-energizes the electrical circuit, allowing the arming wire to pull out from between the retainers as the bomb falls.

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# BOMB ARMING CONTROLS ARMAMENT—BOMBING



## CONTROL—BOMB ARMING

TYPE AN-A-1      FORMER ARMY TYPE A-1      FORMER NAVY TYPE A-1

NAMES: Bomb arming control      Fusing unit  
           Auxiliary arming mechanism      Selective fusing control  
           Bomb arming control box      Bomb fusing control

DESCRIPTION: The type AN-A-1 bomb arming control is a box-shaped control used to arm the bomb as it is released from the shackle or rack. The control operates on a 24 to 28½ volt direct current supply.

CHARACTERISTICS:

Weight..... approximately 3/8 pound  
 Dimensions..... approximately 1 1/2 by 3 by 4 inches  
 Electrical connector plug..... AN3106-10S-2S

INSTALLATION PECULIARITIES: A slide mount is supplied as an integral part of the type AN-A-1 bomb arming control. The purpose of this mount is to provide mounting attachment when used with the British universal bomb carrier, or on an airplane equipped with slide mounting rails.

### ARMY

A. E. REFERENCE NUMBER: 64-200

SPECIFICATIONS:

Detail..... 93-24753  
 Superseded..... 24753

A. A. F. DRAWING NUMBER: H42B6598

TYPE DESIGNATION: AN-A-1

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped with electrical connector plug AN3106-10S-2S in a single container.

### NAVY

TYPE DESIGNATION: AN-A-1

BUREAU OF ORDNANCE DRAWING NUMBER: 328446

AVIATION ORDNANCE STOCK LIST NUMBER: Refer to chart

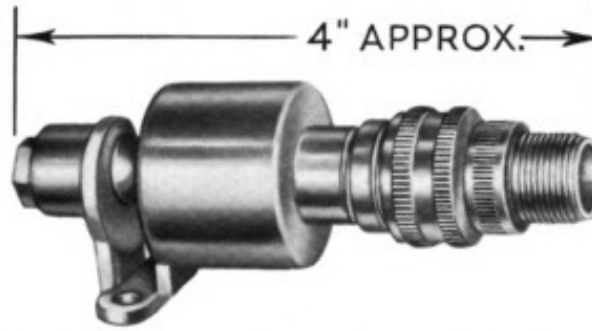
PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	AAF Type and Navy Type	Aviation Ordnance Stock List Number	Remarks
J. P. Seeburg Company	*A-1	BA-106000	A-N-B	6400217000		105D 194	AN-A-1	3-C-1805 (formerly 3-B-1969)	
P. R. Mallory & Company, Incorporated	SF-6	C-134624 B-134163	A-N-B	6400217000	11-5-33	105D 99	AN-A-1	3-C-1805 (formerly 3-B-1969)	
	SF-4	B-134163	N				Navy Type SF-4	3-B-1970	†
Magnavox Corporation	14D26G1	14D26G1	A-N-B	6400217050	11-5-47	105D 195	AN-A-2	3-C-1810	†

†A slide or bomb arming control mount must be used to provide for complete interchangeability.  
 Note: \*AAF and Navy type.

**BOMB ARMING CONTROLS  
ARMAMENT—BOMBING**



**CONTROL—BOMB ARMING  
TYPE AN-A-2 FORMER ARMY TYPE A-2**

NAMES: Bomb arming control  
Auxiliary arming mechanism  
Bomb arming control box

Fusing unit  
Selective fusing control  
Bomb fusing control

DESCRIPTION: The type AN-A-2 bomb arming control is a cylindrically shaped control used to arm the bomb as it is released from the shackle or rack. The control operates on a 24 to 28½ volt direct current supply.

**CHARACTERISTICS:**

Weight ..... approximately 1/8 pound  
Dimensions ..... approximately 1 1/8 by 1 1/4 by 4 inches  
Electrical connector plug ..... AN3106-10S-2S

RELATIONSHIP OF PARTS: When used with British Universal Bomb Carrier or on an airplane equipped with slide mounting rails, this unit must be equipped with a bomb arming control mount, Army type A-1, A. E. Reference Number 64-2270.

**ARMY**

A. E. REFERENCE NUMBER: 64-220

**SPECIFICATIONS:**

Detail ..... 93-24828  
Superseded ..... 24828

A. A. F. DRAWING NUMBER: 43B9887

TYPE DESIGNATION: AN-A-2

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped complete with electrical connector plug AN3106-10S-2S in a single container.

**NAVY**

TYPE DESIGNATION: AN-A-2

BUREAU OF ORDNANCE DRAWING NUMBER: 388363

AVIATION ORDNANCE STOCK LIST NUMBER: Refer to column 9 of the chart.

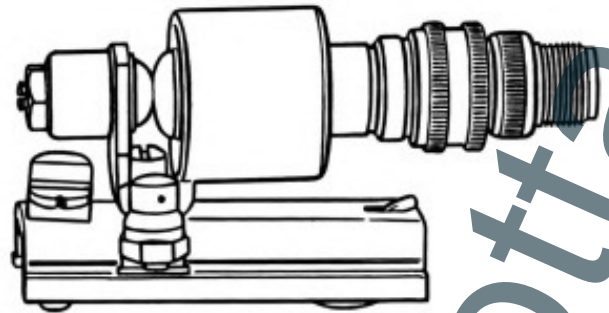
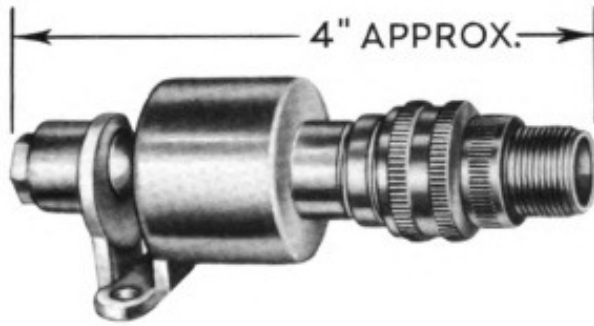
PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	AAF Type and Navy Type	Aviation Ordnance Stock List Number	Remarks
Magnavox Corporation	14D26G1	14D26G1	A-N-B	6400217050	11-5-47	105D/195	AN-A-2	3-C-1810	
J. P. Seeburg Company	A-1	BA-106000	A-N-B	6400217000		105D/194	AN-A-1	3-C-1805 (formerly 3-B-1969)	*
P. R. Mallory & Company, Incorporated	SF-6	C-134624 B-134163	A-N-B	6400217000	11-5-33	105D/99	AN-A-1	3-C-1805 (formerly 3-B-1969)	*
	SF-4	B-134163	N				Navy Type SF-4	3-B-1970	

\*Contains slide for attaching to mounting rails.





**CONTROL—BOMB ARMING**  
**ARMY TYPE B-2**

NAMES: Bomb arming control  
Auxiliary arming mechanism  
Bomb arming control box

Fusing unit  
Selective fusing control  
Bomb fusing control

DESCRIPTION: The type B-2 bomb arming control is a cylindrically-shaped control, used to arm the bomb as it is released from the shackle or rack. The control operates on a 12 to 14 1/4 volt direct current supply.

CHARACTERISTICS:

Weight . . . . . approximately 1/3 pound  
Dimensions . . . . . approximately 1 1/8 by 2 by 4 inches  
Electrical connector plug . . . . . AN3106-10S-2S

RELATIONSHIP OF PARTS: When used with British universal bomb carrier or on an airplane equipped with slide mounting rails, this unit must be equipped with an Army type A-1 bomb arming control mount. A. E. Reference Number 64-2270.

**ARMY**

A. E. REFERENCE NUMBER: 64-275

SPECIFICATIONS:

Detail . . . . . 93-24829  
Superseded . . . . . 24829

A. A. F. DRAWING NUMBER: 43B11958

TYPE DESIGNATION: B-2

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped complete with electrical connector plug AN3106-10S-2S in a single container.

**NAVY**

The Navy does not use this item.

**MODELS BELOW ARE INTERCHANGEABLE**  
**Models are used in services as noted in column 4**  
**A-Army, N-Navy, B-British**

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	AAF Type	Navy Type	Navy Bureau of Ordnance Drawing Number	Aviation Ordnance Stock List Number
Magnavox Corporation	14D26G4	14D26G4	A	6400217100	B-2			
P. R. Mallory & Co., Inc.	SF-10	Outline B-134163	N			SF-10	328446	3-B-1977



## **BOMB RELEASE INTERVAL CONTROL**

Bomb release interval controls permit the release of a uniformly spaced pattern or train of bombs, assuring one or more hits when crossing a target.

The bomb release interval control determines the time interval between release of successive bombs to give the desired ground spacing. To accomplish this, the ground speed is determined and set on the ground speed dial to correspond to the desired spacing between bombs.

A select-train switch is provided to allow bombs to be dropped selectively or in train. One bomb is released with each operation of the switch when in the select position, and a uniformly spaced pattern of bombs is released when the switch is in the train position.

The counter, or bombs to be released control, may be set manually, either forward or backward, according to the number of bombs to be released in each train. Resetting of this control may be accomplished at any time, provided at least one minute elapses between the time of resetting and the time of release of bombs.

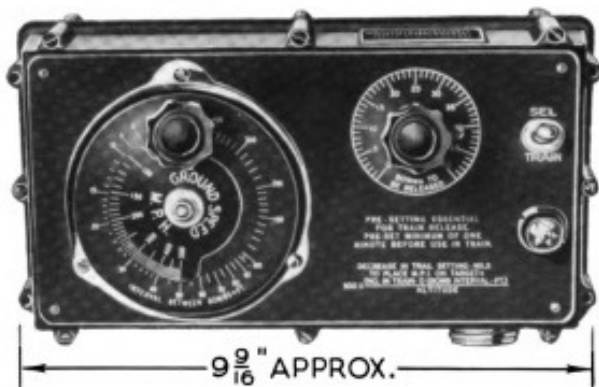
Bomb release interval controls are equipped with a signal light which indicates that the bomb release circuit is ready for operation. The light goes on when the select-train switch is in the select position, and in the train position only when the number of bombs to be released has been determined and the dial set. Bomb release interval controls with fluorescent markings have adjustable housing assemblies so that the signal light may be blacked out under ultra-violet light.

All controls are calibrated directly so that it is not necessary to refer to charts or to make calculations. They are marked in miles per hour or knots, and are available with either fluorescent or standard non-luminous markings.

For installation, refer to diagram on page 234.



# BOMB RELEASE INTERVAL CONTROLS ARMAMENT—BOMBING



## CONTROL—BOMB RELEASE INTERVAL ARMY TYPE B-2

NAMES: Bomb release interval control  
Interval control

Bomb release control  
Intervalometer (Navy)

DESCRIPTION: The type B-2 bomb release interval control operates on a 24 to 28½ volt direct current supply. The ground speed of the airplane is determined, and set on the ground speed dial opposite the desired spacing between bomb hits. The control has a fixed intensity amber signal light and dull white non-luminous markings.

### CHARACTERISTICS:

- Weight . . . . . approximately 5½ pounds
- Dimensions . . . . . approximately 9 9/16 by 6 by 4½ inches
- Electrical connector . . . . . Cannon GK-M5-32S, Bulletin K
- Ground speed dial range . . . . . 100 to 500 miles per hour
- Bomb spacing dial range . . . . . 7 to 400 feet
- Bombs to be released dial range . . . . . 2 to 20 bombs per second

### ARMY

A. E. REFERENCE NUMBER: 64-600

#### SPECIFICATIONS:

- Detail . . . . . 93-24630-A
- Superseded . . . . . 24630

A. A. F. DRAWING NUMBER: 41D1831

TYPE DESIGNATION: B-2

A. S. C. STOCK NUMBER: Refer to chart.

TECHINCAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation, superseded by Army type B-2A,

A. E. Reference Number 64-800.

SHIPPING DATA: Shipped as a complete unit.

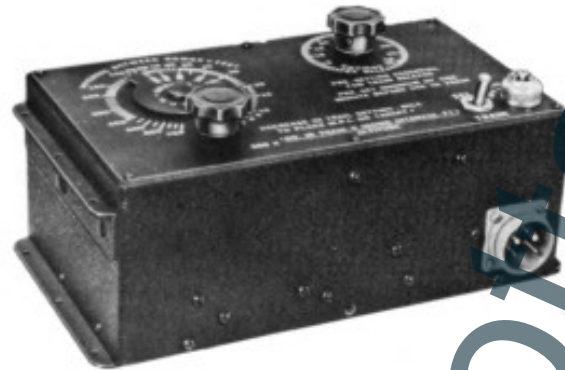
### NAVY

The Navy does not use the Army item.

### MODELS BELOW ARE INTERCHANGEABLE Models are used in services as noted in column 4 A-Army, N-Navy, B-British

Manufacturer	AAF Type and Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
P. R. Mallory & Co., Inc.	*B-2	Outline C-134558	A-B	6400217520	11-5-29	105D/30	Aluminum case.
	*B-2A	Outline C-134558	A-B	6400217550	11-5-29	105D/84	Aluminum case.
		Outline C-134729					
		Assembly C-134584					Aluminum case.
		Assembly C-134643					Steel case.
J. P. Seeburg Co.	*B-2A	Parts list B-184204					Steel case.
		BR-105000	A-B	6400217550	11-5-14 11-1-36	105D/84	

\*AAF type.



### CONTROL—BOMB RELEASE INTERVAL ARMY TYPE B-2A

NAMES: Bomb release interval control  
Interval control

Bomb release control  
Intervalometer (Navy)

DESCRIPTION: The type B-2A bomb release interval control operates on a 24 to 28½ volt direct current supply. The ground speed of the airplane is determined, and set on the ground speed dial opposite the desired spacing between bomb hits. The control uses a filament lamp with amber lens, and the light intensity is adjusted by rotating the lamp housing. Markings are fluorescent, and are visible under external and ultra-violet light.

CHARACTERISTICS:

- Weight ..... approximately 6½ pounds
- Dimensions ..... approximately 9 7/8 by 6 by 4½ inches
- Electrical connector ..... Cannon GK-M5-32S, Bulletin K
- Ground speed dial range ..... 100 to 500 miles per hour
- Bomb spacing dial range ..... 7 to 750 feet
- Bombs to be released dial range ..... 1 to 20 bombs per second.

ARMY

A. E. REFERENCE NUMBER: 64-800

SPECIFICATIONS:

- Detail ..... 93-24630-A (amended)
- Superseded ..... 93-24630

A. A. F. DRAWING NUMBER: 41D10802

TYPE DESIGNATION: B-2A

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation. Superseded by type AN-B-3.

SHIPPING DATA: Shipped as a complete unit.

NAVY

TYPE DESIGNATION: B-2A

AVIATION ORDNANCE STOCK LIST NUMBER: 3-C-1875

PROCUREMENT STATUS: Not under procurement for initial installation.

MODELS BELOW ARE INTERCHANGEABLE  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	AAF Type and Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	Remarks
P. R. Mallory & Co., Inc.	*B-2A	Outline C-134558	A-B	6400217550	11-5-29	105D/84	Aluminum case.
		Outline C-134729					Steel case.
		Assembly C-134584					Aluminum case.
		Assembly C-134643					Steel case.
J. P. Seeburg Co.	*B-2A	RR-105900	A-B	6400217550	11-5-14	105D/84	
					11-1-36		

Note: \*AAF type



# BOMB RELEASE INTERVAL CONTROLS ARMAMENT—BOMBING



9 3/8" APPROX.

## CONTROL—BOMB RELEASE INTERVAL TYPE AN-B-3 FORMER ARMY TYPE B-3

NAMES: Bomb release interval control  
Interval control

Bomb release control  
Intervalometer (Navy and British type)

DESCRIPTION: The type AN-B-3 bomb release interval control operates on a 24 to 28 1/2 volt direct current supply. The ground speed of the airplane is determined, and set on the ground speed dial opposite the desired spacing between bomb hits. The control uses a filament lamp with amber lens, and the light intensity is adjusted by rotating the lamp housing. Markings are fluorescent, and are visible under external and ultra-violet light.

### CHARACTERISTICS:

- Weight . . . . . approximately 6 pounds
- Dimensions . . . . . approximately 9 3/8 by 6 by 4 1/2 inches
- Electrical connector . . . . . AN3102-14S-7P
- Ground speed dial range . . . . . 100 to 500 miles per hour
- Opposite face of ground speed dial range . . . . . 90 to 460 knots. (Navy use)
- Bomb spacing dial range . . . . . 7 to 750 feet
- Bombs to be released dial range . . . . . 1 to 20 bombs per second

### ARMY

A. E. REFERENCE NUMBER: 64-825

#### SPECIFICATIONS:

- Detail . . . . . 93-24717
- Superseded . . . . . 24717

A. A. F. DRAWING NUMBER: 42D3116

TYPE DESIGNATION NUMBER: AN-B-3

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: shipped as a complete unit.

### NAVY

TYPE DESIGNATION: AN-B-3

AVIATION ORDNANCE STOCK LIST NUMBER: 3-C-1880 (formerly 3-I-495)

PROCUREMENT STATUS: Not under procurement for initial installation, superseded by Navy type K-2.

### MODELS BELOW ARE INTERCHANGEABLE Models are used in services as noted in column 4 A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number	AAF Type	Navy Type	Remarks
P. R. Mallory & Co., Inc.	*AN-B-3	Outline C-134558	A-N-B	6400217700	11-5-29	105D/94	AN-B-3	AN-B-3	Aluminum case.
		Outline C-134729							Steel case.
	†K-2	Outline C-134558	N-B			105D/31		K-2	Aluminum case.†
		Outline C-134729							Steel case.†
J. P. Seeburg Co.	*AN-B-3	BR-105100	A-N	6400217700			AN-B-3	AN-B-3	

†NOTE: Graduated in knots only. The range of the ground speed dial is 90 to 460 knots for the unit in the steel case and 100 to 450 knots for the one in the aluminum case. The bomb spacing dial range is 7 to 400 feet, and the bombs to be released dial range is 2 to 20 bombs per second. The type K-2 and type AN-B-3 are interchangeable electrically and installationally.

Note: \*AAF type; †Navy type.



**CONTROL—PILOT DIRECTOR INDICATOR**  
**ARMY TYPE A-1**

**NAMES:** Pilot director indicator control  
P. D. I. control

**DESCRIPTION:** The Army type A-1 pilot director indicator control provides the bombardier with a means of indicating to the pilot, through the pilot director indicator, changes to be made in the heading or direction of the airplane to complete a bombing run. The control consists of a selector switch, mounted in a cylindrical container, with markings indicating zero, right and left. Movement of the control knob by the bombardier causes the pointer on the pilot director indicator in the pilot's cockpit to move accordingly. When the airplane is on the desired course the bombardier releases the control knob, and it is returned to the zero position by spring action.

**CHARACTERISTICS:**

Dimensions .....	approximately 3 7/8 by 3 1/4 by 2 1/2 inches
Weight .....	approximately 1/2 pound
Illumination .....	none
Markings .....	white enamel
Voltage .....	24 volts direct current

**RELATIONSHIP OF PARTS:** Used with:

Pilot director indicator, A. E. Reference Numbers 64-2255, or 64-2257 when the airplane does not have an Army type C-1 automatic pilot.

**ARMY**

A. E. REFERENCE NUMBER: 64-835

**SPECIFICATIONS:**

Detail .....

MANUFACTURER: P. R. Mallory Company, Incorporated.

MANUFACTURER'S DRAWING NUMBER Outline B-134405  
Part C-134815

TYPE DESIGNATION: A-1

A. S. C. STOCK NUMBER: 6400219325

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for the Army item.



**COVER—ELECTRICALLY  
HEATED BOMBSIGHT**

**ARMY TYPE A-1 NAVY MARK 1**

**NAMES:** Electrically heated bombsight cover  
Bombsight blanket (Navy)  
Bombsight cover  
Electrically heated bombsight blanket

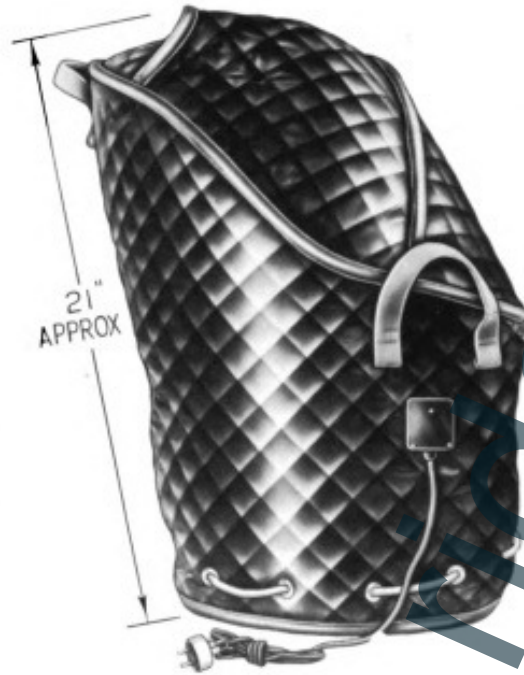
**DESCRIPTION:** The Army type A-1 electrically heated bombsight cover is used as a protective coat to retain the heat produced by the bombsight and to supply heat to the bombsight in low temperatures.

The cover is of sufficient size to cover both the bombsight and the stabilizer, and is secured about the stabilizer base with a draw cord and clamp.

The cover is made of woolen batting quilted to cotton fabric. The electrical heating wires are sewed to the inner cotton fabric.

Automatic thermostatic control is provided in the electrical circuit to prevent overheating. The thermostat is encased in a metal tube which is attached to the inner lining of the bombsight cover.

The power supply cable is approximately sixty inches long, and connects to the aircraft electrical circuit by a male plug.



**CHARACTERISTICS:**

Weight.....	approximately 6 pounds
Navy type electrical connector.....	AN3106-16-11P
Army type electrical connector.....	Twist lock plug, Hubbel part number 7542 or 7545
Maximum external temperature range.....	Minus 60 to plus 170 degrees fahrenheit (Minus 51 to plus 77 degrees centigrade)
Minimum heating requirement.....	Maintains plus 15 degrees fahrenheit (Minus 9.4 degrees centigrade) at external temperature of minus 60 degrees fahrenheit (minus 51 degrees centigrade)

**RELATIONSHIP OF PARTS:** Used with:

Army type M-series bombsight, and stabilizer  
Navy Mark 15, modification 5 and 7 bombsight, and stabilizer

**ARMY**

**A. E. REFERENCE NUMBER:** 64-850  
**MANUFACTURER:** General Electric Company  
**MANUFACTURER'S PART NUMBER:** G. E. catalog number PC 15A6

**SPECIFICATIONS:**

Detail.....	40453-A
Superseded.....	40453

**A. A. F. DRAWING NUMBER:** 42M16384

**TYPE DESIGNATION:** A-1

**A. S. C. STOCK NUMBER:** 6400225915

**TECHNICAL ORDER NUMBER:** 11-30-1 and 11-30-9

**PRODUCTION STATUS:** Under procurement.

**SHIPPING DATA:** Shipped as a complete unit.

**SHIPPING WEIGHT:** approximately 7 pounds.

**SHIPPING CARTON DIMENSIONS:** approximately 22 3/4 by 20 by 4 5/8 inches.

**NAVY**

**TYPE DESIGNATION:** Mark 1

**AVIATION ORDNANCE STOCK LIST NUMBER:** 2-B-1900

**ORDNANCE TECHNICAL INSTRUCTIONS NUMBER:** V-4-43

**PROCUREMENT STATUS:** Under procurement.

**INTERCHANGEABILITY:** To effect interchangeability between Army and Navy types, the proper electrical connector must be used.



**COVER—ELECTRICALLY  
HEATED BOMBSIGHT  
ARMY TYPE A-2**

**NAMES:** Electrically heated bombsight cover  
Bombsight blanket  
Bombsight cover  
Electrically heated bombsight blanket

**DESCRIPTION:** The Army type A-2 electrically heated bombsight cover is used as a protective coat, to retain the heat produced by the bombsight and to supply heat to the bombsight in low temperatures.

The cover is made of woolen batting quilted to cotton fabric. The electrical heating wires are sewed to the inner cotton fabric.

Automatic thermostatic control is provided in the electrical circuit to prevent overheating. The thermostat is encased in a metal tube which is attached to the inner lining of the bombsight cover.

The cover is secured about the bombsight with snap fasteners.

The power supply cable is approximately sixty inches long, and connects to the aircraft electrical circuit by a male plug.



**CHARACTERISTICS:**

Weight.....	approximately 7 pounds
Electrical connector.....	twist lock plug, Hubbel part number 7542 or 7545
Maximum external temperature range.....	minus 60 to plus 170 degrees fahrenheit (minus 51 to plus 77 degrees centigrade)
Minimum heating requirements.....	maintains plus 15 degrees fahrenheit (minus 9.4 degrees centigrade) at external temperature of minus 60 degrees fahrenheit (minus 51 degrees centigrade)

**RELATIONSHIP OF PARTS:** Used with:  
Army type S-1 bombsight

**ARMY**

**A. E. REFERENCE NUMBER:** 64-852

**SPECIFICATIONS:**

Detail.....40630

**MANUFACTURER:** General Electric Company

**MANUFACTURER'S PART NUMBER:** G. E. catalog number PC 16A1

**TYPE DESIGNATION:** A-2

**A. S. C. STOCK NUMBER:** 6400225912

**TECHNICAL ORDER NUMBER:** 11-30-10

**PRODUCTION STATUS:** Under procurement

**SHIPPING DATA:** Shipped as a complete unit

**SHIPPING WEIGHT:** approximately 9 pounds

**SHIPPING CARTON DIMENSIONS:** approximately 16 by 16 by 6 inches

**NAVY**

There is no Navy equivalent for the Army item.

**BRITISH**

**REFERENCE NUMBER:** 109/43





**COVER — ELECTRICALLY HEATED AUTOMATIC PILOT**  
**GENERAL ELECTRIC CATALOG NUMBER PK 1A1**

**NAMES:** Electrically heated automatic pilot cover      Electrically heated cover  
 A. F. C. E. cover      Electrically heated automatic pilot blanket  
 Electrically heated A. F. C. E. cover

**DESCRIPTION:** The electrically heated automatic pilot cover for the Army type C-1 automatic pilot consists of three type A-3 covers for the servo units and one type A-4 cover for the vertical gyro control unit.

The covers provide a protective coat to retain heat produced by the automatic pilot and to supply heat to the automatic pilot units for low temperature operation.

The covers are made of woolen batting quilted to cotton fabric. The electrical heating wires are sewed to the inner cotton fabric.

Automatic thermostatic control is provided in the electrical circuit to prevent overheating. The thermostat is encased in a metal tube which is attached to the inner lining of the cover.

A power supply cable on each cover is connected to the aircraft electrical circuit by a male plug.

**CHARACTERISTICS:**

Electrical connector .....	Twist lock plug, Hubbel part number 7542 or 7545
Maximum external temperature range .....	Minus 60 to plus 170 degrees fahrenheit (minus 51 to plus 77 degrees centigrade)
Minimum heating requirement .....	Maintains plus 15 degrees fahrenheit (minus 9.4 degrees centigrade) at external temperature of minus 60 degrees fahrenheit (minus 51 degrees centigrade)

**RELATIONSHIP OF PARTS:** Used with:

Servo unit of Army type C-1 automatic pilot and vertical gyro control unit of Army type C-1 automatic pilot.

**ARMY**

**A. E. REFERENCE NUMBER:** 64-855

**SPECIFICATIONS:**

Detail .....

**MANUFACTURER:** General Electric Company

**MANUFACTURER'S PART NUMBER:** G. E. catalog number PK 1A1

**TYPE DESIGNATION:** A-3 for servo unit cover, A-4 for vertical gyro control cover

**A. S. C. STOCK NUMBER:** 6400225911

**TECHNICAL ORDER NUMBER:** 11-30-11

**PRODUCTION STATUS:** Under procurement

**SHIPPING DATA:** Shipped as a complete unit, consisting of 3 electrically heated covers, type A-3 for servo units and 1 electrically heated cover type A-4 for vertical gyro control unit.

**SHIPPING WEIGHT:** approximately 16 pounds

**SHIPPING CARTON DIMENSIONS:** approximately 22 by 12 by 17 inches.

**NAVY**

There is no Navy equivalent for the Army item.



## **TORPEDO DIRECTORS**

The function of the torpedo director is to determine the proper course upon which to set an airplane before launching a torpedo toward the desired target to assure interception of the target. The torpedo itself must be set for a straight run to permit accurate calculation. The factors to be considered in making calculations are the torpedo speed, the target speed, and the approach angle. Of these factors, only the torpedo speed is known, and consequently the target speed and approach angle must be estimated. The factors are then set upon the torpedo director controls and the airplane turned through the approach angle until the target appears in the sight, whereupon the torpedo is launched.

The various types of torpedo directors differ in general appearance and construction since some models employ an optical illuminated sight and other models are equipped with a non-optical sighting bar. All types perform identical functions and utilize similar steps for estimations and calculations.

In order to insure that the calculations performed will be satisfactory to complete the torpedoing mission, predetermined altitude, launching speed and torpedo range must be adhered to.

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# DIRECTOR—TORPEDO MARK 28 MODIFICATION 2

NAMES: Torpedo director  
Director assembly—torpedo

DESCRIPTION: The Mark 28 Modification 2 torpedo director is shaped in the form of a drum, and is provided with six scales to permit calculation of sight alignment for six different torpedo speeds. Target speed is estimated over a calibrated range. The sight angle scale is graduated in two sections, each ranging from 0° to 180°. The target direction angle is estimated, and the estimated angle is set on a movable pointer. The resultant angle of these calculations enables the pilot to change the course of the airplane to the proper position for launching a torpedo.



**CHARACTERISTICS:**

Weight..... approximately 4½ pounds  
Outline dimensions..... approximately 8½ by 8½ by 8⅛ inches

INSTALLATION PECULIARITIES: A sun guard must be used with this director, to prevent the plastic pointer from warping. This guard is removed prior to operation of the director.

**ARMY**

A. E. REFERENCE NUMBER: 64-900  
TYPE DESIGNATION: Mark 28 Modification 2.  
A. S. C. STOCK NUMBER: Refer to chart.  
TECHNICAL ORDER NUMBER: Refer to chart.  
PRODUCTION STATUS: Not under procurement for initial installation. Superseded by Army type B-2, A. E. Reference Number 64-950.  
SHIPPING DATA: Shipped as a complete unit, including a mounting bracket.

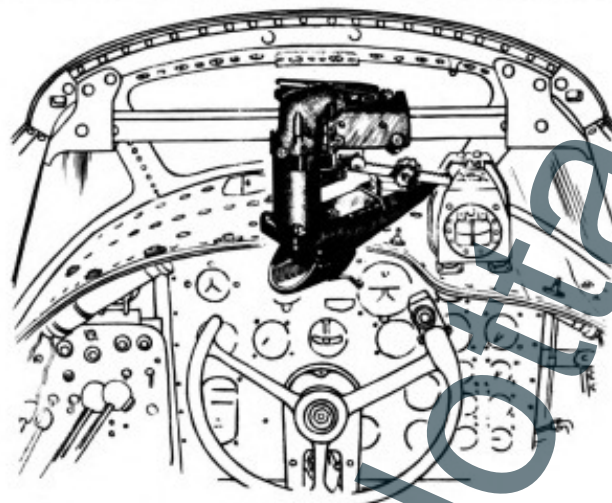
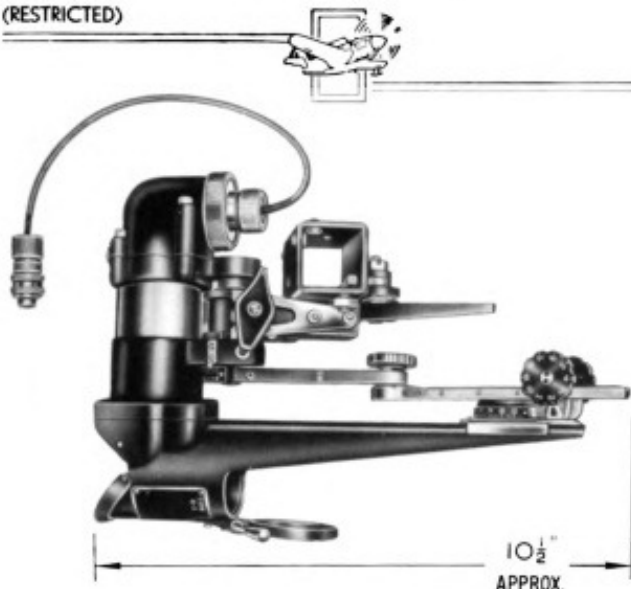
**NAVY**

TYPE DESIGNATION: Mark 28 Modification 2.  
BUREAU OF ORDNANCE DRAWING NUMBER: 275122  
AVIATION ORDNANCE STOCK LIST: 2-D-155  
ORDNANCE DATA NUMBERS: 3786 and 4410  
ORDNANCE PAMPHLET NUMBER: 865  
PROCUREMENT STATUS: Under procurement

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
A. C. Spark Plug Division of General Motors	Mark 28 Modification 2	1590752	A-N-B	6400242425	11-50-1 11-50-2	109/40
Douglas Aircraft Corporation	Mark 28 Modification 2	1590752	A-N-B	6400242425	11-50-1 11-50-2	109/40

Above items are completely interchangeable with Mark 28 Torpedo Director. The only difference in the two directors is that the Mark 28 director has three torpedo speed scales, and the Mark 28 Modification 2 director has six torpedo speed scales.



**DIRECTOR—TORPEDO**  
**ARMY TYPE B-2**

NAMES: Torpedo director

Director assembly—torpedo

**DESCRIPTION:** The Army type B-2 torpedo director is an optical, illuminated sighting device used on torpedo carrying airplanes. It is mounted on a square bar forward of the pilot's or co-pilot's station, and 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 by adjusting the director to a position parallel to the center line of the airplane, and in alignment with the line of fire.

**CHARACTERISTICS:**

- Weight..... approximately 23 1/4 pounds
- Dimensions..... approximately 10 1/2 by 7 1/4 by 7 1/2 inches
- Electrical connector..... AN3102-8S-1P
- Electrical cable length..... approximately 9 inches
- Lamp bulb..... Lamp, trade number 1666, I.F., 28 volts 21-21 C.P. S-8 I.F. bulb D.C. bay. base

**ARMY**

A. E. REFERENCE NUMBER: 64-950

**SPECIFICATIONS:**

Detail..... R-24789

A. A. F. DRAWING NUMBER: 43G7095

SUPERSEDED DRAWING NUMBER: 42G16373

TYPE DESIGNATION: B-2

A. S. C. STOCK NUMBER: Refer to chart.

TECHNICAL ORDER NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit including electrical cable and connector.

**NAVY**

TYPE DESIGNATION: B-2

AVIATION ORDNANCE STOCK LIST NUMBER: 2-D-176

PROCUREMENT STATUS: Procured from Army.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	Army Technical Order Number	British Reference Number
J. H. Keeney & Co.	AB-2	43G7095	A-N-B	6400242430	11-50-3	109/44
Douglas Aircraft Co.	RCL-2	5147380	A-B	6400242430	11-50-3	109/44

The above torpedo directors are interchangeable as complete units, but the optical systems are not interchangeable.  
Note: \*AAF type; \*\*AAF drawing.

RELEASE HANDLES  
ARMAMENT—BOMBING



**HANDLE—BOMB RELEASE**  
ARMY TYPE A-3 NAVY TYPE A-3

NAMES: Bomb release handle Tee-grip bomb release handle  
Bomb release handle assembly

DESCRIPTION: The type A-3 bomb release handle is used to release bombs and droppable cargo. Its application is restricted to the mechanical release of one bomb rack or multiple racks in salvo.

The handle is composed of a tee-grip, flexible spring, and a two hole mounting bracket.

Actuation of the bomb rack is accomplished by a flexible cable, one end of which is attached to the release handle and the other end to the bomb release mechanism.

CHARACTERISTICS:

Weight..... approximately 1/2 pound  
Dimensions..... approximately 6 1/4 by 2 1/8 by 3 inches

INSTALLATION PECULIARITIES: A 1/16 inch cable, specification number 48-22, is attached at the time of installation in the airplane.

**ARMY**

A. E. REFERENCE NUMBER: 64-1400

SPECIFICATIONS:

Detail..... 93-24542  
Superseded..... 24542

A. A. F. DRAWING NUMBER: 0159268

TYPE DESIGNATION: A-3

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation, superseded by Army type A-3A, A. E. Reference Number 64-1600, and Army type A-3B, A. E. Reference Number 64-1610.

SHIPPING DATA: Shipped as a complete unit, disassembled.

**NAVY**

TYPE DESIGNATION: A-3

BUREAU OF ORDNANCE DRAWING NUMBER: 155892 and 155981

AVIATION ORDNANCE STOCK LIST NUMBER: 3-H-635

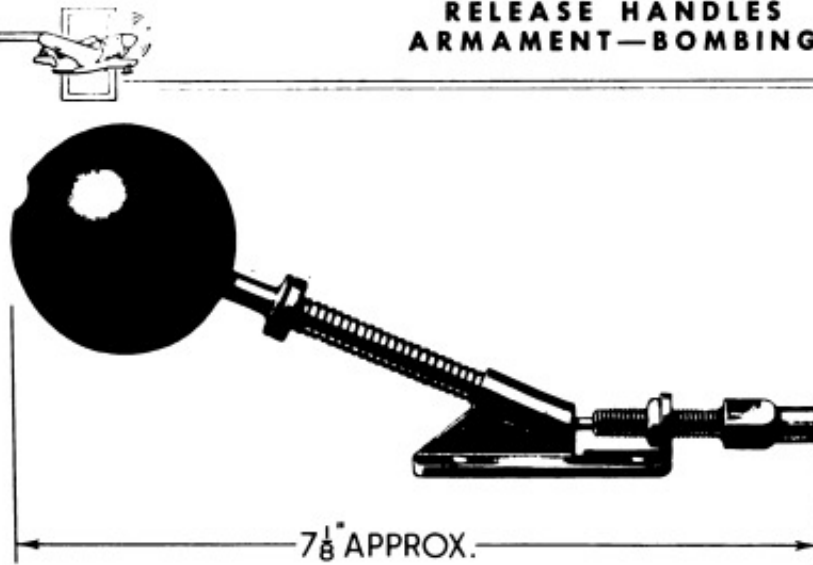
NAVY PUBLICATION: Ordnance Pamphlet Number 865

PROCUREMENT STATUS: Under procurement.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
Husband Aircraft Specialties, Incorporated	*A-3	**0159268	A-N-B	6400312100	111A/30
National Mineral Company	*A-3	**0159268	A-N-B	6400312100	111A/30
	*A-3A	**41810395	A-B	6400309950	111A/59
	*A-3B	**43811390	A-B	6400309975	111A/51
Union Steel Products Company	*A-3	†155982	N	6400312100	111A/30

Note: \*AAF type; \*\*AAF drawing; †Bureau of Ordnance Drawing.



**HANDLE—BOMB AND FLARE RELEASE**  
**ARMY TYPE A-3A**

**NAMES:** Bomb and flare release handle  
Bomb and flare release handle assembly  
Ball-grip bomb and flare release handle

**DESCRIPTION:** The Army type A-3A bomb and flare release handle is used to release bombs, flares or droppable cargo. Its application is restricted to the mechanical release of one bomb rack, or multiple racks in salvo.  
The release handle is composed of a ball-grip, flexible spring, and a two hole mounting bracket. Actuation of the bomb rack is accomplished by a flexible cable, one end of which is attached to the release handle and the other end to the bomb release mechanism.

**CHARACTERISTICS:**

Weight ..... approximately 1/4 pound  
Dimensions ..... approximately 7 1/8 by 3 1/2 by 2 inches

**INSTALLATION PECULIARITIES:** A 1/16 inch cable, specification number AN-RR-C-43, is attached at the time of installation in the airplane.

**ARMY**

A. E. REFERENCE NUMBER: 64-1600

**SPECIFICATIONS:**

Detail ..... 93-24542-A  
Superseded ..... 93-24542

A. A. F. DRAWING NUMBER: 41B10395

TYPE DESIGNATION: A-3A

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Not under procurement for initial installation, superseded by Army type A-3B, A. E. Reference Number 64-1610.

SHIPPING DATA: Shipped as a complete unit, disassembled.

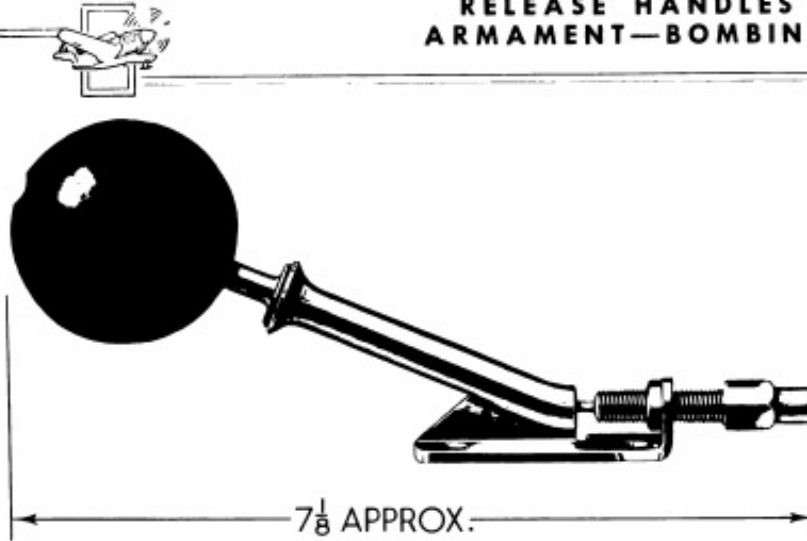
**NAVY**

There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
National Mineral Company	*A-3A	**41B10395	A-B	6400309950	111A/59
	*A-3	**0159268	A-N-B	6400312100	111A/30
	*A-3B	**43B11390	A-B	6400309975	111A/51
Husband Aircraft Specialties, Incorporated	*A-3	**0159268	A-N-B	6400312100	111A/30

\*AAF type; \*\*AAF drawing.



**HANDLE—BOMB AND FLARE RELEASE**  
**ARMY TYPE A-3B**

NAMES: Bomb and flare release handle                      Ball-grip bomb and flare release handle  
Bomb and flare release handle assembly

DESCRIPTION: The Army type A-3B bomb and flare release handle is used to release bombs, flares or droppable cargo. Its application is restricted to the mechanical release of one bomb rack or multiple racks in salvo.  
The release handle is composed of a ball-grip and a tubular section set at an angle and welded to a two hole mounting bracket.  
Actuation of the bomb rack is accomplished by a flexible cable, one end of which is attached to the release handle and the other end to the bomb release mechanism.

CHARACTERISTICS:

Weight ..... approximately 3/4 pound  
Dimensions ..... approximately 7 1/8 by 3 1/8 by 2 inches

INSTALLATION PECULIARITIES: A 1/16 inch cable, specification number AN-BR-C-43, is attached at the time of installation in the airplane.

**ARMY**

A. E. REFERENCE NUMBER: 64-1610

SPECIFICATIONS:

Detail ..... 93-24542B  
Superseded ..... 93-24542

A. A. F. DRAWING NUMBER: 43B11390

TYPE DESIGNATION: A-3B

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit, disassembled.

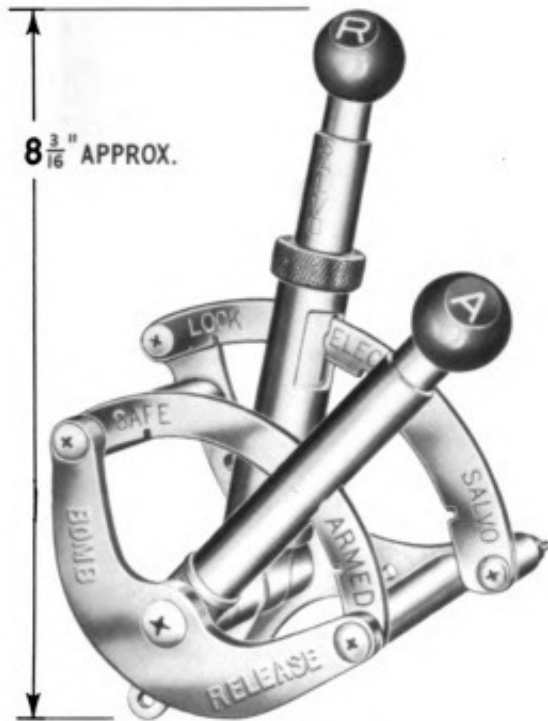
**NAVY**

There is no Navy equivalent for the Army item.

**MODELS BELOW ARE INTERCHANGEABLE**  
Models are used in services as noted in column 4  
A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
National Mineral Company	*A-3B	**43B11390	A-B	6400309975	111A/51
	*A-3A	**41B10395	A-B	6400309950	111A/59
	*A-3	**0159268	A-N-B	6400312100	111A/30
Husband Aircraft Specialties, Incorporated	*A-3	**0159268	A-N-B	6400312100	111A/30

Note: \*AAF type; \*\*AAF drawing.



### HANDLE—BOMB RELEASE

ARMY TYPE L-21A NAVY TYPE L-21A

NAMES: Bomb release handle  
Bomb release handle assembly  
Bomb rack handle

DESCRIPTION: The type L-21A bomb release handle is used for the manual release of bombs and flares. Provision is made for release of bombs in either SAFE or ARMED condition.

When the release handle is used in a completely mechanical bomb release circuit, bombs can be released in salvo only. When the release handle is used to control electrical bomb release circuits, the handle must be placed in either the selective or salvo position before the release of bombs is accomplished by the bombardier's electrical release switch.

#### CHARACTERISTICS:

Dimensions.....approximately 8<sup>3</sup>/<sub>16</sub> by 8<sup>3</sup>/<sub>16</sub> by 3<sup>7</sup>/<sub>8</sub> inches  
Weight.....approximately 1<sup>1</sup>/<sub>8</sub> pounds

INSTALLATION PECULIARITIES: The type L-21A bomb release handle is normally used for left hand installation. For right hand installation, the sectors and lever must be reversed as shown on Army drawing number 38B5990.

#### ARMY

A. E. REFERENCE NUMBER: 64-1800

#### SPECIFICATIONS:

Detail.....93-24563A  
Superseded.....93-24563

A. A. F. DRAWING NUMBER: 38D5989

TYPE DESIGNATION: L-21A

A. S. C. STOCK NUMBER: Refer to chart.

PRODUCTION STATUS: Under procurement.

SHIPPING DATA: Shipped as a complete unit.

#### NAVY

TYPE DESIGNATION: L-21A

BUREAU OF ORDNANCE DRAWING NUMBER: 308078

AVIATION ORDNANCE STOCK LIST NUMBER: 3-H-645

PROCUREMENT STATUS: Under procurement

#### MODELS BELOW ARE INTERCHANGEABLE

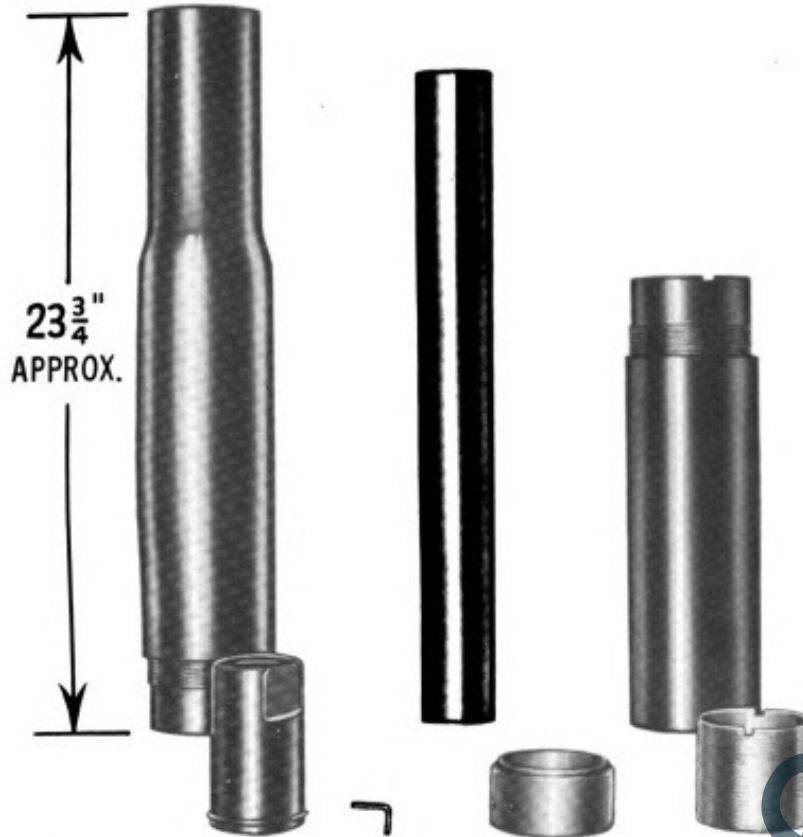
Models are used in services as noted in column 4

A-Army, N-Navy, B-British

Manufacturer	Manufacturer's Model Identification	Manufacturer's Drawing Number	Used By	Air Service Command Stock Number	British Reference Number
Arro Tool and Engineering Company	*L-21A	**38D5989	A-N-B	6400313900	111A/35
Guardian Electric Manufacturing Company	*L-21A	20933	A-N-B	6400313900	111A/35
Aero Supply Manufacturing Company, Incorporated	L-21A	308078	N	6400313900	111A/35

Note: \*AAF type; \*\*AAF drawing.





**ADAPTER, 20-MM, AN-M6**  
FORMER ARMY TYPE M6

- NAMES: 20-mm adapter  
 Adapter assembly—20-mm recoil absorption  
 Adapter, gun mount, AG 20-mm (M-1 and M-2)
- Recoil absorption adapter  
 Ring spring cartridge—20-mm gun adapter  
 Edgewater 20-mm recoil adapter

**DESCRIPTION:** The 20-mm, AN-M6 adapter assembly is used to absorb the recoil force of the 20-mm gun, and to limit the recoil travel. If recoil travel is too long, it will damage the gun, and if too short, it will deprive the feed mechanism of its power.

For proper operation, the adapter must be mounted on the barrel of the gun near the muzzle. An extension and spacer sleeve provide means of attaching the adapter to the gun mounting. Spacer sleeves of several lengths are furnished, to facilitate installation and attachment.

The AN-M6 adapter assembly contains a rear mounting extension, which distinguishes it from the AN-M1 adapter assembly. The two assemblies are identical in all other respects.

**CHARACTERISTICS:**

- Dimensions.....approximately 41½ by 3 by 3 inches assembled  
 Weight.....approximately 14½ pounds  
 Adapter type.....ring spring cartridge

(Continued on page 303)



**ADAPTER, 20-MM, AN-M6**

*(Continued from page 302)*

**RELATIONSHIP OF PARTS:** The type AN-M6 adapter is used with the automatic 20-mm guns, type M1 and AN-M2. One end of the adapter is fastened to the barrel of the gun, and the other to the gun mount.

**ARMY**

A. E. REFERENCE NUMBER: 93-250  
A. A. F. DRAWING NUMBER: H41D10198  
TYPE DESIGNATION: AN-M6  
TECHNICAL ORDER NUMBER: 11-1-16  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: The adapter assembly is shipped as a complete unit which contains the various components necessary for installation.

**NAVY**

TYPE DESIGNATION: AN-M1 with rear mounting extension.  
BUREAU OF ORDNANCE DRAWING NUMBER: 328544  
F. S. S. C. NUMBER: 1-A-56  
ORDNANCE DATA NUMBER: 4447  
PROCUREMENT STATUS: Under procurement.

**ORDNANCE**

MODEL: AN-M6  
ORDNANCE DRAWING NUMBER: D36593  
STANDARD NOMENCLATURE LIST NUMBER: A-47  
WAR DEPT. TECHNICAL MANUAL NUMBER: 9-227

**INTERCHANGEABILITY**

The omission of the rear mounting extension makes the type AN-M6 completely interchangeable with AN-M1.

**SUPPLIED BY**

Ordnance office, War Department.

**USED BY**

Army and Navy.

DEMO  
dimensione ridotta



## AIRCRAFT MACHINE GUNS

Aircraft machine guns are used offensively or defensively against enemy aircraft or ground objectives, and are fired from fixed, flexible, or turret installations.

The caliber .30 and .50 Browning aircraft machine guns are recoil-operated, belt-fed, and air-cooled. Upon depressing the trigger, the gun operation becomes fully automatic, and it will continue to fire within the limit of the ammunition supply or until the trigger is released. Firing is accomplished manually by depressing the trigger, or electrically by a solenoid which is operated from a gun switch. The recoil of the gun supplies the power necessary to extract ammunition from the belt, feed it into the chamber, cock and fire the gun, eject the empty cartridge case, and move the next round into the feedway. Charging the gun for initial firing, or following stoppages, is performed manually, by retracting the handle of the slide group assembly, or remotely, by operating the control valve of a pneumatic or hydraulic gun charger.

These guns may be fed from the left or right side, and may be converted to either feed by reversing a few minor parts. A disintegrating metallic link belt is normally used to supply ammunition to the guns. The belt separates into individual links upon the removal of the loaded cartridge.

Guns may be mounted in the fuselage or in the wings, and require the use of gun mounts or adapters, depending upon the individual installation. When mounted to fire through the propeller arc, the gun must be equipped with a synchronizer, to prevent damage to the propeller.

*(Continued on page 805)*



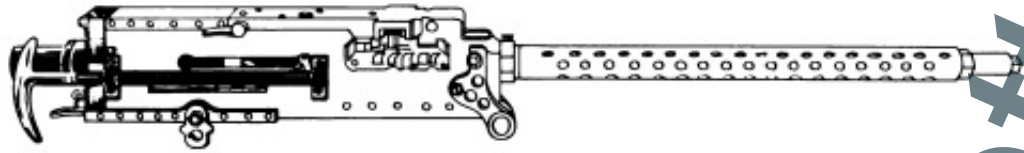
# AIRCRAFT MACHINE GUNS

(Continued from page 304)

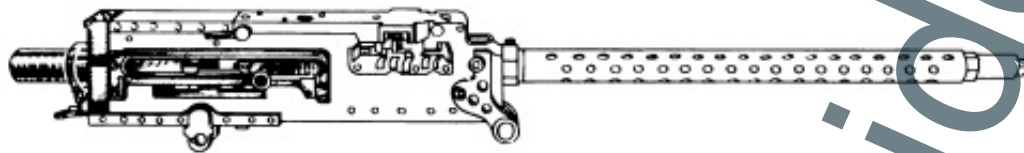
## INSTALLATION TYPES

**CALIBER .30**

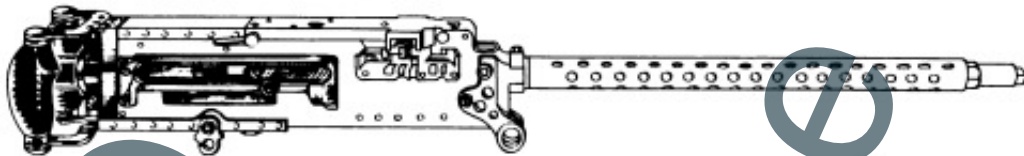
### BROWNING AIRCRAFT MACHINE GUN



**FIXED MACHINE GUN**  
(Including fixed back plate and operating slide group assembly)

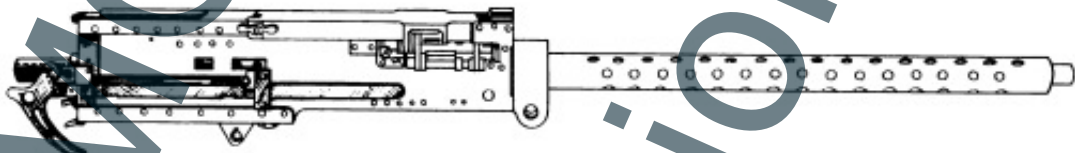


**FLEXIBLE, WITH FIXED BACK PLATE, MACHINE GUN**  
(Including fixed back plate and retracting slide group assembly.) Used in turret installations.

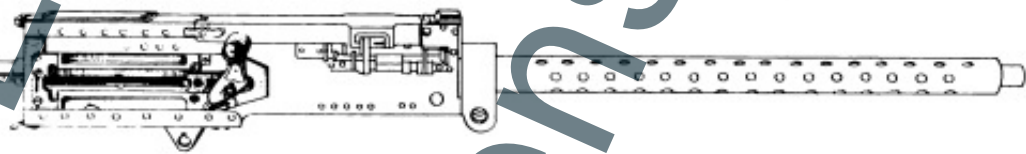


**FLEXIBLE MACHINE GUN**  
(Including flexible back plate and retracting slide group assembly)

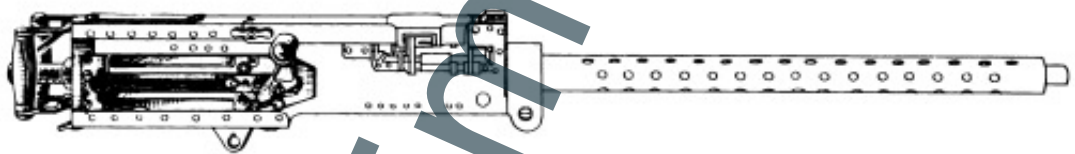
**CALIBER .50**



**FIXED MACHINE GUN**  
(Including fixed back plate and operating slide group assembly)



**FLEXIBLE, WITH FIXED BACK PLATE, MACHINE GUN**  
(Including fixed back plate and retracting slide group assembly.) Used in turret installations.



**FLEXIBLE MACHINE GUN**  
(Including flexible back plate and retracting slide group assembly)



**GUN MACHINE, CALIBER .30, BROWNING,  
M2, AIRCRAFT, FIXED**

**NAMES:** Browning machine gun, caliber .30, M2, aircraft, fixed  
Browning aircraft fixed machine gun, caliber .30  
Machine gun, .30 caliber—Browning aircraft—fixed  
Gun—machine .30 caliber—Browning aircraft—fixed

**DESCRIPTION:** The M2 caliber .30 Browning aircraft fixed machine gun is used in installations requiring the gun to be fired in one direction only from a fixed position in the wings or fuselage.

This gun is a caliber .30 aircraft machine gun equipped with an operating slide group assembly, which may be mounted to either side of the gun for charging. A cable may be attached to the operating slide group assembly to permit its operation in remote installations. The fixed gun referred to in this description does not contain a trigger bar or trigger bar pin, since firing is accomplished remotely through the use of an electrical solenoid and firing switch.

**CHARACTERISTICS:**

Weight . . . . . approximately 21 1/2 pounds  
Outline dimensions . . . . . approximately 39 1/4 by 5 1/2 by 3 1/4 inches  
Rate of fire . . . . . 1350 rounds per minute  
Muzzle velocity . . . . . approximately 2700 feet per second

**RELATIONSHIP OF PARTS:** The gun is attached to the airplane by any fixed .30 caliber gun mount or gun mount adapter.

**ARMY**

A. E. REFERENCE NUMBER: 93-1420  
A. A. F. DRAWING NUMBER: H39G5331  
TYPE DESIGNATION: M2  
TECHNICAL ORDER NUMBER: 11-1-28  
PRODUCTION STATUS: Under procurement  
SHIPPING DATA: Shipped complete with operating slide group assembly.

**NAVY**

TYPE DESIGNATION: M2  
BUREAU OF ORDNANCE DRAWING NUMBER: 204675  
AVIATION ORDNANCE STOCK LIST NUMBER: 1-G-5606  
ORDNANCE PAMPHLET NUMBER: 714, 398, 865  
PROCUREMENT STATUS: Under procurement

**ORDNANCE**

MODEL: M2  
ORDNANCE DRAWING NUMBER: 51-57-3  
51-57-3A (List of Parts)  
STANDARD NOMENCLATURE LIST NUMBER: A-28  
WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-205  
9-1205

**BRITISH**

REFERENCE NUMBER: 107L/391

**INTERCHANGEABILITY**

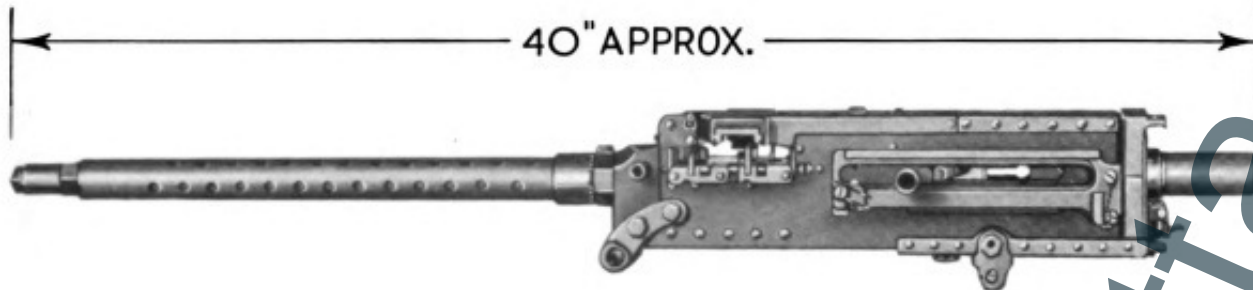
May be converted to either a flexible or flexible with fixed back plate machine gun by substituting the proper back plate and slide group assembly.

**SUPPLIED BY**

Ordnance Office, War Department.

**USED BY**

Army, Navy, and British.



**GUN, MACHINE, CALIBER .30, BROWNING, M2,  
AIRCRAFT, FLEXIBLE WITH FIXED BACK PLATE**

NAMES: Browning machine gun, caliber .30, M2, aircraft, flexible with fixed back plate  
Browning aircraft, flexible with fixed back plate machine gun, caliber .30  
Gun—machine .30 caliber—Browning aircraft—flexible with fixed back plate

DESCRIPTION: The M2 caliber .30 Browning aircraft flexible machine gun, with fixed back plate, 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 which are themselves equipped with hand grips.

This gun is a caliber .30 aircraft machine gun which contains a fixed back plate, and is equipped with a retracting slide group assembly which may be mounted to either side of the gun for charging.

**CHARACTERISTICS:**

Weight..... approximately 21½ pounds  
Dimensions..... approximately 39¾ by 5½ by 5¼ inches  
Rate of fire..... 1350 rounds per minute  
Muzzle velocity..... 2700 feet per second

RELATIONSHIP OF PARTS: The gun is attached to the airplane by any flexible .30 caliber gun mount adapter which is provided with hand grips, or is installed in a .30 caliber gun turret.

**ARMY**

A. E. REFERENCE NUMBER: 93-1440  
A. A. F. DRAWING NUMBER: H39G5331  
TYPE DESIGNATION: M2  
TECHNICAL ORDER NUMBER: 11-1-28  
PRODUCTION STATUS: Under procurement  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

TYPE DESIGNATION: M2  
F. S. S. C. NUMBER: 1-G-5612  
ORDNANCE PAMPHLET NUMBER: 714 and 398  
PROCUREMENT STATUS: Under procurement

**ORDNANCE**

MODEL: M2  
ORDNANCE DRAWING NUMBER: 51-122-1  
51-122-1A (List of Drawings)  
STANDARD NOMENCLATURE LIST NUMBER: A-28  
WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-205 and 9-1205

**BRITISH**

REFERENCE NUMBER: 107L/390

**INTERCHANGEABILITY**

May be converted to either a fixed or a flexible machine gun by substituting the proper back plate and slide group assembly.

**SUPPLIED BY**

Ordnance Office, War Department.

**USED BY**

Army, Navy, and British.



**GUN, MACHINE, CALIBER .30, BROWNING,  
M2, AIRCRAFT, FLEXIBLE**

**NAMES:** Browning aircraft flexible machine gun caliber .30  
Gun-machine .30 caliber—Browning aircraft flexible  
Gun, caliber .30, BAM-30 (M-2) flexible  
Machine Gun, caliber .30, Browning, M2, aircraft, flexible  
Flexible machine gun, caliber .30, Browning, M2, aircraft flexible

**DESCRIPTION:** The M2 caliber .30 Browning aircraft flexible machine gun is used in installations requiring the gun to be fired from a flexible or swivel mounting within a certain cone of operation.

This gun is a caliber .30 aircraft machine gun, equipped with a retracting slide group assembly which is mounted to either side of the gun for charging, and it has a flexible back plate. The flexible back plate differs from the fixed back plate by the addition of two spade grips with an external trigger.

**CHARACTERISTICS:**

Weight ..... approximately 23 pounds  
Dimensions ..... approximately 39 3/4 by 5 1/2 by 6 5/8 inches  
Rate of fire ..... 1350 rounds per minute  
Muzzle velocity ..... approximately 2700 feet per second

**RELATIONSHIP OF PARTS:** The gun is attached to the airplane by any flexible .30 caliber gun mount or gun mount adapter which is not equipped with hand grips.

**ARMY**

A. E. REFERENCE NUMBER: 93-1520  
A. A. F. DRAWING NUMBER: H39G5331  
TYPE DESIGNATION: M2  
TECHNICAL ORDER NUMBER: 11-1-28  
PRODUCTION STATUS: Under procurement  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

TYPE DESIGNATION: M2  
N. A. F. DRAWING NUMBER: 204674  
AVIATION ORDNANCE STOCK LIST NUMBER: 1-G-5611  
ORDNANCE PAMPHLET NUMBER: 714 and 398  
PROCUREMENT STATUS: Under procurement.

**ORDNANCE**

MODEL: M2  
ORDNANCE DRAWING NUMBER: 51-76-1  
51-76-1A (List of Parts)  
STANDARD NOMENCLATURE LIST NUMBER: A-28  
WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-205 and 9-1205.

**BRITISH**

REFERENCE NUMBER: 107L/392

**INTERCHANGEABILITY**

May be converted to either a fixed or flexible with fixed back plate machine gun by substituting the proper back plate and slide group assembly.

**SUPPLIED BY**

Ordnance Office, War Department.

**USED BY**

Army, Navy and British.



**GUN, MACHINE, CALIBER .50, BROWNING,  
M2, AIRCRAFT, BASIC**

**NAMES:** Browning machine gun, caliber .50, M2, aircraft, basic  
Gun, machine .50 caliber—Browning aircraft—basic  
Gun, caliber .50, BAM—50 (M2) basic

**DESCRIPTION:** The M2 caliber .50 Browning aircraft basic machine gun is the model from which all installation types are derived. It is a Browning aircraft machine gun without a slide group assembly, but with a fixed back plate, and an internal trigger bar and trigger bar pin assembly.

The basic gun may be converted to a fixed gun by the addition of an operating slide group assembly, and a solenoid to permit remote firing. It may be converted to a flexible gun by substituting a flexible back plate for the fixed back plate and by adding a retracting slide group assembly. When used in turret installations, the basic gun is equipped with a retracting slide group assembly.

**CHARACTERISTICS:**

Weight.....approximately 60¾ pounds  
Dimensions.....approximately 56½ by 5¾ by 3¾ inches  
Rate of fire.....700 to 850 rounds per minute  
Muzzle velocity.....approximately 2800 feet per second

**RELATIONSHIP OF PARTS:** Used with:

Operating slide group assembly, A. E. Reference Number 93-1100, or retracting slide group assembly, A. E. Reference Number 93-1125.

**ARMY**

A. E. REFERENCE NUMBER: 93-1560  
A. A. F. DRAWING NUMBER: H39G5332  
TYPE DESIGNATION: M2  
TECHNICAL ORDER NUMBER: 11-1-28 and 11-1-8  
PRODUCTION STATUS: Under procurement  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

TYPE DESIGNATION: M2  
BUREAU OF ORDNANCE DRAWING NUMBER: 297034  
AVIATION ORDNANCE STOCK LIST NUMBER: 1-G-5636  
ORDNANCE PAMPHLET NUMBER: 215, 548 and 716  
ORDNANCE CIRCULAR LETTER NUMBER: V-34  
PROCUREMENT STATUS: Under procurement.

**ORDNANCE**

MODEL: M2  
ORDNANCE DRAWING NUMBER: 51-82-1  
51-82-1A (List of Drawings)  
STANDARD NOMENCLATURE LIST NUMBER: A-38  
WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-225 and 9-1225

**BRITISH**

REFERENCE NUMBER: 107K/482

**INTERCHANGEABILITY**

May be mounted in either a fixed, flexible, or turret installation by substituting the proper back plate, and supplying the proper slide group assembly, solenoid, and adapter.

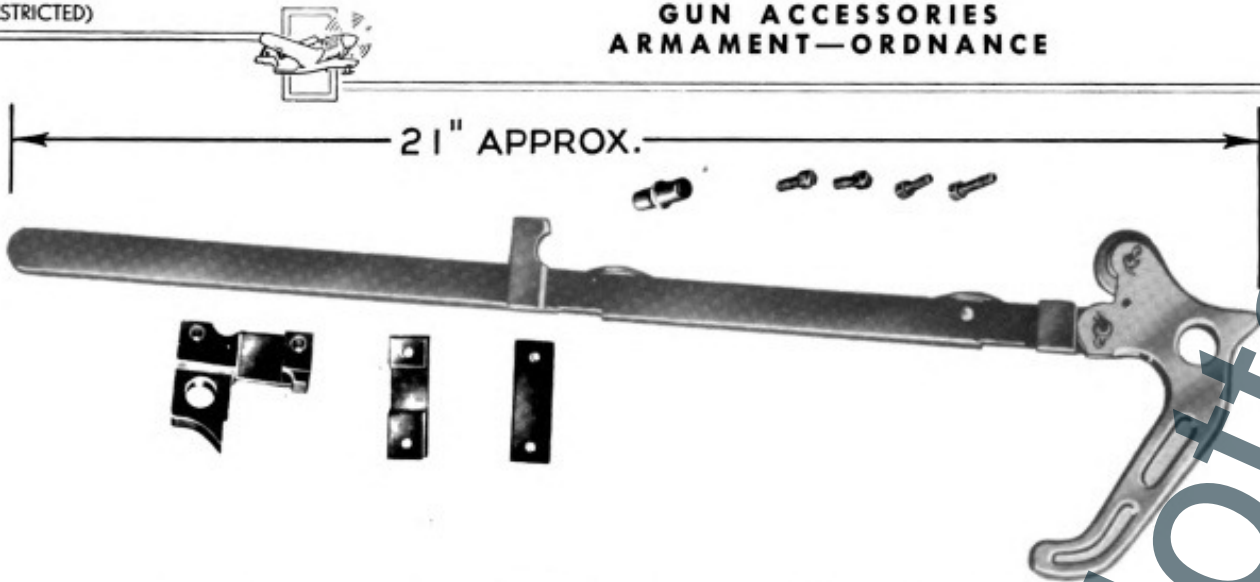
**SUPPLIED BY**

Ordnance Office, War Department.

**USED BY**

Army, Navy, and British.





**SLIDE, OPERATING GROUP ASSEMBLY**  
**ORDNANCE DRAWING D28200**

NAMES: Group assembly—operating slide  
 Operating slide group assembly

Slide, operating, BAM .50 (M-2), group  
 assembly

DESCRIPTION: The operating slide group assembly is used for manually charging fixed guns by retracting the breech mechanism. It is also used for unloading the gun, and for correction of stoppages in firing. If the gun is mounted in the wing, or in the fuselage, out of reach of the gunner, a remote control cable may be attached so that the slide can be operated from the cockpit.

This assembly is a lever and slide arrangement equipped with a metal handle and may be mounted on either side of the gun. The slide group assembly engages the bolt stud and retracts it to the rear, to perform initial charging. Upon firing, the bolt stud and breech mechanism operate independently of the slide group assembly.

CHARACTERISTICS:

Dimensions..... approximately 21½ by 5 by 1¾ inches  
 Weight..... approximately 1½ pounds

RELATIONSHIP OF PARTS: The operating slide group assembly is used on M2 .50 caliber Browning fixed machine guns, and is secured to the side plate of the gun by two guide bearings.

**ARMY**

A. E. REFERENCE NUMBER: 93-1100  
 TECHNICAL ORDER NUMBER: 11-1-8  
 PRODUCTION STATUS: Under procurement  
 SHIPPING DATA: Shipped complete with bolt stud and mounting attachments.

**NAVY**

BUREAU OF ORDNANCE DRAWING NUMBER: 169790  
 AVIATION ORDNANCE STOCK LIST NUMBER: 1-S-9423  
 ORDNANCE PAMPHLET NUMBER: 716 and 865  
 PROCUREMENT STATUS: Under procurement.

**ORDNANCE**

ORDNANCE DRAWING NUMBER: D28200  
 STANDARD NOMENCLATURE LIST NUMBER: A-38  
 WAR DEPT. TECHNICAL MANUAL NUMBER: 9-225 and 1-409

**BRITISH**

REFERENCE NUMBER: 107K/119

**SUPPLIED BY**

Ordnance office, War Department.

**USED BY**

Army, Navy, and British.



TOOL ROLLS  
ARMAMENT—ORDNANCE



**ROLL, TOOL ARMORER'S  
W/CONTENTS, COMPLETE**

ORDNANCE SNL NUMBER A-28

NAMES: Armorer's tool roll complete w/contents  
Armorer's tool kit

Tool roll  
.30 caliber tool roll

DESCRIPTION: The caliber .30 armorer's tool roll consists of a canvas container provided with pockets to accommodate the tools making up this complete kit. These tools are for use by the airplane armorer in cleaning, lubricating and maintaining the caliber .30 aircraft machine guns. The tools are rolled into a compact carrying unit when not in use. The following tools are included with this roll:

QUANTITY	NAME	ORDNANCE DRAWING OR PIECE MARK NO.
2	Brush, chamber cleaning, M6	B108828
10	Brush, cleaning, cal. .30, M2	C4035
1	Case, cleaning rod, M1	C6573
1	Drift, brass, stght., 3/8 rd. x 4	TCGX2D
1	Extractor, ruptured cartridge, Mk. IV	C3854
1	Gage, headspace and timing, cal. .30, BMG	A196229
1	Hammer, brass, dble-bell-face., 3 oz.	TAFX2A
1	Oiler, oval, 3 oz., w/cap and chain	C59737
1	Pliers, side-cutting, paral-jaw, 6 in.	THBX1A
1	Punch, center, 4 in.	TCDX1A
1	Punch, drive pin, .03 in. pt.	TCFX2A
1	Punch, drive pin, .05 in. pt.	TCFX2C
1	Punch, drive pin, .08 in. x 3/4 pt.	TCFX2F
1	Reflector, barrel, cal. .30	B147001
1	Rod, cleaning, jointed, cal. .30, M1	D8237
1	Screw driver, comm., normal duty, 3 in. blade	TGAX1A
1	Stone, sharp., unmounted, artificial, fine, tri., 4 x 1/16	B147160
1	Tool, carbon removing, cal. .30, M4	C64302
1	Tool, combination, cal. .30, M2	B131314
1	*Tool, release	C3856

\*Not carried with original issue. Must be ordered separately.

(Continued on page 321)



# ROLL, TOOL ARMORER'S W/CONTENTS, COMPLETE

(Continued from page 320)

**CHARACTERISTICS:**

Weight.....	approximately 10 pounds
Dimensions.....	approximately 20 by 15 by 3 inches (unrolled)
	approximately 15 by 6 by 6 inches (rolled)

**RELATIONSHIP OF PARTS:** Used with:

Type M2 caliber .30 Browning aircraft fixed machine gun, A. E. Reference Number 93-1420.  
 Type M2 caliber .30 Browning aircraft flexible with fixed back plate machine gun, A. E. Reference Number 93-1440.  
 Type M2 caliber .30 Browning aircraft flexible machine gun, A. E. Reference Number 93-1520.

**ARMY**

A. E. REFERENCE NUMBER: 93-6575  
 PRODUCTION STATUS: Under procurement.  
 SHIPPING DATA: Shipped as a complete unit.

**NAVY**

AVIATION ORDNANCE STOCK LIST NUMBER: 1-R-5025  
 ORDNANCE PAMPHLET NUMBER: 714 and 865A  
 PROCUREMENT STATUS: Under procurement.

**ORDNANCE**

ORDNANCE DRAWING NUMBER: D1888 (empty roll only)  
 STANDARD NOMENCLATURE LIST NUMBER: A-28  
 WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-205 and 9-1205

**BRITISH**

REFERENCE NUMBER: 108D 89

**INTERCHANGEABILITY**

The tools supplied in this assembly are interchangeable with tools formerly issued for maintenance of the caliber .30 machine guns in the combination .30 and .50 caliber armorer's tool roll.

**SUPPLIED BY**

Ordnance Office, War Department

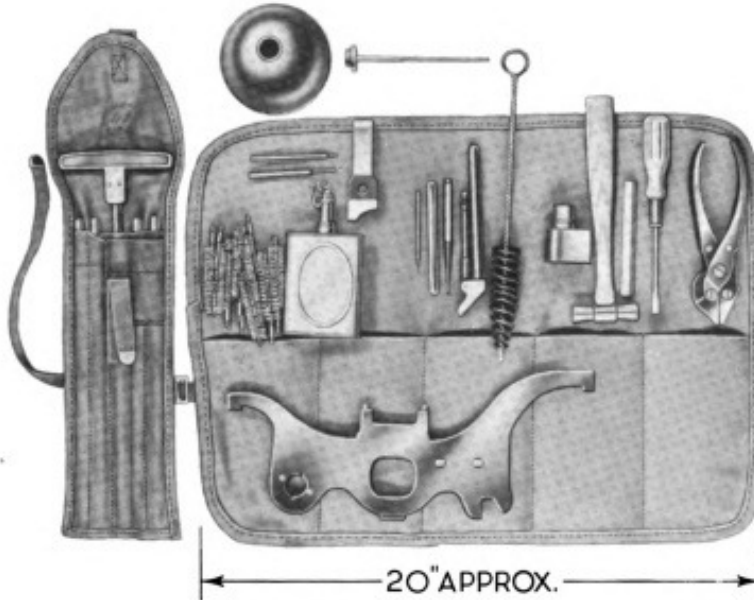
**USED BY**

Army, Navy, British

DEMO dimensions ridotta



TOOL ROLLS  
ARMAMENT—ORDNANCE



**ROLL, TOOL, ARMORER'S  
W/CONTENTS, COMPLETE**

ORDNANCE SNL NUMBER A-38

NAMES: Armorer's tool roll complete w/contents  
Armorer's tool kit

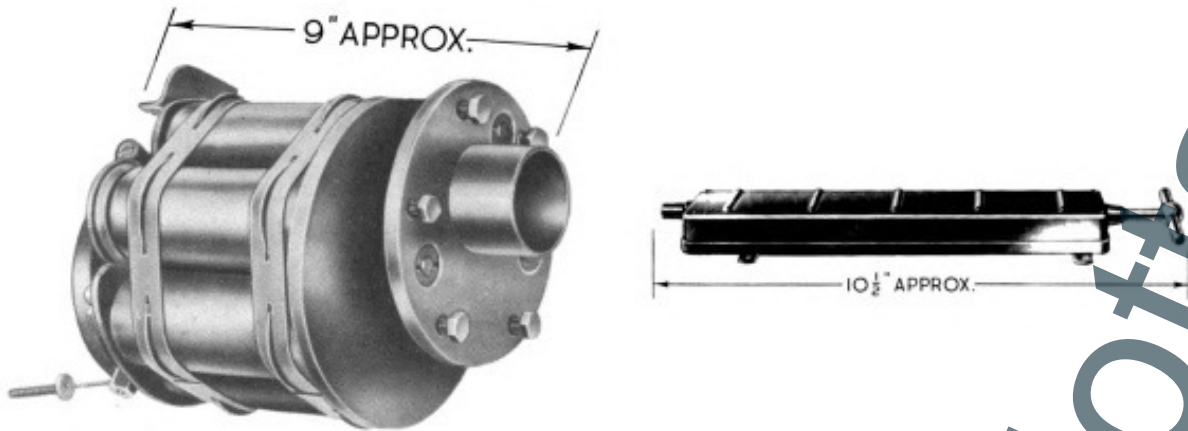
Tool roll  
.50 caliber tool roll

DESCRIPTION: The caliber .50 armorer's tool roll consists of a canvas container provided with pockets to accommodate the tools making up this complete kit. These tools are for use by the airplane armorer in cleaning, lubricating, and maintaining the caliber .50 aircraft machine guns. The tools are rolled into a compact carrying unit when not in use. The following tools are included with this roll:

QUANTITY	NAME	ORDNANCE DRAWING OR PIECE MARK NO.
2	Brush, chamber cleaning, M6	B108828
10	Brush, cleaning, cal. .50, M4	C4037
1	Case, cleaning rod, cal. .50, M15	C64274
1	Drift, brass, stght., 3/8 rd. x 4	TCGX2D
1	Gage, headspace and timing, cal. .50, BMG	A196228
1	Hammer, brass, dble-bell-face., 3 oz.	TAFX2A
1	*Oiler, filling, oil buffer	B8514
1	Oiler, oval, 3 oz., w/cap and chain	C59737
1	Pliers, side-cutting, paral-jaw., 6 in.	THBX1A
1	Punch, center, 4 in.	TCDX1A
1	Punch, drive pin, .03 in. pt.	TCFX2A
1	Punch, drive pin, .05 in. pt.	TCFX2C
1	Punch, drive pin, .08 x 3/4 pt.	TCFX2F
1	Reflector, barrel, cal. .50	C64255
1	Rod, cleaning, jointed, cal. .50, M7	D35441
1	Screw driver, comm., normal duty, 3 in. blade	TGAX1A
1	Stone, sharp., unmounted, artificial, fine, tri., 4 x 1/16	B147160
1	*Tool, release	C3856
1	*Wrench, combination, cal. .50, M2	D28242

\*Not included in original issue. Must be ordered separately.

(Continued on page 323)



**DISCHARGER, PYROTECHNIC, AN-M5**  
 FORMER ARMY TYPE M5    FORMER NAVY TYPE M5

NAMES: Molin type discharger    Pyrotechnic projector  
           Molin type projector    Pyrotechnic discharger  
           Pyrotechnic discharger AN-M5 and remote controller M2

DESCRIPTION: The AN-M5 pyrotechnic discharger is a double-action, multi-barrel discharger used to project pyrotechnic signals from an airplane in flight. This discharger is fastened to the fuselage, and is operated by means of a cable attached to the remote controller, Ordnance model M2. It is loaded with six signal cartridges, and movement of the remote controller performs the functions of rotating the barrel and cocking and firing the discharger. The signals used are cartridge types AN-M37 to AN-M45 inclusive, or British 1½ inch cartridges.

CHARACTERISTICS:

Dimensions . . . . .	approximately 9 by 7 by 6½ inches
Weight . . . . .	approximately 9½ pounds
Finish . . . . .	glossy black

RELATIONSHIP OF PARTS:  
 The type AN-M5 pyrotechnic discharger is installed in the airplane fuselage, and is operated by means of a cable connected to the type M2 remote controller.

**ARMY**

A. E. REFERENCE NUMBER: 93-800  
 A. A. F. DRAWING NUMBER: H42B10947  
 TYPE DESIGNATION: AN-M5  
 PRODUCTION STATUS: Not under procurement for initial installation. Superseded by AN-M8 pyrotechnic pistol.  
 SHIPPING DATA: The type AN-M5 pyrotechnic discharger, including control cable and the type M2 remote controller, comprise the complete shipping unit.

**NAVY**

TYPE DESIGNATION: AN-M5  
 BUREAU OF ORDNANCE DRAWING NUMBER: 333089  
 AVIATION ORDNANCE STOCK LIST NUMBER: 2-D-180  
 ORDNANCE CIRCULAR LETTER NUMBER: V 12-42  
 ORDNANCE PAMPHLET NUMBER: 562 and 865  
 PROCUREMENT STATUS: Not under procurement for initial installation.

**ORDNANCE**

MODEL: AN-M5  
 ORDNANCE DRAWING NUMBER: 42-39  
 STANDARD NOMENCLATURE LIST NUMBER: B-34  
 WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-290

**SUPPLIED BY**

Ordnance Office, War Department

**USED BY**

Army and Navy



**PISTOL, PYROTECHNIC, M2**

**NAMES:** Pyrotechnic pistol  
Pyrotechnic signal pistol  
Signal pistol

**DESCRIPTION:** The type M2 pyrotechnic pistol is a double-action single-loading pistol, used to project pyrotechnic signals from an airplane in flight. It is hand-fired from a window or other opening in the fuselage. The signals are rimless barrel types M14, M15, M16, and M28 to M36 inclusive, which permit muzzle-loading. It may also be used to fire M9 and M9A1 parachute flares and M10 and M11 parachute signals.

**CHARACTERISTICS:**

Dimensions.....approximately  $7\frac{7}{16}$  by  $5\frac{1}{16}$  by  $1\frac{3}{16}$  inches  
Weight.....approximately 3- $\frac{1}{10}$  pounds

**RELATIONSHIP OF PARTS:**

For stowage in the airplane, the type M2 pyrotechnic pistol is usually inserted in the type A-1 pyrotechnic pistol holder, A. E. Reference Number 52-2825, which is snap-fastened to the airplane structure.



**ARMY**

A. E. REFERENCE NUMBER: 93-6000  
A. A. F. DRAWING NUMBER: H41D10594  
TYPE DESIGNATION: M2  
TECHNICAL ORDER NUMBER: 11-15-9  
PRODUCTION STATUS: Under procurement.  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

TYPE DESIGNATION: M2  
BUREAU OF ORDNANCE DRAWING NUMBER: 281829  
AVIATION ORDNANCE STOCK LIST NUMBER: 2-P-3495  
ORDNANCE CIRCULAR LETTER NUMBER: V 11-42  
ORDNANCE PAMPHLET NUMBER: 865  
AVIATION ORDNANCE PAMPHLET NUMBER: 981-1  
TECHNICAL BULLETIN NUMBER: 290-1  
PROCUREMENT STATUS: Not under procurement for initial installation. Superseded by type AN-M8 pyrotechnic pistol.

**ORDNANCE**

MODEL: M2  
ORDNANCE DRAWING NUMBER: D10305  
STANDARD NOMENCLATURE LIST NUMBER: B-18  
WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-290

**SUPPLIED BY**

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**USED BY**

Army and Navy

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**PYROTECHNIC PROJECTORS  
ARMAMENT—ORDNANCE**



**PISTOL, SIGNAL  
BRITISH NUMBER 4, MARK 1**

**NAMES:** Signal pistol  
Pyrotechnic pistol

British signal pistol

**DESCRIPTION:** The Number 4, Mark 1 signal pistol is a British pistol used to project pyrotechnic signals from an aircraft while in flight. It is a double-action, signal-loading pistol, fired from a mounting sleeve fastened to the airplane fuselage. The signals used are British 1½ inch cartridges, A. E. Reference Numbers 93-400 to 93-650 inclusive, or Army Ordnance signals, AN-M37 to AN-M45, inclusive. This pistol differs from the Army type AN-M8 in the length of the barrel and general construction; however, both pistols fire the same signals, and are functionally interchangeable when installed in their own mounting.

**CHARACTERISTICS:**

Weight..... approximately 4 pounds  
Dimensions..... approximately 6 by 6 by 2 inches

**RELATIONSHIP OF PARTS:**

The Number 4, Mark 1 signal pistol is inserted in the Number 2, Mark 1 mounting sleeve for firing. When not in use, the insert hole in the mounting sleeve is covered with the Number 2, Mark 1 aperture disc.

**ARMY**

A. E. REFERENCE NUMBER: 93-6500  
TYPE DESIGNATION: Number 4, Mark 1  
PRODUCTION STATUS: Under procurement for installation on airplanes procured for British use.  
SHIPPING DATA: Shipped as a complete unit.

**NAVY**

There is no Navy equivalent for this item.

**BRITISH**

REFERENCE NUMBER: 7B/810  
TYPE DESIGNATION: Number 4, Mark 1

**DISC, APERTURE  
BRITISH NUMBER 2, MARK 1**

**NAMES:** Aperture disc  
Cover

Pistol mount cover

*(Continued on page 329)*



**DISC, APERTURE**  
**BRITISH NUMBER 2, MARK 1**

*(Continued from page 328)*

**DESCRIPTION:** The Number 2, Mark 1 disc aperture is a small circular cover used to seal the opening in the Number 2, Mark 1 mounting sleeve when the signal pistol is removed. The purpose of this disc is to keep out dust and rain, and to seal the fuselage of the airplane against the escape of heat.

**CHARACTERISTICS:**

Weight ..... approximately 1/8 pound  
Dimensions ..... approximately 2 1/2 by 2 1/2 by 1 inches

**RELATIONSHIP OF PARTS:** Used with:

The Number 2, Mark 1 mounting sleeve ..... A. E. Reference Number 93-6502

**ARMY**

A. E. REFERENCE NUMBER: 93-6501  
TYPE DESIGNATION: Number 2, Mark 1  
PRODUCTION STATUS: Under procurement for installation on airplanes procured for British use.  
SHIPPING DATA: Shipped as a complete unit. Usually included in the same carton with the Number 4, Mark 1 signal pistol.

**NAVY**

There is no Navy equivalent for this item.

**BRITISH**

REFERENCE NUMBER: 7B/812  
TYPE DESIGNATION: Number 2, Mark 1

**SLEEVE, MOUNTING**  
**BRITISH NUMBER 2, MARK 1**

**NAMES:** Mounting sleeve ..... Pistol mount  
Mount

**DESCRIPTION:** The Number 2, Mark 1 mounting sleeve is a cylindrical mount with a slotted insert hole and a four hole mounting flange. This sleeve is installed in the airplane fuselage to provide a mount for holding the Number 4, Mark 1 signal pistol when the latter is being fired.

**CHARACTERISTICS:**

Weight ..... approximately 1/4 pound  
Dimensions ..... approximately 3 3/4 by 3 3/4 by 2 inches

**RELATIONSHIP OF PARTS:** Used with:

The Number 2, Mark 1 disc aperture, A. E. Reference Number 93-6501 and the Number 4, Mark 1 signal pistol, A. E. Reference Number 93-6500.

**ARMY**

A. E. REFERENCE NUMBER: 93-6502  
TYPE DESIGNATION: Number 2, Mark 1  
PRODUCTION STATUS: Under procurement for installation on airplanes procured for British use.  
SHIPPING DATA: Shipped as a complete unit. Usually included in the same carton with the Number 4, Mark 1 signal pistol.

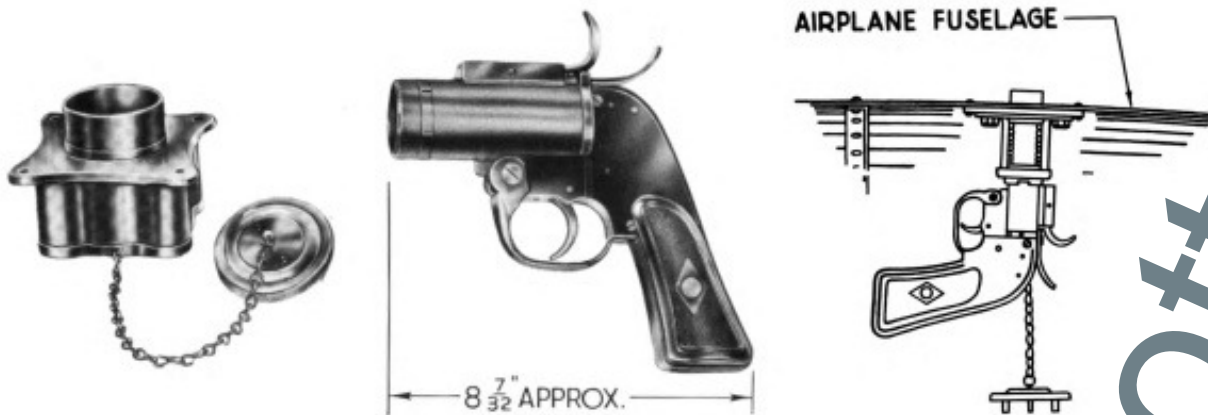
**NAVY**

There is no Navy equivalent for this item.

**BRITISH**

REFERENCE NUMBER: 7B/811  
TYPE DESIGNATION: Number 2, Mark 1





### PISTOL, PYROTECHNIC, AN-M8, W/MOUNT

FORMER ARMY TYPE M8    FORMER NAVY TYPE M8

NAMES: Pyrotechnic pistol  
Pyrotechnic signal pistol

Signal pistol  
Flare pistol

DESCRIPTION: The type AN-M8 pyrotechnic pistol is a double-action, single-loading pistol, used to project pyrotechnic signals from an airplane in flight. This pistol has a seamless tube barrel hinged to the frame of the handle, which is released by a breech lock to permit breech-loading. The barrel is secured to the type M1 mount by means of a mount latch. The standard signals used are cartridge type, AN-M37 to AN-M45 inclusive, 1½ inch British cartridges, or parachute flares type M9A1. However, provisions is made to permit firing of old style signals M10, M11, M14, M15, M16, and M28 to M36 inclusive. This pistol is normally fired from the type M1 mount, which is fastened to the airplane structure, and acts as a recoil absorbing adapter; however, it may be hand-fired without a mount.

CHARACTERISTICS:

Dimensions.....	approximately 10¼ by 8¾ by 3¾ inches
Weight.....	approximately 3-2/5 pounds

RELATIONSHIP OF PARTS:

The type AN-M8 pyrotechnic pistol is inserted in the type M1 mount for firing.

**ARMY**

A. E. REFERENCE NUMBER: 93-6100  
 A. A. F. DRAWING NUMBER: H42B10666  
 TYPE DESIGNATION: AN-M8  
 TECHNICAL ORDER NUMBER: 11-15-1  
 PRODUCTION STATUS: Under procurement.  
 SHIPPING DATA: Complete shipping unit is composed of type AN-M8 pyrotechnic pistol and type M1 mount with cover.

**NAVY**

TYPE DESIGNATION: AN-M8  
 BUREAU OF ORDNANCE DRAWING NUMBER: 247642  
 AVIATION ORDNANCE STOCK LIST NUMBER: 2-P-3499  
 ORDNANCE CIRCULAR LETTER NUMBER: V 35-42  
 ORDNANCE PAMPHLET NUMBER: 865  
 PROCUREMENT STATUS: Under procurement.

**ORDNANCE**

MODEL: AN-M8  
 ORDNANCE DRAWING NUMBER: 42-44  
 STANDARD NOMENCLATURE LIST NUMBER: B-33  
 WAR DEPARTMENT TECHNICAL MANUAL NUMBER: 9-290

**SUPPLIED BY**

Ordnance Office, War Department

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