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MISSILE LAUNCHERS AND RELATED EQUIPMENT CATALOG



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1 JUNE 1953

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OP 1855

**MISSILE LAUNCHERS
AND RELATED EQUIPMENT
CATALOG**



~~CONFIDENTIAL SECURITY INFORMATION~~
A BUREAU OF ORDNANCE PUBLICATION

PREFACE

1 June 1953

ORDNANCE PAMPHLET 1855

MISSILE LAUNCHER AND RELATED EQUIPMENT CATALOG

1. Ordnance Pamphlet 1855 summarizes basic information on types of missile launchers, rocket launchers, and projectors, and equipment related to these classes of weapons.
2. The material presented in this publication brings under one cover readily available reference information on many weapons. It can be used for comparisons of weight, size, ammunition used, limitations, and general effectiveness.
3. This publication supersedes Ordnance Pamphlet 1304 (Preliminary) dated 14 August 1945, and Ordnance Pamphlet 1304, Change 1, (Preliminary) dated 28 June 1946, which should be destroyed.
4. This publication is ~~CONFIDENTIAL~~ and shall be safeguarded in accordance with the security provisions of U.S. Navy Regulations. It is forbidden to make extracts from or to copy this classified document without specific approval of the Chief of Naval Operations or originator, as applicable, except as provided for in article 9-10 of the United States Navy Security Manual for Classified Matter.

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INTRODUCTION

This publication describes United States Navy missile launchers and related equipment. The purpose of this publication is to provide a single source of general information for all personnel concerned with such missile launchers and related equipment. Some of the items presented are obsolete, and others were never manufactured, but they are all presented to give a complete picture of development trends.

In its most general sense, a missile launcher is a weapon capable of launching a missile or projectile. In this publication, the term missile launcher includes Missile Launchers, Rocket Launchers, and Projectors. These three classes of weapons are treated in Parts 1, 2, and 3, respectively. Part 4 of this publication is devoted to equipment related to these weapons. In the case of Parts 2, 3, and 4, the material is further subdivided. Part 2 is divided into Aircraft Rocket Launchers and Surface Rocket Launchers, Part 3 is divided into Depth Charge Projectors and Projectors, and Part 4 is divided into Control Devices and Miscellaneous Equipment.

A brief description of the distinguishing characteristics and development of weapons or equipments treated precedes each section. The order in which the items are presented in Parts 1, 3, and 4 is determined by the numerical order of their identities; in Part 2, the weapons are presented in order of increasing rocket diameter. Some of the weapons in Part 1 have experimental designations; these weapons are listed first, in numerical order.

For each weapon treated in this publication, the information is presented in the form of an illustration, description, and data. The illustration is a simplified engineering drawing that shows the major dimensions and arcs of movement. The description of a weapon includes its use, construction features, and distinguishing characteristics. The data section lists the major physical statistics of the weapon, and also includes a list of publication references that give more detailed information about the weapon. Thus, for any weapon, general information can be obtained from the illustration and the description, and more detailed information is given in the data section; for additional information, the publication references listed in the data section are recommended.

The related equipment in Part 4 is treated in a manner similar to that of Parts 1, 2, and 3, but minor modifications have been made in order to present the information in its most practical form. For example, in the case of a firing panel, a photograph and a simplified wiring diagram of the panel are shown instead of the engineering drawing presented for each weapon.

A list of publication references is given on the following pages. These references are not listed elsewhere in this publication, but contain information related to the subject of missile launchers. At the end of the publication, an appendix of additional items is presented. These items are not treated within the body of the publication because of a lack of information.

PUBLICATION REFERENCES

ORDNANCE PAMPHLETS (OPs)

OP No.	Title	OP No.	Title
5 (Vol.1)	Ammunition Ashore	1354,5,7,8	Sighting Data for Fixed-Gun Strafing,
35	Depth Charge Release Gear	1597,8,9	Rocket Firing and Bombing, Aircraft
721	Depth Charge Release Gear Mk 3; Description and Operation	1800,2	
878	General Data on Navy, AN-Standard, Army and British Bombs	1415	Rocket Assemblies
904	Depth Charge Release Gear and As- sociated Equipment; Description and Instructions for Operation and Maintenance	1470	VT Rocket Fuzes (for Aircraft Rockets) (Preliminary)
998	Aircraft Pyrotechnics and Acces- sories	1480	VT Fuzes for Projectiles and Spin Stabilized Rockets
1004	Index of Ballistic Information for Projectiles, Rockets and Bombs	1498	Range Table for 5" Spin Stabilized Rockets Fired from Rocket Launchers Mk 50 and Mk 102
1017	Fuzes for Rockets and Projector Charges	1576	3"5 Rocket (Aircraft Flare) Mk 6 Mod 0
1164	Ballistic Testing of Rocket Pro- pellants	1644	U. S. Explosive Ordnance
1177	Surface Pyrotechnics and Projectors	1742	Circuit Continuity Tester 680A for Rockets
1187	2"25 Subcaliber Aircraft Rockets; Description and Instructions for Use	1761	5" Spin Stabilized Air-to-Air Rocket (GASR)
1219	Ammunition Code Catalog	1793	2"75 Rocket Ammunition (Air-to-Air Folding Fin); Description and In- structions for Use (Preliminary)
1227	11"75 Rocket Ammunition; Descrip- tion and Instructions for Use	1794	5"0 Rocket Ammunition (High Per- formance Air-to-Ground), Descrip- tion and Instructions for Use (Preliminary)
1235	Manual for the Prediction of Effective Rocket Temperatures in Aircraft Rockets	1829	Trajectories of Aircraft Rockets (Surface Targets)
1239	5"0 Rocket (5"0 Motor), Fin Stabi- lized (Preliminary)	1843	5"0 Aircraft Rocket Flare
1331	3"5 Rocket Flare	1850	Missile Launcher Type X-6

ORDNANCE DATA
(NAVORD ODs)

OD No.	Title	OD No.	Title
4783	Report of Test and Inspection; Rocket Launcher Assembly Mk 102 Mod 0, Equipped with Power Drives Mk 4 Mod 3, Manufactured by General Electric Co.; and Rocket Hoist Mk 1 Mod 0, Manufactured by Vickers Inc	7248	Revised <i>Preliminary</i> Range Table for 5'0 HC Spin Stabilized Rocket Mk 10, Fired from Rocket Launcher Assemblies Mk 50 and Mk 102 (5000 yd); Rocket Head Mk 10 Mod 1; Rocket Motor Mk 4 Mod 1; Propellant Grain Mk 22 Mod 0; Nose Fuze Mk 30 Mod 3; Auxiliary Detonating Fuze Mk 44 Mod 1
4963	Beacon Launching System Mk 3 Mod 0; Instructions for Installation and Shipboard Tests	7249	Revised <i>Preliminary</i> Range Table for 5'0 HV Spin Stabilized Rocket Mk 24, Fired from Rocket Launcher Assemblies Mk 50 and Mk 102 (10,000 yd); Rocket Head Mk 8 Mod 0; Rocket Motor Mk 3 Mod 0; Propellant Grain Mk 21 Mod 0; Base Fuze Mk 31
5318	Preparation of Impulse Cartridges for Single Depth Charge Projector Mk 6	7339	Advisory Methods for Manufacture of Fuze Mk 175 Mod 0
6670	Loading Instructions for 2'25 Rocket Motor	7344	Loading Instructions for 2'75 Rocket Motor Mk 1 Mod 0
6671	Loading Instructions for 3'25 Rocket Motor	7346	Loading Instructions for 5'0 Rocket Motor (Spin stabilized) (GASR)
6672	Loading Instructions for 5'0 Rocket Motor, Fin Stabilized Mk 2 all Mods and Mk 10 all Mods	7390	Installation Instructions for Missile Launcher Type X-6
6673	Loading Instructions for 5'0 Rocket Motor, Spin Stabilized	7607	Loading Instructions for 2'75 Rocket Motor Mk 1 Mod 1
6674	Loading Instructions for 5'25 Rocket Motors	7643	Instructions for Loading and Assembling 6'5 Rocket Head Mk 2 Mod 1
6675	Loading Instructions for 11'75 Rocket Motors		
7230	USN Ammunition and Explosives (Instructional Pamphlet) (<i>Preliminary</i>)		
7247	Preliminary Range Table for 5' High Capacity Spin Stabilized Rocket Mk 13 (2500 yd), Launchers Mk 50 and 102		

ORDNANCE CIRCULAR LETTERS
(NAVORD OCLs)

OCL No.	Title	OCL No.	Title
AV3-40	5'0 Aircraft Rocket Mk 1 Mod 5 (Rocket Fuze (VT) Mk 175 Mod 0)	A34-44	Revised Method of Distribution of Fuze Insertion and Removal Wrenches for Rocket and Projector Charge Fuzes
A8-44	Ammunition for Rocket Launchers Mk 20 and Mk 22, Maintenance of	A68-44	4'5 Barrage Rocket Ammunition when Fired from 4'5 Rocket Launcher Mk 7, Misfires of
AV17-44	Stowage and Shipment of Fuzes, Aircraft Bomb, and Rocket, Lot Number Segregation of		

ORDNANCE CIRCULAR LETTERS (Cont)
(NAVORD OCLs)

OCL No.	Title	OCL No.	Title
AV8-45	2"25 Rocket Firing Indicator	A3-50	Disposal of Ammunition and Explosives by Destruction at Naval Shore Establishments
AV18-45	Aircraft Rockets, Stowage Aboard Aircraft Carriers		
AV20-45	Aircraft Rocket Motors, Disposal of Misfires	AV4-50	Rocket Heads for 5"0 HVAR, Information Concerning
A34-45	Point Detonating Fuze Mk 30 Mod 4, Restricted for use in Rockets	G32-44	7"2 Rocket Launchers Mk 20 and 22, Firing Panels Mk 2 and 3 and Mods
A42-45	Bazooka Ammunition, Shipboard Stowage of	G53-44	Projectors, Projector Ammunition and Surface Rocket Launchers, Revision of Nomenclature
AV1-46	Ordnance Reports of Defective Aircraft Ammunition, Digest of	M1-44	Depth Charge Pistol Mk 6 Mod 1, Release of Entrapped Air After Test
A4-46	Dumping of Explosives, Ammunition and Chemicals, Instructions for	M16-44	Loading Trays for Depth Charge Release Tracks and Extensions
A7-46	VT Fuze Routine Test Firing, Instructions for	M22-44	Impulse Cartridges for Depth Charge Projected from Single Depth Charge Projector Mk 6
A1-47	Obsolete Pyrotechnic and Chemical Ammunition and Accessories, Disposition of	M23-44	Depth Charge Pistol Mk 7 Mod 1, Shearing of the Depth Setting Dial Locking Pin
AV2-47	Rocket Firer (Magnet) Mk 3 Mods 0 and 1, Instructions for Installation and Use	M30-44	Depth Charge Arbor Mk 7 Mod 3, Information on and Instructions for Use of
A10-47	Turn in of Rocket Ammunition for Rework, Instructions Covering		
AV5-48	Torpex Loaded Aircraft Depth Bombs, 7"2 Projector Charges and 7"2 Rockets, Replacement of	M32-44	Depth Charge Pistols Mk 6 and 6 Mods 1 and 2, Premature Firing
A11-48	Remnant Lots of Ammunition, Including Bombs, Rockets, Fuzes and Pyrotechnics	M7-45	Depth Charge Boosters Mk 6 Mods 4 and 2, Replacement of Boosters Mk 6 and Mk 6 Mod 1
A12-48	Obsolete or Surplus Rocket Ammunition, Disposal of	M8-45	Depth Charge Cases, Inspection, Classification and Overhaul of
A4-49	Weapon "A"; Official Nomenclature	M2-46	Depth Charges, Peacetime Allowances of
AV6-49	Aircraft Rocket Temperature Limitations, Information Concerning	M2-47	Depth Charge Mk 14 Mod 0, Service Issue of
A10-49	Training Ammunition Allowances	M1-50	Depth Charges Mk 9 Type, Maintenance of
AV1-50	Bomb and Rocket Ammunition, Maintenance and Preservation Instructions for	M2-50	Underwater Ordnance, Security Classification of

ORDNANCE MATERIAL LETTERS
(NAVORD OMLs)

OML No.	Title	OML No.	Title
AV1-50	5" Rocket Motors (HVAR), Positioning of Suspension Lug Bands	G1-51	Projector Mk 15 Mod 0, Installation of Auxiliary Elevation Stop
G3-50	Rocket Launchers Mk 102; Accomplishment of Ordalt 1991	ME1-51	Mine and Depth Charge Batteries

ORDNANCE TECHNICAL INSTRUCTIONS
(NAVORD OTIs)

OTI No.	Title	OTI No.	Title
A3-44	4''5 Rocket (WP Smoke) (Assembly No. 4 5SMO13)	M2-44	Depth Charge Pistol and Booster Extender Mechanism Mk 6 and Mk 6 Mod 1, Maintenance Procedure for
M12-43	Depth Charge Pistol and Booster Extender Mechanism Mk 6 and Mk 6 Mod 1	M10-44	Depth Charge Pistol and Booster Extender Mechanism Mk 6 Mod 2, Acceptance Test and Inspection

DEPT. OF THE ARMY PUBLICATIONS
(Stocked by the Bureau of Ordnance)

Pub. No.	Title	Pub. No.	Title
SNL S-9 (ORD 11)	Rockets, all Types and Components	TB 9-390-1	Projector, Target Rocket, M1; Inspections and Precautions Prior to Firing
SNL S-10 (ORD 11)	Obsolete and Nonstandard Bombs, Grenades, Pyrotechnics and Rockets	TM 9-390	Target Rocket Projector M1

NAVORD CHARTS

Chart No.	Title	Chart No.	Title
A2-44	Nose Fuze Mks 131 and 136	A11-44	3''5 Rocket Ammunition
A4-44	Nose Fuze Mk 137	A12-44	4''5 Rocket Ammunition
A5-44	Nose Fuze Mk 139	A13-44	7''2 Rocket Ammunition
A6-44	Nose Fuze Mk 145	A19-44	5''0 Rocket Ammunition (3''25 Motor)
A8-44	Nose Fuze Mk 147, Mod 1	A20-44	7''2 Projector Charge
A10-44	Nose Fuze Mk 149		

ORDNANCE HANDLING INSTRUCTIONS
(NAVORD OHIs)

OHI No.	Title	OHI No.	Title
AV20-43	Assembling Instructions for Signal, Drift, Night, Rocket, Mk 15 and Mk 15 Mod 1 and Mk 16 and Mk 16 Mod 1	AV5-45	11''75 Aircraft Rocket Mk 3 Mod 0
AV1-45	2''25 Aircraft Rockets (Sub-caliber)	AV1-49	11''75 Rocket Motor Mk 2 Mod 0, Tightening of Suspension Bands
A2-45	Instructions for Installation and Use of the 2''25 Rocket Firing Indicator	AV2-49	3''5 Aircraft Rocket Mk 1 Mod 0, Mk 8 Mod 0, and 5''0 Aircraft Rocket Mk 1 Mods 0,2,4; Mk 2 Mod 0; and Mk 3 Mod 0
AV2-45	5''0 Aircraft Rockets Mk 4 Mod 0	AV3-49	5''0 Aircraft Rocket Mk 1 Mod 5
A5-45	5''0 Rocket (Surface High Capacity, SS) Mk 10 Mod 1 with VT Fuze	AV1-50	1''25, 2''25, 3''5, and 5''0 Aircraft Rockets, Unloading of

PART 1

MISSILE LAUNCHERS

A missile launcher is a weapon for launching a projectile that is controlled in flight. In distinction, a rocket launcher fires a projectile that is deviated from the direction in which it is launched only by such natural forces as wind and gravity. Another distinction is that the projectile launched from a missile launcher may be either powered or unpowered; all projectiles launched from rocket launchers are true rockets in that they contain a propellant unit.

Projectiles released from missile launchers are guided by either of two guidance systems. Some are guided by preset controls; others are guided in flight by signals transmitted or reflected from a remote source. These signals may originate in any one of three sources. They may be signals transmitted from a remote tracking unit; they may be target reflections of signals originating from the missile or from a remote station; or they may originate in the target in the form of radiation. Missiles that receive information directly from the target, rather than from remote station signals, are known as "homing" missiles. Missiles that are guided by information received in the form of a beam are known as "beam-riding" missiles.

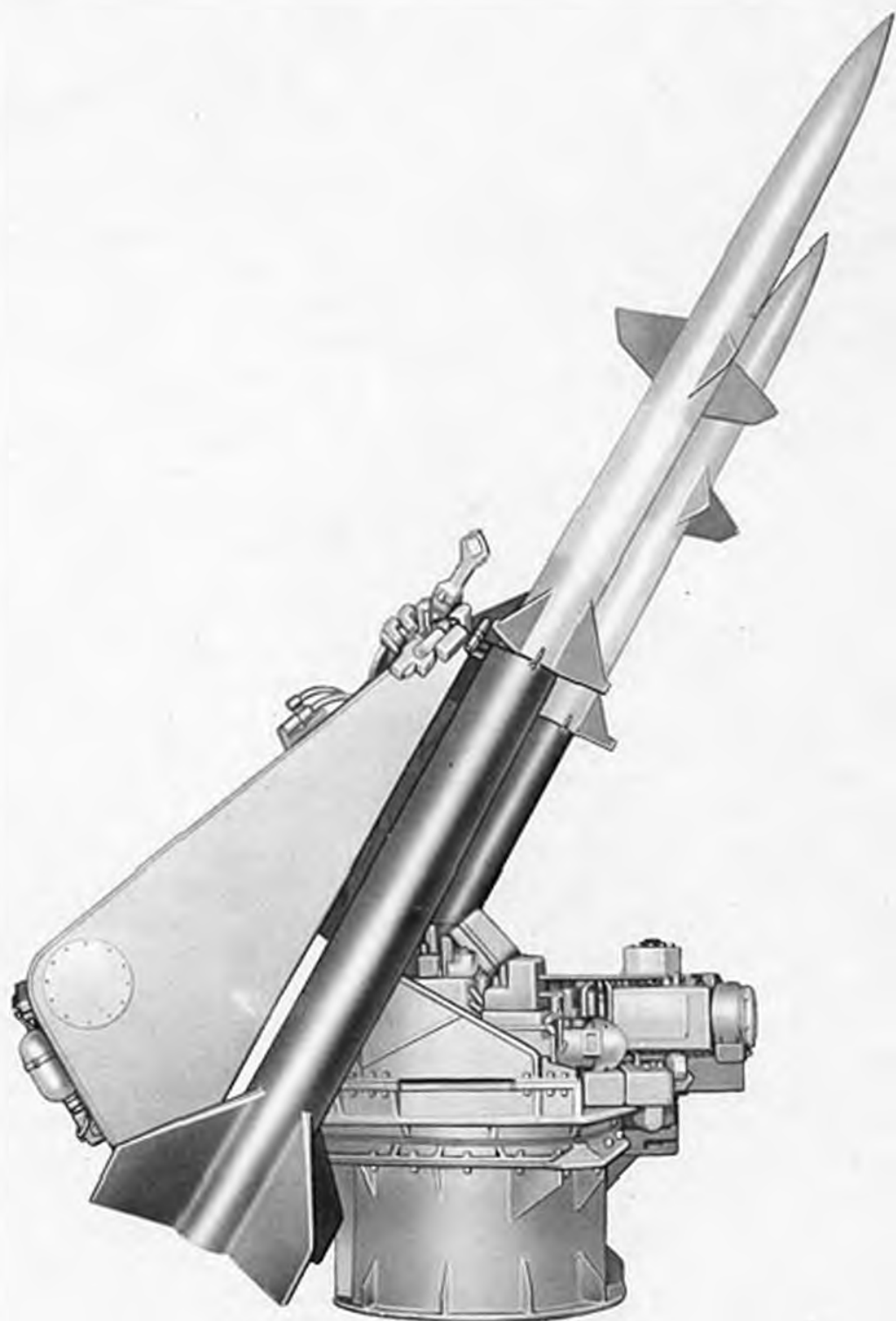
Missiles are classified according to their use. That is, the classification of a missile depends upon the location of the launching station (surface, air, or underwater) and the target location (surface, air, or underwater). A missile launched from the surface to an air target is classified as a surface-to-air missile and is given the designation SAM; a missile launched from the air to an underwater target is known as an air-to-underwater missile and is designated AUM. These designations are supplemented by a letter to designate the

service (e.g. - N for Navy) and a number to indicate the model. As with other service equipment, the prefix "X" is used to designate an experimental model. Therefore, an XASM-N-7 is an experimental, air-to-surface missile used by the Navy; it is the seventh model of its class. Early missiles used for upper atmosphere research, such as the VIKING and AEROBEE, are not classified according to this system.

To the present time, the principal missile launcher development has been for surface-to-surface (SSM) and surface-to-air (SAM) missiles; only these launchers are described in this publication. Some of the early missile launchers reflect the use of the preset control type missile. These launchers are merely supporting structures used to hold the missile prior to firing. Missile Launcher Type X-3 and Missile Launcher Mk 2 Mod 0 are typical examples of this type.

Missile Launcher Type X-2 is an example of one of the first launchers designed to incorporate train and elevation control. This launcher also reflects the early belief that it was necessary to control the initial flight of the missile by a guiding track. The structural problems encountered with this type of launcher, together with the development of zero-length launchers, resulted in launchers such as Missile Launchers Type X-7 and X-8.

Present missile launcher development is in the field of missile launching systems. These systems include one or more missile launchers and incorporate mechanisms for loading, aiming, and firing the launchers, as well as controlling missile flight. Missile Launcher Mk 4 Mod 0, which is used with Missile Launching System Mk 1 Mod 0, is an example of one of the latest service launchers.



Missile Launcher Mk 4 Mod 0

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Missile Launchers

Type		Page
X-2		5
X-3		7
X-5		9
X-6		11
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Mk	Mod	
1	0	17
2	0	19
4	0	21

MISSILE LAUNCHER TYPE X-2

OBSOLETE

DESCRIPTION

Missile Launcher Type X-2 is an experimental, electrically fired, director-controlled weapon for testing guided missiles at shore installations. The weapon, which is the last one of its type developed prior to the advent of zero-length launchers, fires missiles of the BUMBLEBEE and TALOS type.

The launcher consists of a launcher guide rail, supporting frame, carriage, stand, base ring,

adapter ring, and elevation and train mechanisms. All the components except the guide rail, supporting frame, and adapter ring are modified components of a 5.0-inch/38-caliber twin-gun mount. The guide rail, which is trunnion-supported, can be elevated by a gear-driven elevating arc. When a missile on the after end of the guide rail is fired, the first 35 feet of travel are controlled by the guide.

DATA

Number of guides 1
Launcher ammunition BUMBLEBEE
TALOS

Weight:-

Less missile, lb *

Loaded, lb *

Major dimensions:-

Height, in. 243.0
Width, in. 192.0
Length, in. 506.9
Radius of clearance circle, in. 265.3
Radius of working circle, in. 265.3

Guide-laying movements:-

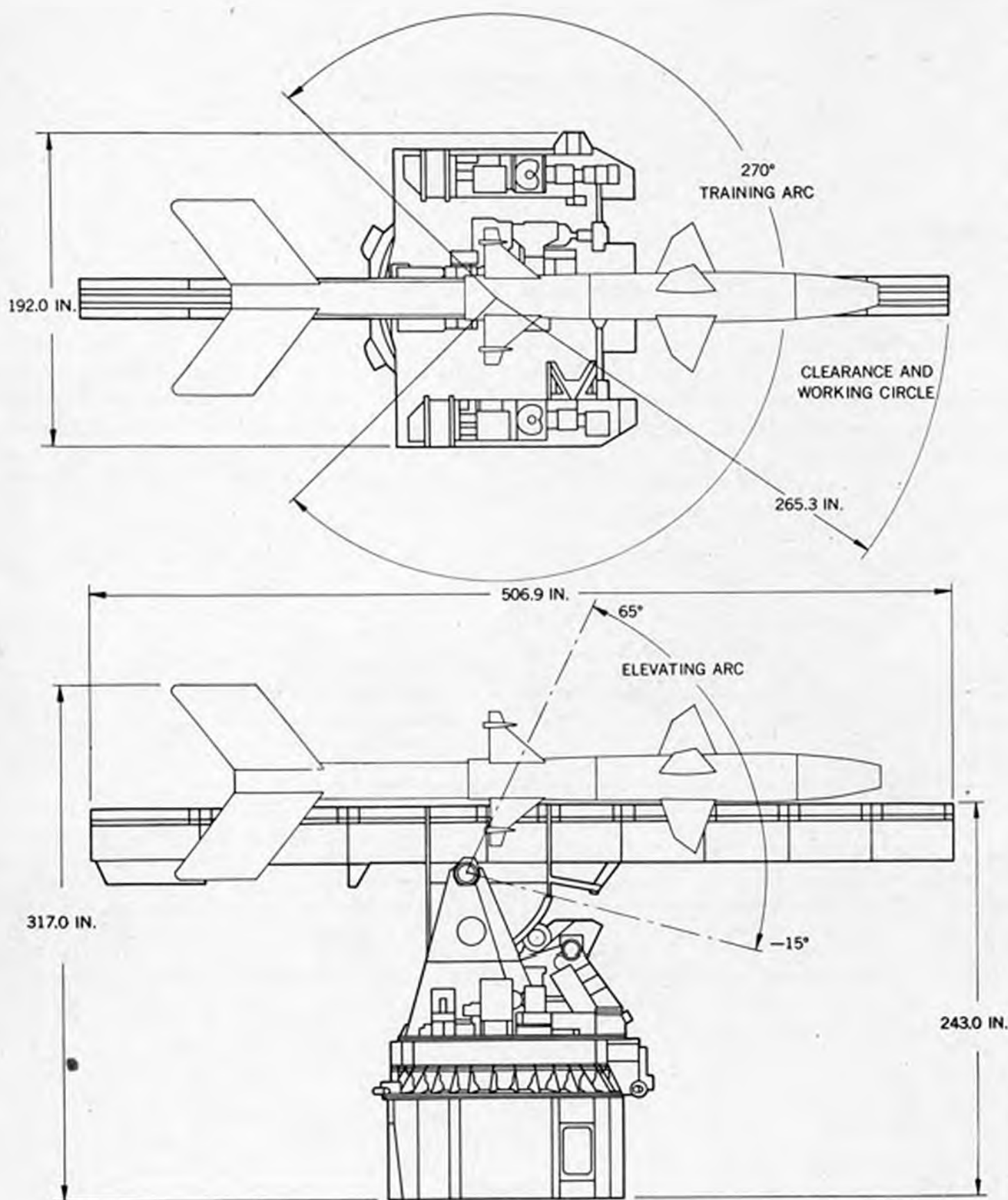
Train, right, deg 0 to 135
Train, left, deg 0 to 135
Elevation, deg -15 to 65
Training speed, deg per sec 8
Elevating speed, deg per sec 8
Firing data:-

Type electric, director-controlled
Launcher capacity, missiles 1

Design references:-

List of drawings LD 258131
General arrangement Dr 514101,2,3,4
Adapters and attachments none
Publication references none

*Data not available



Missile Launcher Type X-2

MISSILE LAUNCHER TYPE X-3

IN SERVICE

DESCRIPTION

Missile Launcher Type X-3 is an electrically fired weapon for launching missiles of the AEROBEE type from shipboard.

The launcher consists of a truss-like structure of triangular cross-section. Three parallel guide

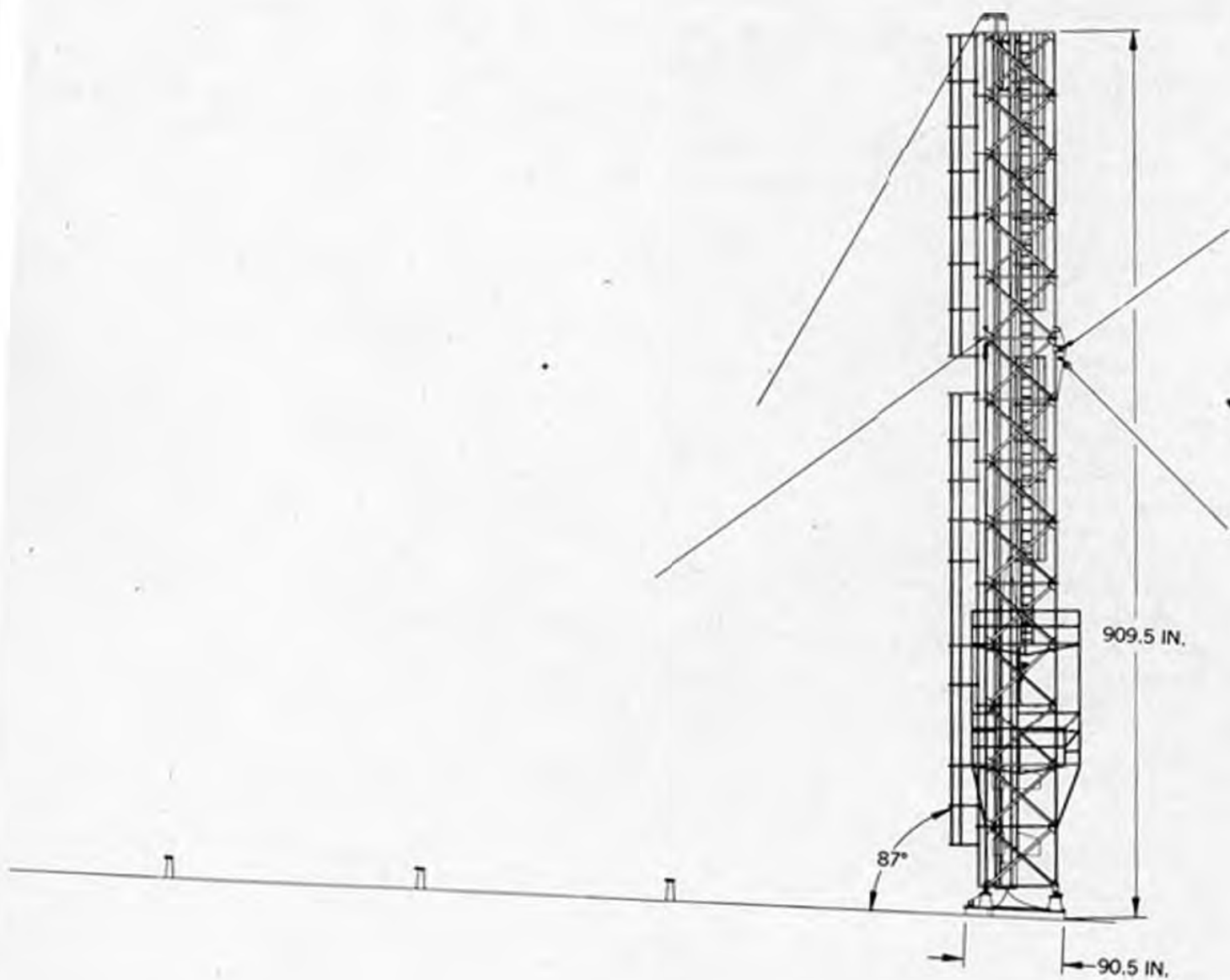
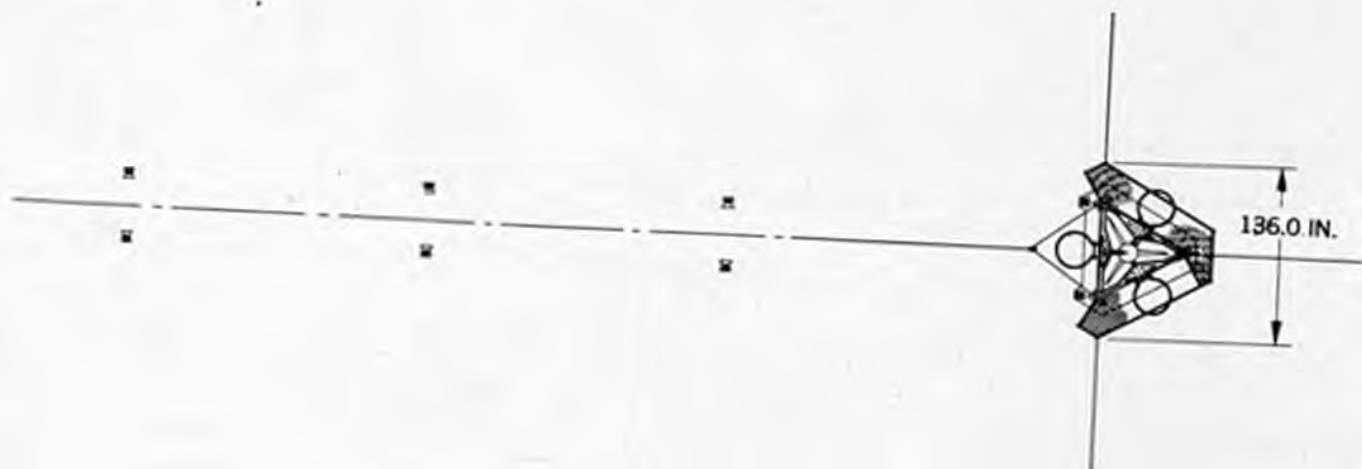
rails within the structure control the course of the missile before it leaves the launcher.

The launcher, which is hinged to the deck at its base, is loaded in the horizontal position and is then elevated into the firing position (87 degrees elevation, pointing aft) by a cable rigging.

DATA

Number of guides 1
 Launcher ammunition AEROBEE
 Weight:-
 Less missile, lb 7500
 Loaded, lb 9127
 Major dimensions:-
 Height (erected), in. 909.5
 Width (erected), in. 135.0
 Length of base, in. 90.6
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:
 Train non-trainable

Guide-laying movements (cont)
 Elevation, fixed angle, deg 87
 Training speed non-trainable
 Elevating speed non-elevatable
 Firing data:-
 Type electric
 Launcher capacity, missiles 1
 Design references:-
 List of drawings none
 General arrangement Dr 807323
 Adapters and attachments loading dolly
 Publication references:-
 Maintenance and Operation OD 6689



Missile Launcher Type X-3

MISSILE LAUNCHER TYPE X-5

IN SERVICE

DESCRIPTION

Missile Launcher Type X-5 is a director-controlled weapon for launching supersonic surface-to-air, beam-riding, antiaircraft missiles of the TERRIER (XSAM-N-7) type. The mount is designed for shipboard installation on a 40-mm quad mount base ring.

Missile Launcher Type X-5 consists of an elevating arm assembly, a carriage, train and elevation mechanisms, an adapter ring, and a modified stand and base ring of a 40-mm quad mount. The elevating arm assembly consists of a cross beam and two arms, which are used to support the missiles. These arms are parallel

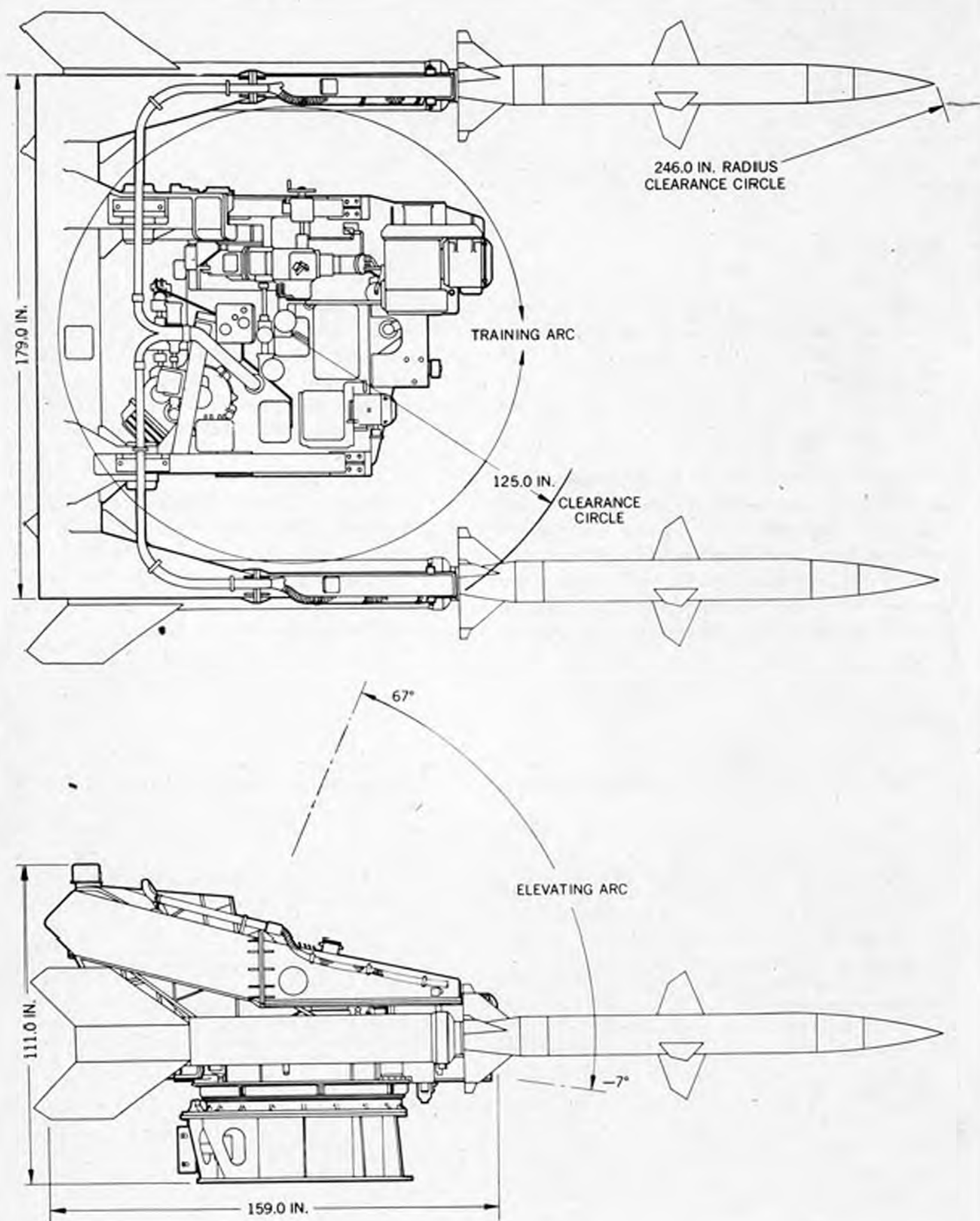
and are secured to the ends of the cross beam, one on each side of the mount. The cross beam is mounted on the carriage and can be moved in train and elevation. The carriage, on which the train and elevation power drives are mounted, is supported by the stand. An adapter ring supports the stand and base ring of the mount.

The launcher is loaded with the aid of a Type X-5 lift truck. This truck, a modification of an Army M-22 Lift Truck, is used to transport the missiles to the launcher and to raise them to the elevating arm assembly. The missiles are secured to the launcher arms by lugs.

DATA

Number of guides2
 Launcher ammunitionTERRIER (XSAM-N-7)
 Weight:-
 Less missiles, lb 25,000
 Loaded (missiles and boosters), lb 29,720
 Major dimensions:-
 Height, in. 111.0
 Width, in. 179.0
 Length, in. 159.0
 Radius of clearance circle, in. 125.0
 Radius of working circle, in. 246.0
 Guide-laying movements:-
 Train, right, deg 0 to 360
 Train, left, deg 0 to 360

Guide-laying movements (cont)
 Elevation, deg 7 to 67
 Training speed, deg per sec 12
 Elevating speed, deg per sec 12
 Firing data:-
 Type electric, director-controlled
 Launcher capacity, missiles 2
 Design references:-
 List of drawings LD 101549
 General arrangement Dr 863723, 4 and 5
 Adapters and attachments Type X-5 Lift Truck
 Publication references:-
 Operation and Maintenance OD 7296 (Prelim)



Missile Launcher Type X-5

MISSILE LAUNCHER TYPE X-6

UNDER DEVELOPMENT

DESCRIPTION

Missile Launcher Type X-6 is an electrically fired, director-controlled weapon designed for launching GREBE missiles. The launcher is part of Missile Launching System Type X-6.

The launcher consists of a guide, carriage, stand, cross-traverse power drive, and train and elevation mechanism. A stabilizing system fixes the position of the launching rails with respect to the horizon in elevation cross traverse. The train and elevation power drives and the stand are modified components of 5-inch/38-caliber twin mount components.

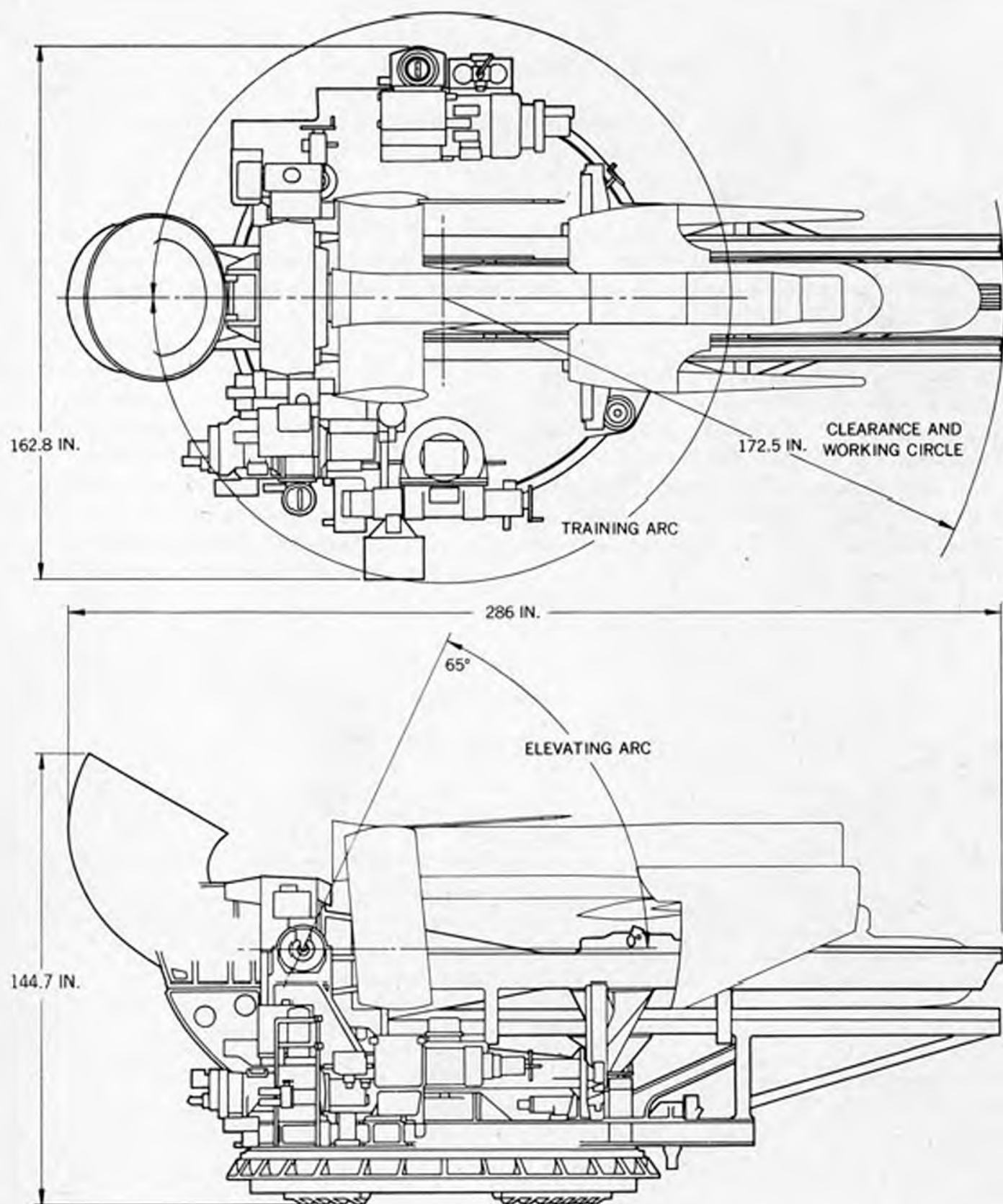
The missile, which is muzzle-loaded, is automatically coupled to an electrical connector when it is rammed into the launcher. This umbilical connection is automatically uncoupled as the missile is launched. When the missile is fired, three guide rails control the missile during the first eight feet of travel; the missile leaves all three rails simultaneously. A holdback device to fix the range of short flights restrains the missile while a predetermined part of the booster is expended. The missile blast is deflected upward by a blast horn at the after end of the launcher.

DATA

Number of guides.....	1
Launcher ammunition.....	GREBE
Weight:-	
Less missiles, lb	*
Loaded, lb	*
Major dimensions:-	
Height, in.	144.7
Length, in.	286.0
Width, in.	162.8
Radius of clearance circle, in.	172.5
Radius of working circle, in.	172.5
Guide-laying movements:-	
Train, right, deg	0 to 360
Train, left, deg	0 to 360
Elevation, deg	0 to 65

Guide-laying movements (cont)	
Cross traverse, right, deg	0 to 40
Cross traverse, left, deg	0 to 40
Training speed, deg per sec	25
Elevating speed, deg per sec	25
Cross traverse speed, deg per sec	30
Firing data:-	
Type	electric, director-controlled
Launcher capacity, missiles	1
Design references:-	
List of drawings	LD 101690
General arrangement	Dr 863986,7
Adapters and attachments	none
Publication references	none

*Data not available



Missile Launcher Type X-6

MISSILE LAUNCHER TYPE X-7

IN SERVICE

DESCRIPTION

Missile Launcher Type X-7 is a mobile, electrically fired weapon for launching supersonic beam-riding antiaircraft missiles of the TERRIER (XSAM-N-7) type. The launcher is similar to Missile Launcher Type X-5 except that it has four-wheel trailer-type running gear and emplacement supports. The running gear and the emplacement arrangements have been taken from a U. S. Army experimental 105-mm AA mount and adapted to their present use. The addition of this gear enables the weapon to be used as one component of a mobile battery.

The launcher consists of an elevating arm assembly, a carriage, train and elevating mechanisms, a stand, emplacement supports, and a trailer. The elevating arm assembly consists of a cross beam and two arms, which are used to

support the missiles. These arms are parallel and are secured to the ends of the cross beam, one on each side of the mount. The cross beam is mounted on the carriage and can be moved in train and elevation. The carriage and the train and elevation power drives are supported by the the stand, which is mounted on the trailer.

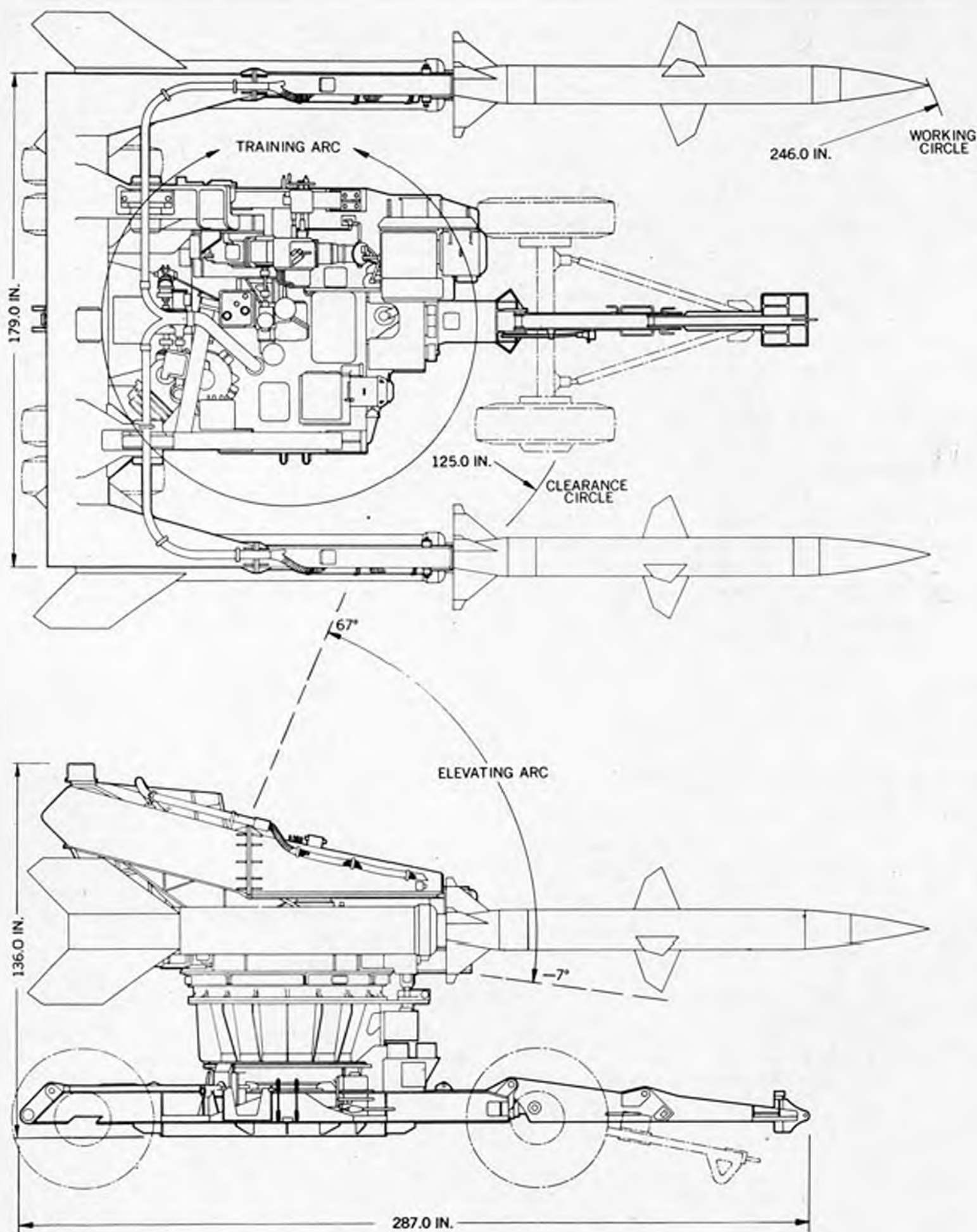
After the mount has been towed to the launching site, the wheels are removed by lifting the mount with hydraulic jacks; emplacement outriggers are spread; and the launcher is lowered. The launcher is loaded with the aid of a Type X-7 Lift Truck. This truck, which is a modification of an Army M-22 Lift Truck, is used to transport the missiles to the launcher and to raise them to the elevating arm assembly. The missiles are secured to the launcher arms by lugs.

DATA

Number of guides	2
Launcher ammunition	TERRIER (XSAM-N-7)
Weight:-	
Less missiles, lb	40,000*
Loaded (missiles and boosters), lb	44,720*
Major dimensions:-	
Travelling condition	
Height, in.	150.0
Width, in.	179.0
Length, in.	283.0
Emplaced	
Height, in.	136.0
Width, in.	179.0
Length, in.	287.0
Radius of clearance circle, in.	125.0
Radius of working circle, in.	246.0

Guide-laying movements:-	
Train	unlimited
Elevation, deg per sec	-7 to 67
Training speed, deg per sec	12
Elevating speed, deg per sec	12
Firing data:-	
Type	electric, director-controlled
Launcher capacity, missiles	2
Design references:-	
List of drawings	LD 101550
General arrangement	Dr 863726,7,8,9 Dr 863730,1
Adapters and attachments	Type X-7 Lift Truck
Publication references:	
Operation and Maintenance	OD 7340

* Estimated



Missile Launcher Type X-7

MISSILE LAUNCHER TYPE X-8

UNDER DEVELOPMENT

DESCRIPTION

Missile Launcher Type X-8 is an experimental, electrically fired weapon for testing guided missiles at shore installations. The weapon, which is a redesigned version of Missile Launcher Type X-2, is capable of firing supersonic beam-riding antiaircraft missiles of the TERRIER (XSAM-N-7), type.

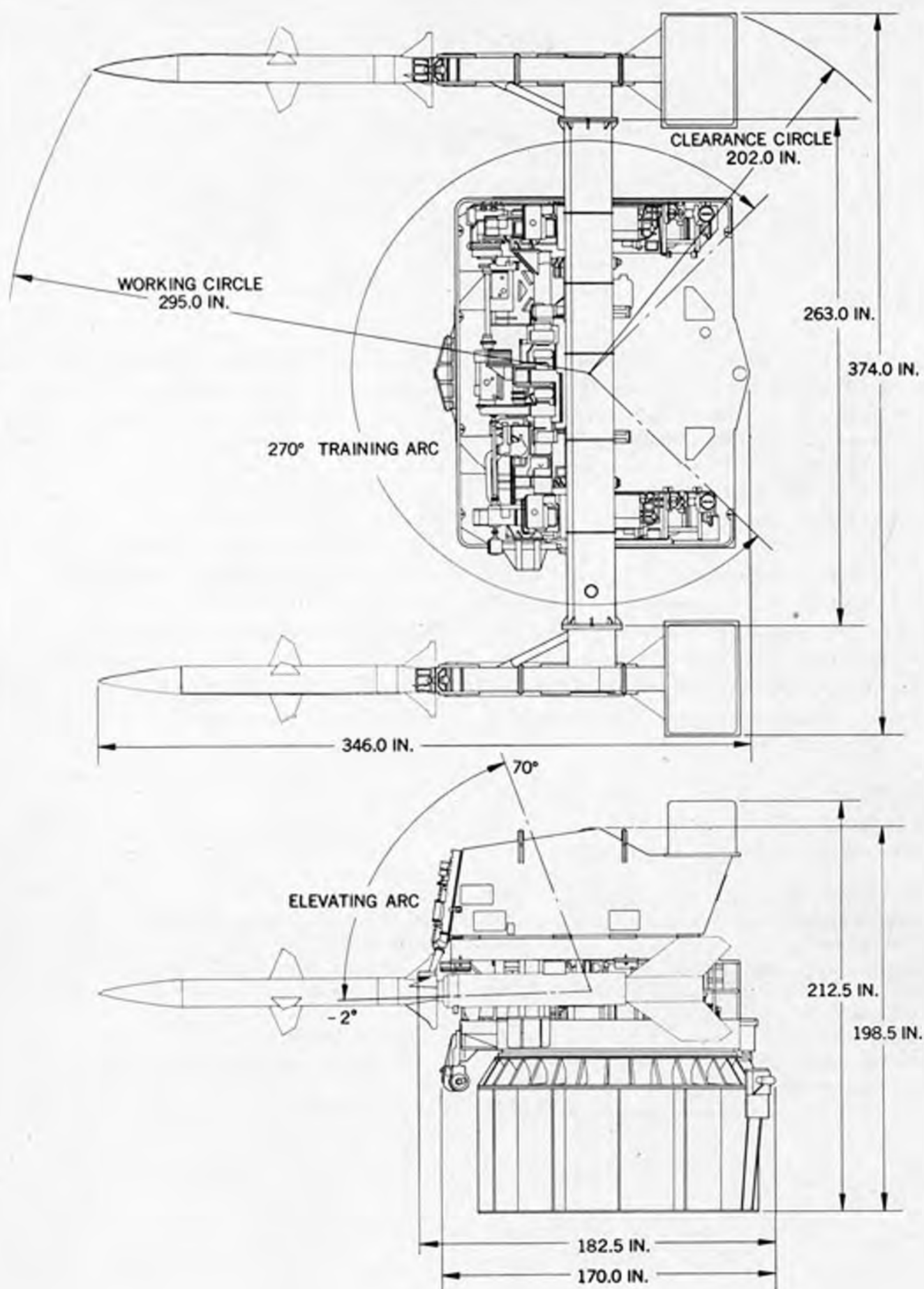
The launcher consists of a support tube, elevation and train mechanisms, a carriage, stand, base ring, and an adapter ring. All of the components except the supporting tube and the adapter ring are modified components of the 5.0-

inch/38-caliber twin-gun mount. The support tube is a horizontal cylinder that rotates about trunnions to direct the missiles in elevation. The ends of the support tube project over the sides of the launcher, and, in operation, adapter arms are secured to each end of the support tube. Missiles to be fired from the launcher are secured to the bottom of the adapter arms. The adapter ring, or barrette, mounted between the stand and the mount foundation, provides the clearance necessary to prevent the missile wings from striking the ground when the mount is at high angles of elevation.

DATA

Number of guides 2
 Launcher ammunition TERRIER (XSAM-N-7)
 Weight:-
 Less missiles, lb 53,000
 Loaded (TERRIER missiles), lb 58,220
 Major dimensions:-
 Height, in. 198.5
 Width, in. 263.0
 Length, in. 170.0
 Radius of clearance circle, in. 202.0
 Radius of working circle, in. 295.0
 Guide-laying movements:-
 Train, right, deg 0 to 135

Guide-laying movements (cont)
 Train, left, deg 0 to 135
 Elevation, deg -2 to 70
 Training speed, deg per sec 8
 Elevating speed, deg per sec 8
 Firing data:-
 Type electric, director-controlled
 Launcher capacity, missiles 2
 Design references:-
 List of drawings LD 260540
 General arrangement Dr 515170, 1, 2, and 3
 Adapters and attachments adapter arms
 Publication references OD 7911



Missile Launcher Type X-8

MISSILE LAUNCHER MARK 1 MOD 0

OBSOLETE

DESCRIPTION

Missile Launcher Mk 1 Mod 0 is part of the apparatus used to erect, support, and launch large guided missiles. The launcher is designed for the preset control type missile known as Long Range Rocket V-2.

Missile Launcher Mk 1 Mod 0 consists of two identical assemblies secured athwart the rocket launching platform. Each assembly supports a boom that contains supporting shoes. The missile is erected on the launching platform, and the booms of the assemblies are swung upward to a vertical position. When the booms are locked in the vertical position, the supporting shoes en-

circle the erect missile at two positions. These supporting shoes do not grip or hold the rocket; they are guides that prevent the wind from dislodging the missile prior to the time it is fired. The missile must be supported on the launching platform during the period of fueling, control adjustment, testing, and igniting. When the missile is fired, the supports swing away and all interference to free missile ascent is removed.

A later model of this launcher, Missile Launcher Mk 2 Mod 0, operates on the same principle, but has a modified boom support and is provided with wheels to make it portable.

DATA

Number of guides 1
Launcher ammunition V-2 Rocket

Weight:-

Less missile, lb *
Loaded, lb *

Major dimensions (one assembly):-

Height (erected), in. 347.5
Height (stowed), in. 398.3
Width, in. 100.0
Length (stowed), in. 152.0
Radius of clearance circle non-trainable
Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable
Elevation, fixed angle, deg 90

Training speed non-trainable
Elevating speed fixed elevation

Firing data:-

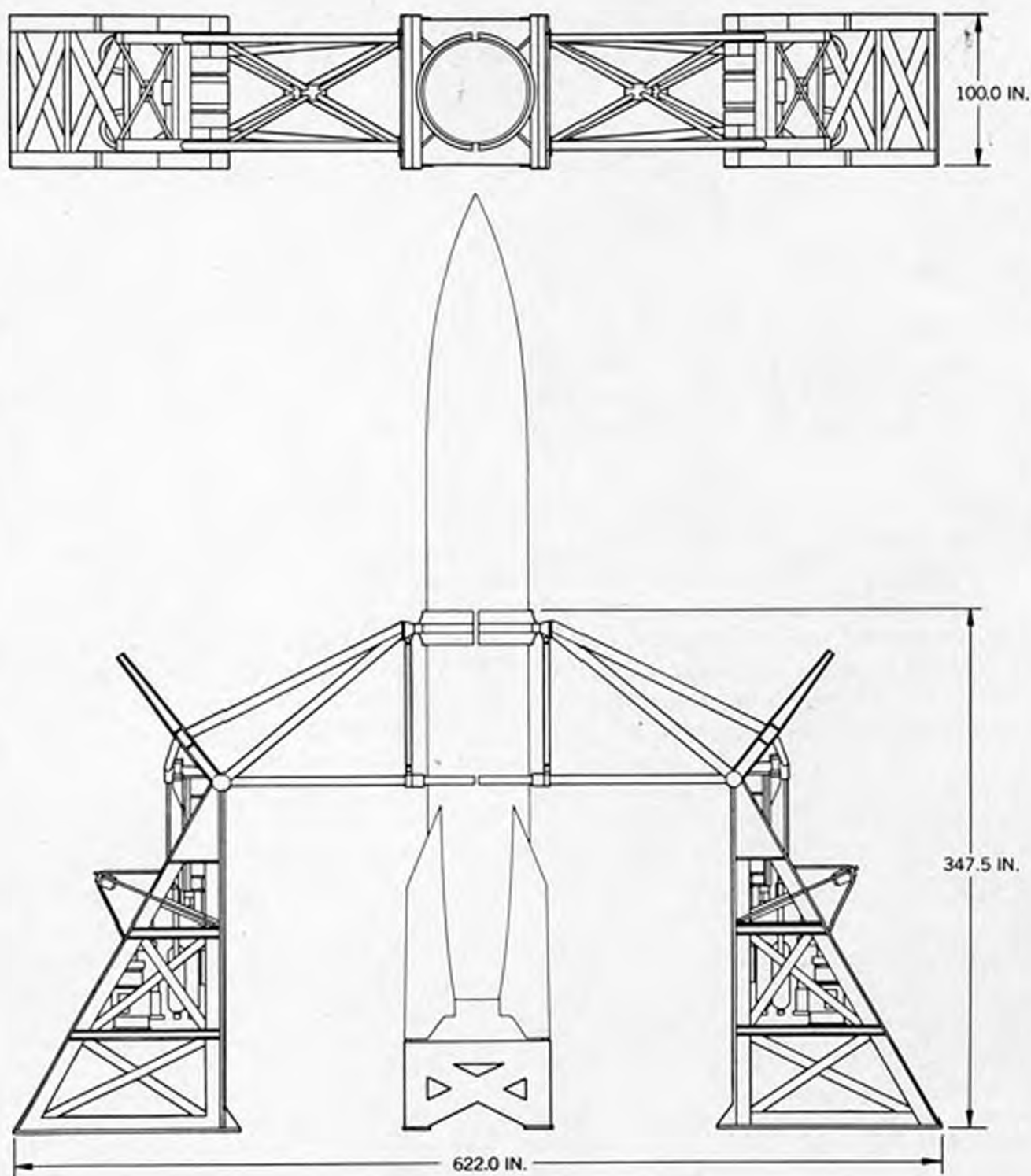
Type electric
Launcher capacity, missiles 1

Design references:-

List of drawings none
General arrangement Sk 147000

Adapters and attachments none
Publication references none

*Data not available



Missile Launcher Mk 1 Mod 0

MISSILE LAUNCHER MARK 2 MOD 0

OBSOLETE

DESCRIPTION

Missile Launcher Mk 2 Mod 0 is part of the apparatus used to erect, support, and launch large guided missiles from shipboard. The launcher is designed for the preset control type missile known as Long Range Rocket V-2.

Missile Launcher Mk 2 Mod 0 consists of two portable assemblies that are secured athwart the launching platform on an open deck. Each assembly supports a boom that contains supporting shoes. In operation, the missile is erected on the launching platform, and one assembly of the launcher is placed on each side of the platform. The booms of the assemblies are swung

upward from the stowed position to a vertical position by electric-hydraulic drives. When the booms are locked in the vertical position, the supporting shoes of the booms encircle the erect missile at two positions. The supporting shoes of Missile Launcher Mk 2 Mod 0 do not grip or hold the rocket; they are guides that prevent the roll of the ship or the wind from dislodging the missile prior to the time it is fired. The missile must be supported on the launching table during the period of fueling, control adjustment, testing, and igniting. When the missile is fired, the supports swing away and remove all interference to free missile ascent.

DATA

Number of guides 1

Launcher ammunition V-2 Rocket

Weight:-

Less missile, lb 120,000*

Loaded, lb 145,000*

Major dimensions (one assembly):-

Height (erected), in. 504.0

Height (stowed), in. 165.3

Width, in. 251.2

Length (stowed), in. 381.5

Radius of clearance circle (stowed) .. non-trainable

Radius of clearance circle (erected) .. non-trainable

Radius of working circle (erected) non-trainable

Guide-laying movements:-

Train non-trainable

Elevation, fixed angle, deg 90

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

Type electric

Launcher capacity, missiles 1

Design references:-

List of drawings Sk 108570

General arrangement Dr 512662, 3, 4

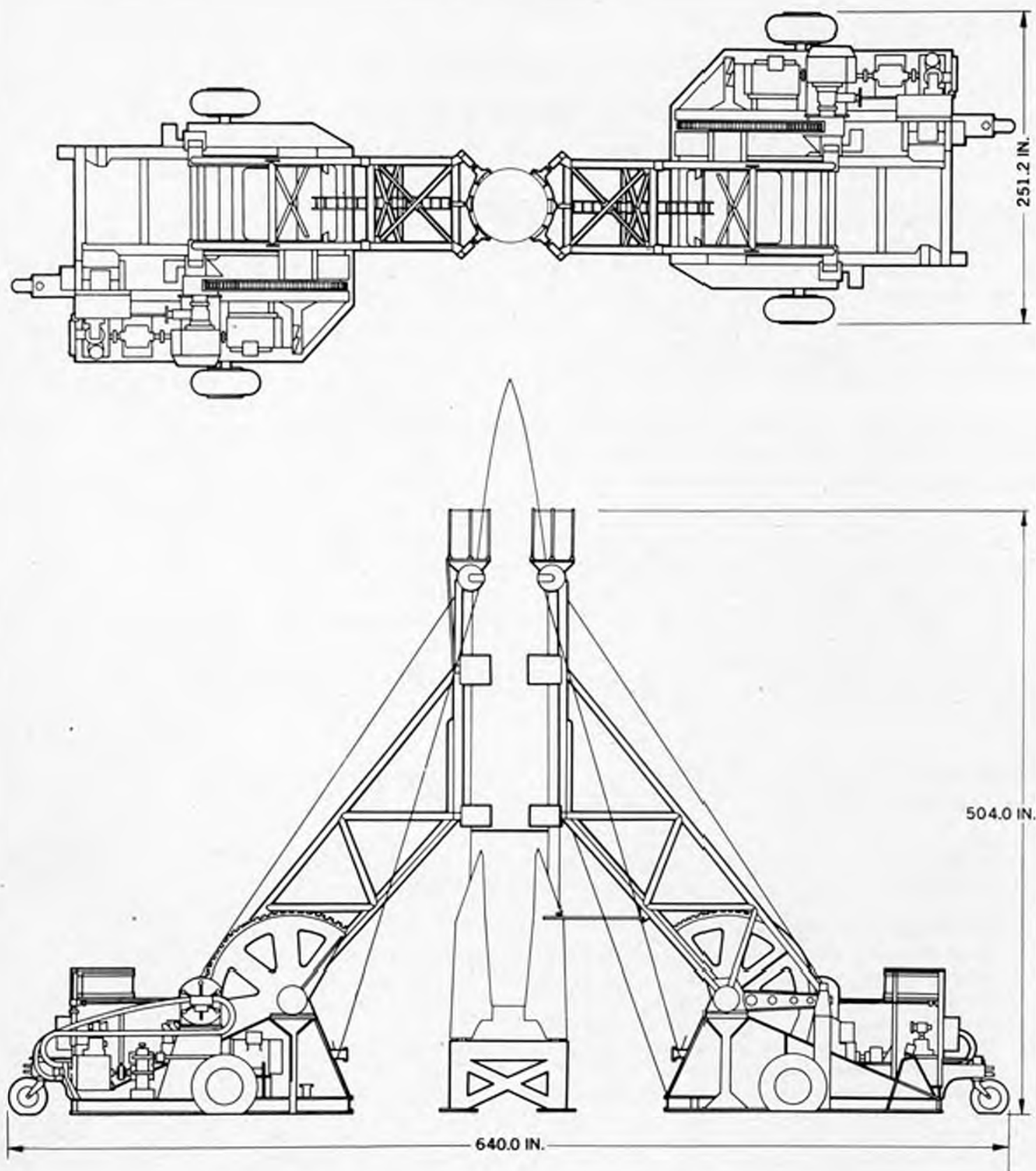
Dr 512674

Adapters and attachments none

Publication references:-

Instruction handbook OD 6661

*Estimated



Missile Launcher Mk 2 Mod 0

MISSILE LAUNCHER MARK 4 MOD 0
IN SERVICE

DESCRIPTION

Missile Launcher Mk 4 Mod 0, which is part of Missile Launching System Mk 1 Mod 0, is an electrically fired, director-controlled weapon for launching supersonic surface-to-air, beam-riding, antiaircraft missiles of the TERRIER (XSAM-N-7) type. The mount is designed for shipboard installation on a 40-mm quad mount base ring. Missile Launcher Mk 4 Mod 0 is similar to Missile Launcher Type X-5 except for the elevation arm assembly, which is modified to permit use of a missile with greater distance between the missile-supporting lugs.

Missile Launcher Mk 4 Mod 0 consists of an elevating arm assembly, carriage, train and elevation mechanisms, adapter ring, and modified

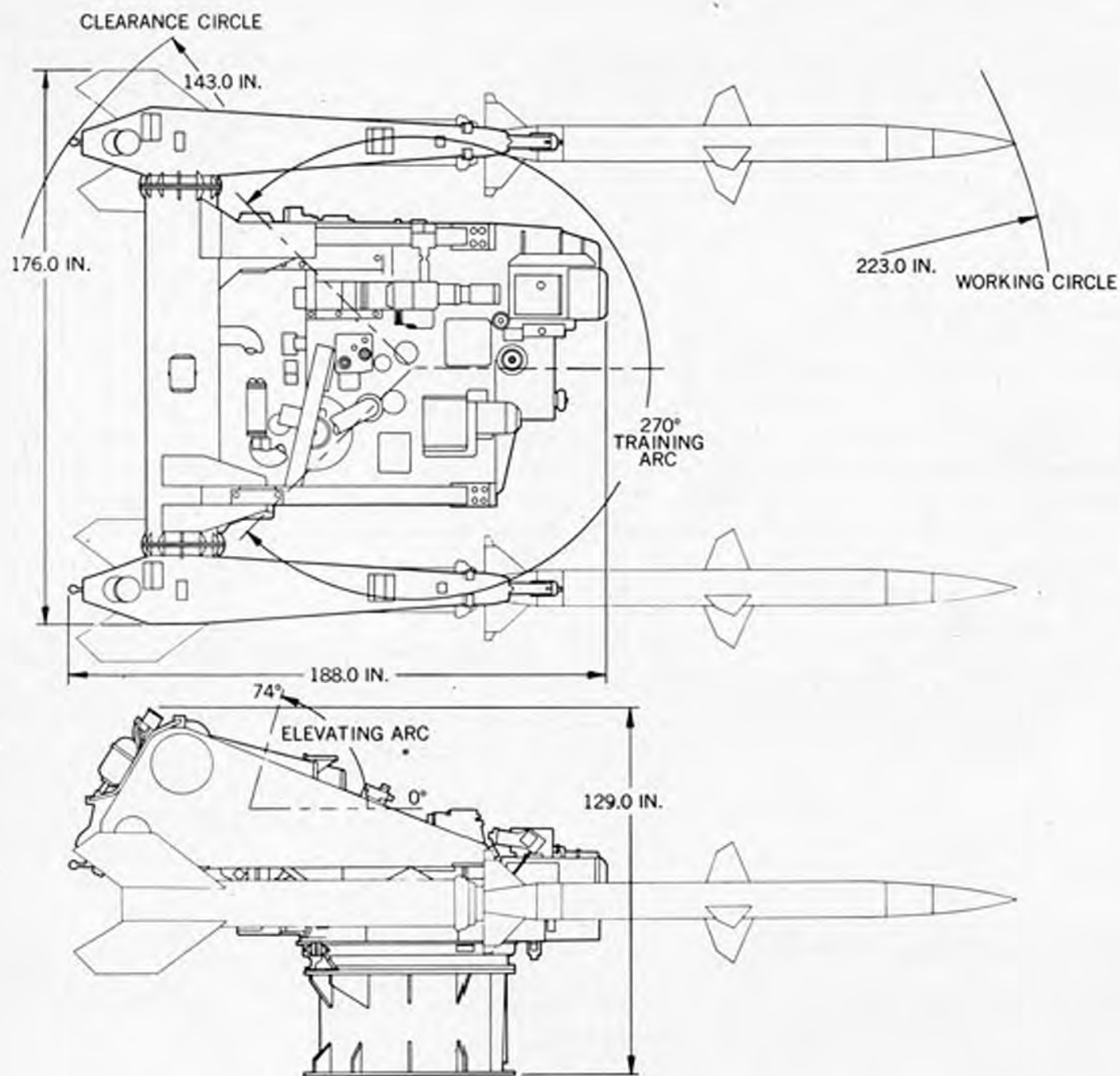
stand and base ring of a 40-mm quad mount. The elevating arm assembly consists of a cross beam and two arms, which support the missiles. These arms are parallel and are secured to the ends of the cross beam, one on each side of the mount. The cross beam is mounted on the carriage, and can be moved in train and elevation. The carriage, on which the train and elevation power drives are mounted, is supported by the stand. An adapter ring supports the stand and base ring of the mount.

The launcher is loaded with the aid of the loading mechanism of Missile Launching System Mk 1 Mod 0. When the missiles are aligned with the launcher arms, they are secured by lugs.

DATA

Number of guides 2
Launcher ammunition TERRIER (XSAM-N-7)
Weight:-
 Less missiles and boosters, lb 30,466
 Loaded (missiles and boosters), lb 35,186
Major dimensions:-
 Height, in. 129.0
 Width, in. 176.0
 Length, in. 188.0
 Radius of clearance circle, in. 143.0
 Radius of working circle, in. 223.0
Guide-laying movements:-
 Train, right, deg 0 to 135
 Train, left, deg 0 to 135

Guide-laying movements (cont)
 Elevation, deg 0 to 74
 Training speed, deg per sec 12
 Elevating speed, deg per sec 12
Firing data:-
 Type electric, director-controlled
 Launcher capacity, missiles 2
Design references:-
 List of drawings LD 1018109
 General arrangement Dr 863955,6,7
Adapters and attachments none
Publication references:-
 Operation and maintenance OP 1918 (Prelim)



Missile Launcher Mk 4 Mod 0

PART 2

ROCKET LAUNCHERS

CONTENTS

Section 2-A	Aircraft Rocket Launchers	25
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SECTION 2-A

AIRCRAFT ROCKET LAUNCHERS

An aircraft rocket launcher is an airborne weapon for launching rockets. A rocket, which is a missile with an open-ended combustion chamber, is propelled by the escape of high-pressure gases from the combustion chamber.

In rocket terminology, the fuel is called the *propellant*, and the housing that contains the propellant and the combustion chamber is known as the *rocket motor*. The pay load of the rocket is contained within the head of the rocket; this head may be an integral part of the motor, or it may be a separate section that is attached prior to loading the launcher.

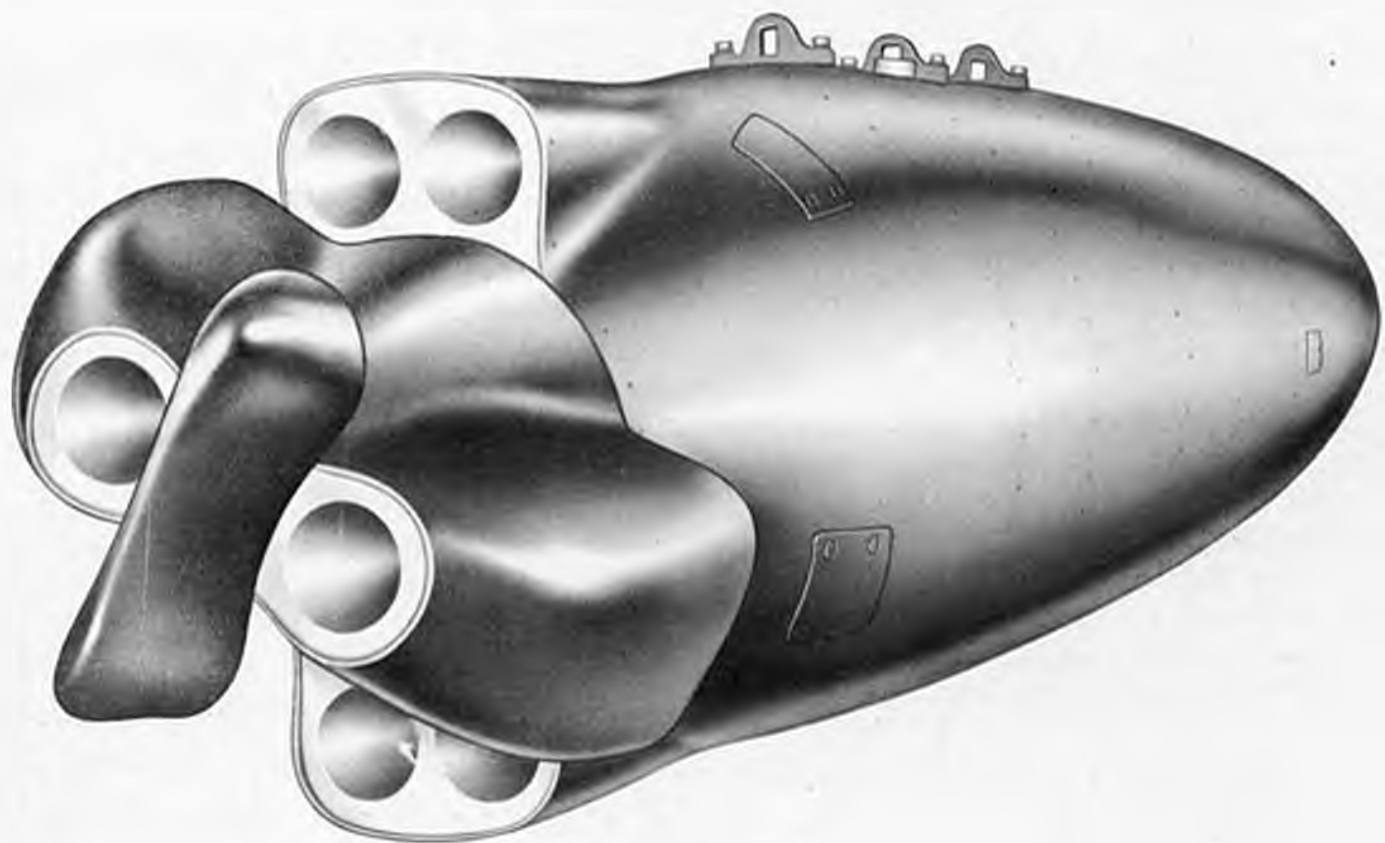
Since rockets cannot be controlled once in flight, and since all aircraft rocket launchers designed to date have been longitudinally fixed, the path of the rocket is governed by the direction of the aircraft at the time of firing. In flight, a rocket must be aerodynamically stable; this stability is accomplished by inducing spin from aerodynamic fins or canted motor nozzles. Fixed protruding fins are disadvantageous when the rocket is to be used in an automatic rocket launcher. To overcome this difficulty, specially designed rockets that have folding fins are used.

Aircraft rockets are classified according to their caliber and use. A 2.25-inch FFAR is a folding-fin aircraft rocket whose major diameter (usually the head) is 2.25 inches; a 3.5-inch HVAR is a high-velocity aircraft rocket with a major diameter of 3.5 inches.

Aircraft rocket launchers have an advantage over guns in that they have no recoil. Therefore, the launcher can be of relatively light and small construction in comparison to the firepower delivered. This construction not only reduces structural and maintenance problems, but also enables the launchers to be mounted on aircraft without difficulty.

Early aircraft rocket launchers, such as Aircraft Rocket Launcher Mk 2, were designed to facilitate the launching of drift signal rockets rearward. All service aircraft rocket launchers are used to increase the armament of aircraft, and thereby to increase aircraft effectiveness for operations such as antisubmarine warfare, low-level attacks, and ground support. Aircraft Rocket Launcher Mk 4 is the earliest example of launchers designed for such use during World War II. In this launcher, the aircraft rocket is attached by a button-type lug that rides in a slotted guide. Aircraft Rocket Launcher Mk 5, which is another example of World War II weapons, is the first zero-length launcher to be employed. The rockets are suspended from two pylons; the after pylon contains a retaining latch that prevents the rockets from being prematurely released. The trend to single-pylon aircraft rocket launchers is reflected in Aircraft Rocket Launcher Mk 9. Aircraft Rocket Launcher Aero 14B is the latest development of this type of launcher.

With the development of high-speed aircraft, the necessity for reducing the air resistance of aircraft rocket launchers led to experiments with internally stowed launchers, such as Aircraft Rocket Launcher Mk 8. As a result of problems created by rocket blast and space limitations, the latest trend is toward external, aerodynamically faired launchers. Some of these launchers, such as Aircraft Rocket Launcher Mk 13, are automatic, non-expendable weapons. This particular launcher also reflects a new trend in air warfare: the use of rockets for air-to-air combat. More recent launchers, such as Aircraft Rocket Launcher, Package, Aero X6A, are of the expendable type. This type of launcher can be released from the aircraft after the rockets have been expended, in order to eliminate the aerodynamic drag caused by the launcher.



Aircraft Rocket Launcher Mk 13 Mod 0

CONTENTS

2.25-inch Aircraft Rocket Launchers

Mk	Mod	Page
4	0	29
6	0	31
Aero 1A		33

2.5-inch Aircraft Rocket Launchers

Mk	Mod	Page
3	0	35

2.75-inch Aircraft Rocket Launchers

Mk	Mod	Page
2	0	37
2	2	39
13	1	41
Aero, X-6A		43

3.5-inch Aircraft Rocket Launchers

Mk	Mod	Page
5	0	45
5	1	47
5	2	49
5	3	51

3.5-inch Aircraft Rocket Launchers (cont)

Mk	Mod	Page
5	4	53
Grumman Type Zero	Length	55
9	0	57
9	1	59
9	2	61
9	3	63

5.0-inch Aircraft Rocket Launchers

Mk	Mod	Page
Aero 14A		65
Aero 14B		67
7	0	69
7	1	71
8	0	73
10	0	75
11	0	77

7.2-inch Aircraft Rocket Launchers

Mk	Mod	Page
1	0	79

AIRCRAFT ROCKET LAUNCHER MARK 4 MOD 0

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 4 Mod 0 is an electrically fired weapon for launching fin-stabilized rockets from aircraft. The usual installation consists of four launchers attached to the under surface of each wing.

The launcher consists of a built-up aluminum guide that is attached to the wing by two hollow posts. Vertical and horizontal boresight adjustments are contained within these posts. The after end of the guide contains a retaining latch

that prevents the rockets from being dislodged when the aircraft is in flight.

The launcher is loaded by sliding the rocket button-type suspension lugs into the T-slot guide. The after lug engages a stop and shear-wire retaining latch at the after end of the guide. Electrical connection for firing is made by a plug in the after end of the launcher. When the launcher is fired, the forward thrust of the rocket severs the latch shear wire and the rocket is free to move off the guide.

DATA

Number of guides 1

Type forward firing; T-slot

Launcher ammunition:-

2.25-inch, 3.5-inch, and 5.0-inch aircraft rockets having two button-type suspension lugs with 33.8-inch spacing

Weight:-

Less ammunition, lb 12.5

Loaded

With 2.25-inch Rocket, lb 24

With 3.5-inch Rocket, lb 69

With 5.0-inch Rocket (5.0-inch Motor), lb 150

Major dimensions:-

Length, in. 92.1

Width, in. 3.7

Depth, in. 3.7

Firing data:

Type electric

Launcher capacity, rounds 1

Firing interval single fire

Design references:-

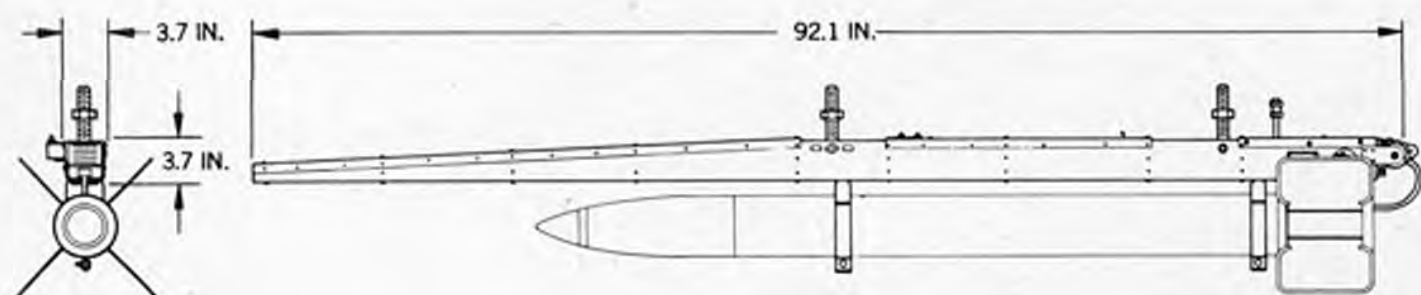
List of drawings Sk 109058

General arrangement Dr 394912

Adapters and attachments none

Publication references:

Ammunition OP 1157



Aircraft Rocket Launcher Mk 4 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 6 MOD 0

IN SERVICE

DESCRIPTION

Aircraft Rocket Launcher Mk 6 Mod 0 is an electrically fired weapon for launching subcaliber practice rockets from large caliber aircraft rocket launchers. A forward button-type suspension lug and an after tunnel permit the launcher to be attached quickly to Aircraft Rocket Launcher Mk 5 All Mods. A special fitting is required to adapt Aircraft Rocket Launcher Mk 6 Mod 0 to the Grumman Type Zero Length Aircraft Rocket Launcher. Two extra button-type studs are welded to Aircraft Rocket Launcher Mk 6 Mod

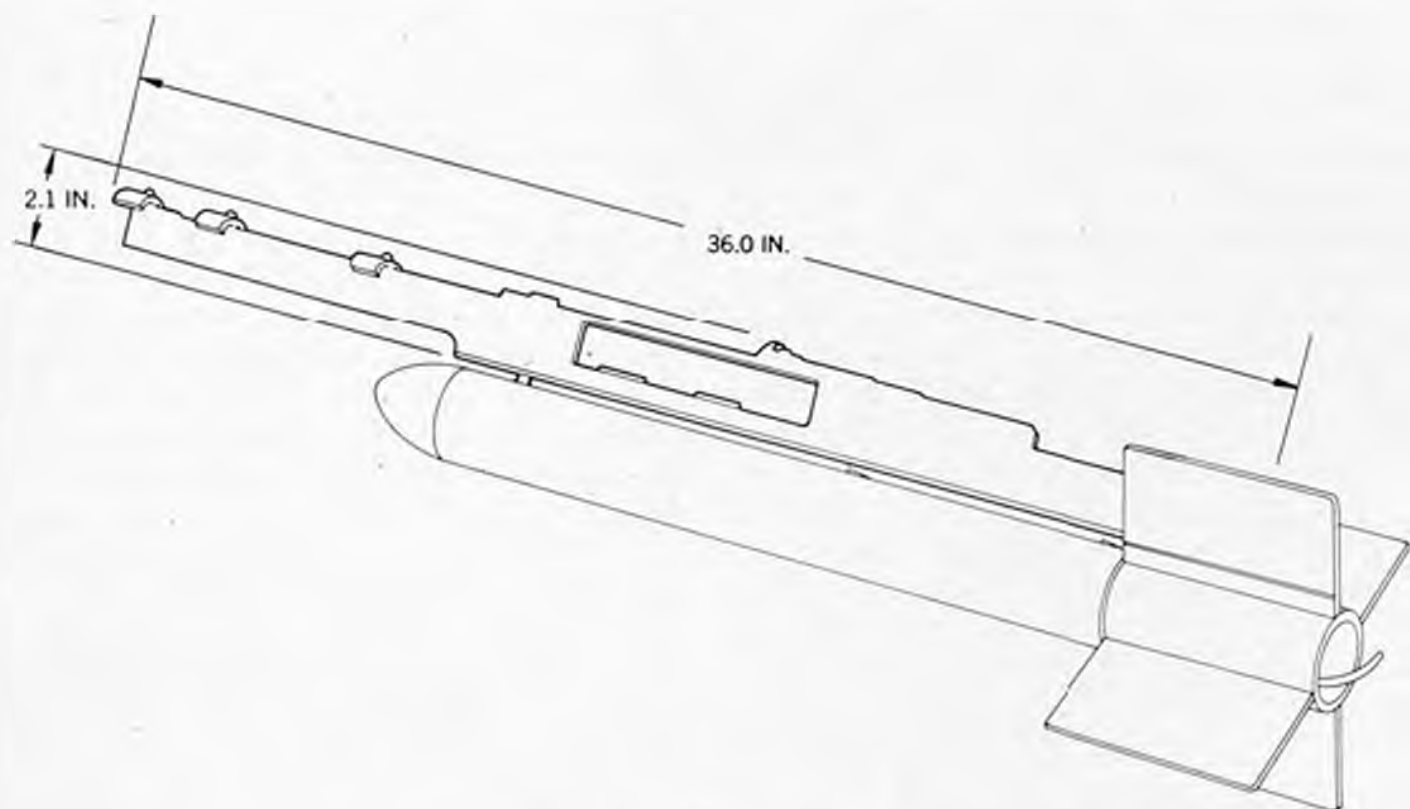
0 to adapt it to Aircraft Rocket Launcher Mk 9 All Mods.

Aircraft Rocket Launcher Mk 6 Mod 0 consists of a steel guide with a track similar to that of Aircraft Rocket Launcher Mk 4 Mod 0 for button-type suspension lugs. The launcher is loaded by sliding the rocket suspension lugs into the guide. A shear-wire retaining latch prevents the rocket from becoming dislodged while the aircraft is in flight. When the launcher is fired, the forward thrust of the rocket shears the wire, and the rocket is free to move off the guide.

DATA

Number of guides.....1
Type.....forward firing; T-slot
Launcher ammunition:-
 2.25-inch subcaliber aircraft rockets having two
 button-type suspension lugs with 18.3-inch
 spacing
Weight:-
 Less ammunition, lb4.5
 Loaded (2.25-inch Rocket Mk 3 Mod 3), lb16
Major dimensions:-
 Length, in.36.0
 Width, in.1.9

Major Dimensions (cont)
 Depth, in.2.1
Firing data:-
 Type.....electric
 Launcher capacity, rounds.....1
 Firing intervalsingle fire
Design references:-
 List of drawingsnone
 General arrangement.....none
Adapters and attachmentsnone
Publication references
 BuAer CatalogueCO-AN 11-75-A-1-M



Aircraft Rocket Launcher Mk 6 Mod 0

AIRCRAFT ROCKET LAUNCHER AERO 1A

IN SERVICE

DESCRIPTION

Aircraft Rocket Launcher Aero 1A is an electrically fired weapon for launching subcaliber practice rockets from Aircraft Rocket Launcher Aero 14A.

Aircraft Rocket Launcher Aero 1A consists of a tube, track, and forward and after support assemblies. The tube is a metal housing of square cross section that is aerodynamically faired at the forward end. The track is a U-shaped channel that is secured to the lower half of the tube. This track has a slotted guide that receives the button-type suspension lugs of the subcaliber ammunition. The forward and after support assemblies are secured to the upper half of the tube. These supports are identical to the rocket supports on the ammunition designed for use

with Aircraft Rocket Launcher Aero 14A; the forward support is a button-type suspension lug, and the after support is a tunnel suspension lug.

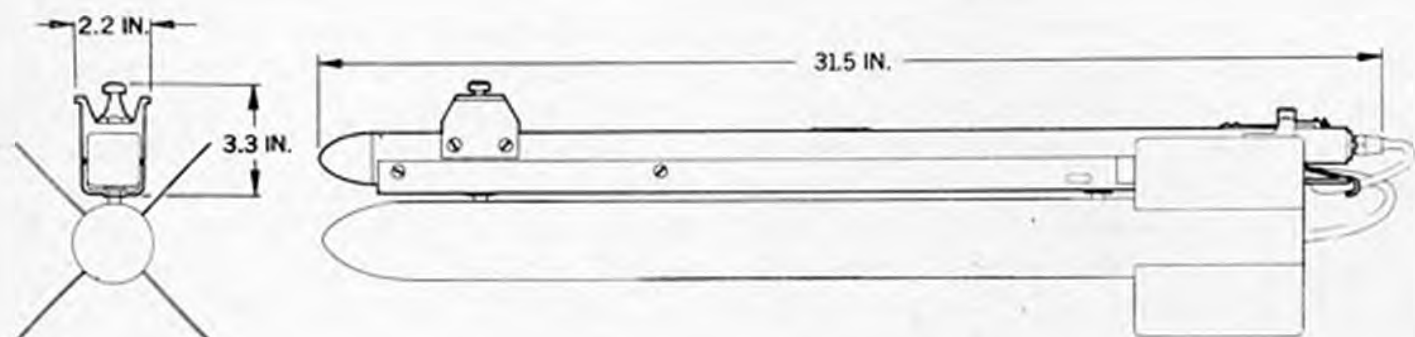
Aircraft Rocket Launcher Aero 1A is secured to Aircraft Rocket Launcher Aero 14A by the support assemblies. The subcaliber ammunition is then loaded on Aircraft Rocket Launcher Aero 1A by sliding the button-type suspension lugs into the slot of the track. A latch in the after end of the track secures the after lug and prevents the rocket from being dislodged while the aircraft is in flight. When the launcher is fired, the latch is released and the rocket is free to move off the guide. The electrical connection for firing is made by a plug receptacle in the after end of the launcher.

DATA

Number of guides 1
Type forward firing; T-slot
Launcher ammunition:-
2.25-inch subcaliber aircraft rockets having two
button-type suspension lugs with 18.3-inch
spacing
Weight:-
Less ammunition, lb 5.6
Loaded (2.25-inch Rocket Mk 3 Mod 3), lb 17
Major dimensions:-
Length, in. 31.5
Width, in. 2.2

Major Dimensions (cont)

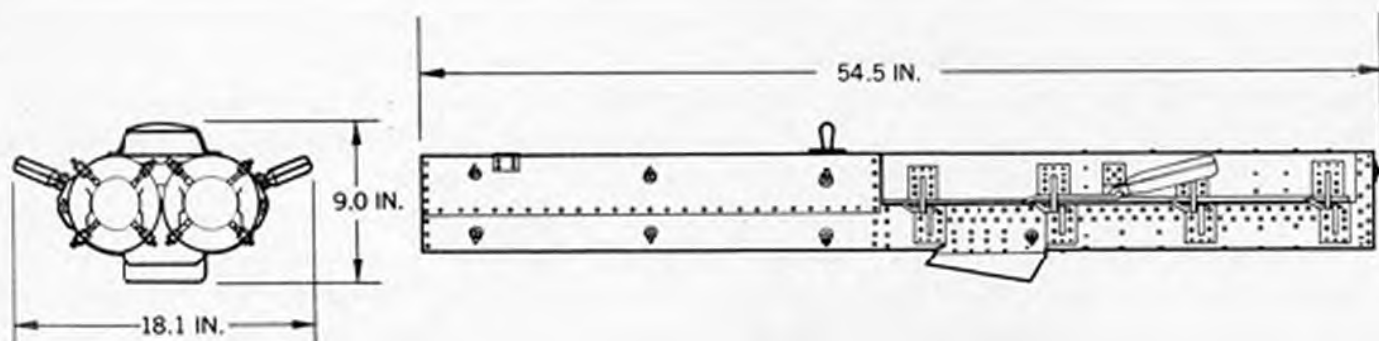
Depth, in. 3.3
Firing data:-
Type electric
Launcher capacity, rounds 1
Firing interval single fire
Design references:-
List of drawings BuAer 49A219
General arrangement BuAer Dr 49A21941
Adapters and attachments none
Publication references none



Aircraft Rocket Launcher Aero 1A



Aircraft Rocket Launcher Mk 3 Mod 0



Aircraft Rocket Launcher Mk 2 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 2 MOD 2

IN SERVICE

DESCRIPTION

Aircraft Rocket Launcher Mk 2 Mod 2 is an electrically fired weapon for launching drift signal rockets. The launcher is installed in the fuselage of an airplane so that the rockets are directed down and aft. The launcher is an improved version of Aircraft Rocket Launcher Mk 2 Mod 0 in that it contains an improved electrical system and has a solenoid-operated rocket-holding device. In addition, Aircraft Rocket Launcher Mk 2 Mod 2 has two handles and an electrical junction box on the after end.

The launcher is a double-barreled housing that

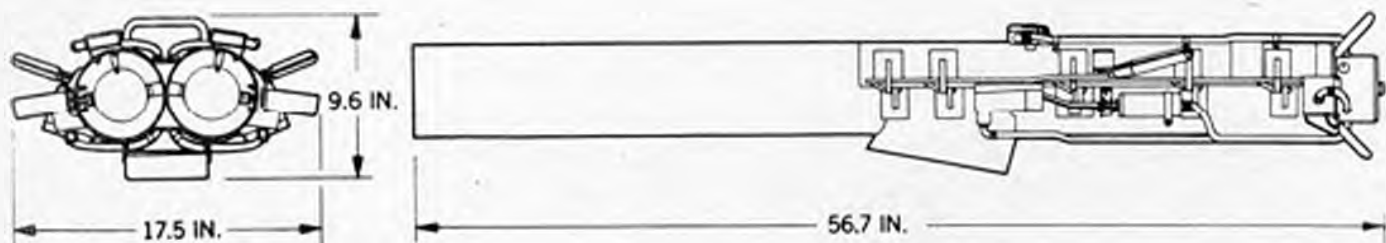
has four guide rails in each barrel. An access door for loading is provided on the side of each barrel. When the launcher is loaded, a block bears against the rocket. This block is released by a spring-loaded solenoid-operated lever when the launcher is fired.

Electrical connection for firing is made to the junction box on the after end of the launcher. Two cables from this junction box are connected to contact housings; one contact housing is externally located on each access door.

DATA

Number of guides 2
 Type aft firing; tubular
 Launcher ammunition:-
 Drift signal rockets
 Weight:-
 Less ammunition, lb 60
 Loaded, lb 140
 Major dimensions:-
 Length, in. 56.7
 Diameter (each tube), in. 5.4
 Width, in. 17.5

Major dimensions (cont)
 Depth, in. 9.6
 Firing data:-
 Type electric
 Launcher capacity, rounds 2
 Design references:-
 List of drawings NADS 50A91ASK1
 General arrangement NADS Dr 50A91H9
 Adapters and attachments none
 Publication references none



Aircraft Rocket Launcher Mk 2 Mod 2

AIRCRAFT ROCKET LAUNCHER MARK 13 MOD 1

UNDER DEVELOPMENT

DESCRIPTION

Aircraft Rocket Launcher Mk 13 Mod 1 is an electrically fired weapon for launching folding-fin, air-to-air rockets from high-speed combat aircraft. The launcher is a streamlined package that can be carried from a standard 14- or 30-inch bomb rack, or from a standard bomb pylon. The weapon is a design refinement of a similar launcher, Aircraft Rocket Launcher Mk 13 Mod 0.

The launcher is longitudinally divided into five sections: two rocket-containing sections to the rear, and three forward rotary sections. Of the two rocket-containing sections, the tail section contains six rocket tubes arranged in a circular pattern; the center section contains 18 similar tubes. The tail section is loaded from the rear after removing exhaust cones. The center section is also loaded from the rear after swinging the tail section sidewise on a hinge. Rocket tubes in the tail section are aligned with tubes in the center section so that the rear rockets can fire through the center section tubes after rockets in these tubes are expended.

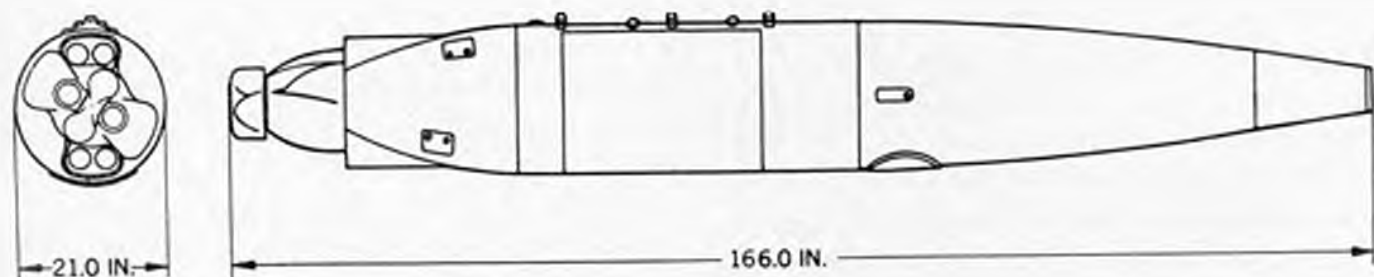
The three forward rotary sections are automatically rotated about a common axis by electrohydraulic mechanisms. Of these three sections the forward section is a fairing that rotates 90 degrees to expose two rocket guides in the nose. The other two sections, called the forward nose and after nose, contain guides that index in all positions with the rocket tubes in the center and tail sections. Rockets from the inner bank of tubes in the center and tail section are launched from the two guides in the forward nose. Rockets from the outer bank of tubes in the center section are launched from the four guides in the after nose while the forward nose is rotated out of the way.

Rockets can be ripple-fired in groups of 8, 16, or 24. Since the indexing of one nose cone does not interfere with the launching through the other, the alignment is accomplished during firing, and a fast ripple fire results until all rockets are expended.

DATA

Number of guides 6
Type forward firing; cylindrical
Launcher ammunition:-
2.75-inch folding-fin air-to-air rockets
Weight:-
Less ammunition, lb 360
Loaded, lb 792
Major dimensions:-
Length, in. 166.0
Diameter, in. 21.0
Firing data:-
Type electric

Firing data (cont)
Launcher capacity, rounds 24
Firing interval
8-round salvo, sec 0.032
16-round salvo, sec 0.053
24-round salvo, sec 0.060
Design references:-
List of drawings none
General arrangement Dr 977464
Adapters and attachments none
Publication references:-
Instruction handbook OP 1856 (Preliminary)



Aircraft Rocket Launcher Mk 13 Mod 1

AIRCRAFT ROCKET LAUNCHER, AERO, X-6A

UNDER DEVELOPMENT

DESCRIPTION

Aircraft Rocket Launcher, Aero, X-6A, is an expendable, electrically fired weapon for launching folding-fin aircraft rockets from high-speed aircraft.

The launcher consists of seven spirally wrapped paper tubes that have interior and exterior plastic coatings. Wooden fillers between the tubes and a fabric covering are used to combine the tubes in a unit of hexagonal cross section. Each end

of the launcher is provided with a frangible fairing. These fairings, which reduce the air resistance of the launcher when the aircraft is in flight, are attached after the seven rockets have been loaded. An ignition spider within the launcher fires the rockets in ripple salvo.

The launcher, which is designed to be carried on a pylon of the Aircraft Rocket Launcher Aero 14A type, can be jettisoned at the pilot's discretion.

DATA

Number of guides	7
Type	forward firing; tubular
Launcher ammunition:-	
2.75-inch folding-fin air-to-air rockets	
Weight:-	
Less ammunition, lb	16
Loaded, lb	142
Major dimensions:-	
Length, in.	72.0
Width, in.	8.4
Depth, in.	10.6

Firing data:-

Type electric
 Launcher capacity, rounds 7
 Firing interval, sec 0.2*

Design references:-

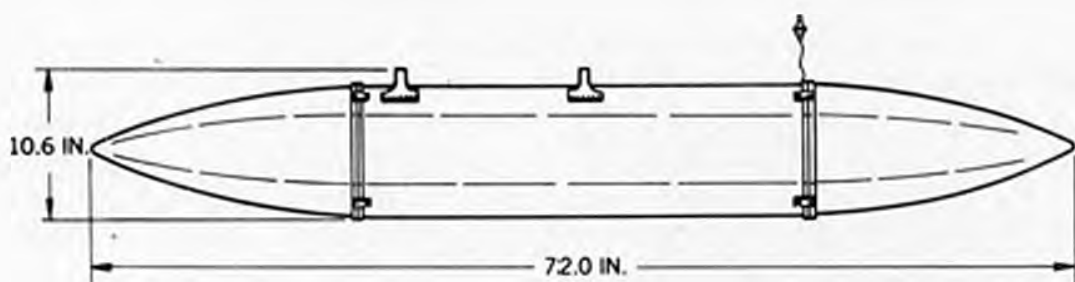
List of drawings none
General arrangement none

Adapters and attachments none

Publication references:-

Operations Instructions NOTS Tech Memo 1104
NOTS Report No. 327

*Estimated



Aircraft Rocket Launcher, Aero, X-6A

AIRCRAFT ROCKET LAUNCHER MARK 5 MOD 0

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 5 Mod 0 is an electrically fired weapon for launching fin-stabilized rockets from aircraft. This weapon is a zero-length launcher consisting of a forward and after post. These posts are mounted on base plates that are attached to the under surface of the wing. The forward post has a slotted guide that supports the button-type suspension lug near the forward end of the rocket. The rocket is attached to

the after post by a tunnel lug.

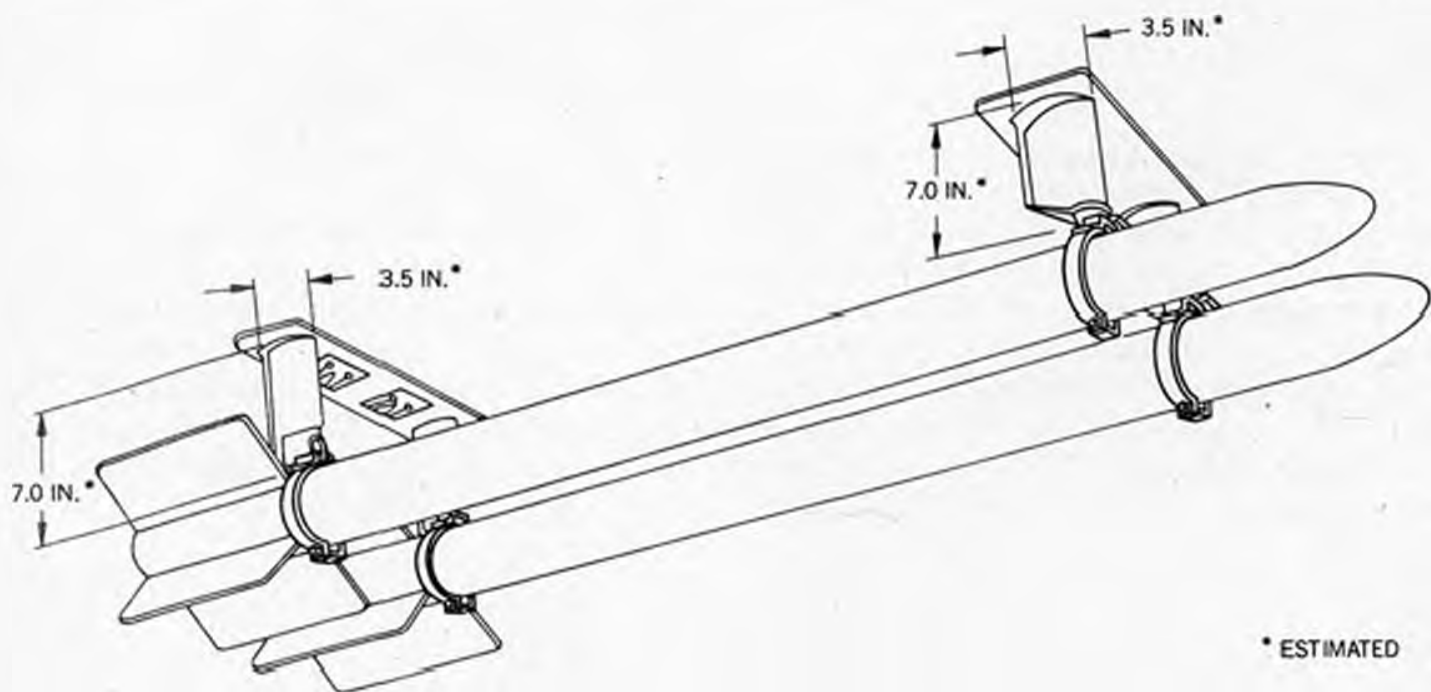
The launcher is loaded by sliding the rocket lugs into the forward and after posts. Arming controls are mounted beside the forward posts in the base plate. Electrical connection for firing is made by a plug receptacle recessed in the after post base plate. When the launcher is fired, the connector cable of the rocket is blown aft and is sheared by a shear plate.

DATA

Number of guides 1
 Type forward firing; forward and after post
 Launcher ammunition:-
 3.5-inch and 5.0-inch aircraft rockets having a
 button-type suspension lug forward and a
 tunnel lug aft, with 35.3-inch spacing
 Weight:-
 Less ammunition (set of four launchers), lb 40
 Loaded (set of four launchers)
 With 3.5-inch Rocket, lb 260
 With 5.0-inch Rocket (5.0-inch Motor), lb 590
 Major dimensions:-
 Forward post
 Length, in. 3.5*
 Width, in. 1.0*

Major Dimensions (cont)
 Depth, in. 7.0*
 After post
 Length, in. 3.5*
 Width, in. 1.0*
 Depth, in. 7.0*
 Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
 Design references:-
 List of drawings none
 General arrangement NAS San Diego Dr 5-7426
 Adapters Aircraft Rocket Launcher Mk 6 Mod 0
 Publication references none

*Estimated



Aircraft Rocket Launcher Mk 5 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 5 MOD 1

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 5 Mod 1 is an electrically fired weapon for launching fin-stabilized rockets from all types of aircraft. Aircraft Rocket Launcher Mk 9 replaces this launcher.

Aircraft Rocket Launcher Mk 5 Mod 1 is a zero-length launcher that consists of a forward and after post. These posts are mounted in sets of four on base plates that are attached beneath an airplane wing. Aircraft Rocket Launcher Mk 5 Mod 1 differs from Aircraft Rocket Launcher Mk 5 Mod 0 in that the posts are made of aluminum alloy instead of steel. The forward post of Air-

craft Rocket Launcher Mk 5 Mod 1 has a slotted guide that receives the button-type suspension lug near the forward end of the rocket; the rocket is secured to the after post by a tunnel lug.

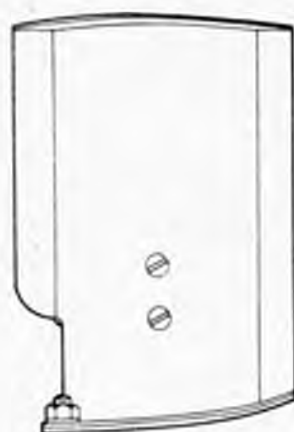
The launcher is loaded by sliding the rocket lugs into the forward and after posts. An arming control is built into the forward post. Electrical connection for firing is made by a socket in the after post. The rocket squib is held in this socket by spring clips, which release the squib when the launcher is fired. A shear-wire latch in the after post is released on firing.

DATA

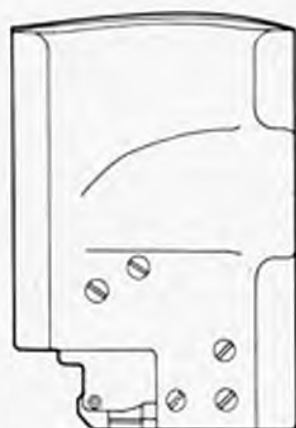
Number of guides 1
 Type forward firing; forward and after post
 Launcher ammunition:-
 3.5-inch and 5.0-inch aircraft rockets having a
 button-type suspension lug forward, and a
 tunnel lug aft, with 35.3-inch spacing
 Weight:-
 Less ammunition (set of four launchers), lb 25
 Loaded (set of four launchers)
 With 3.5-inch Rocket, lb 245
 With 5.0-inch Rocket (5.0-inch Motor), lb 575
 Major dimensions:-
 Forward post
 Length, in. 4.3
 Width, in. 2.5

Major Dimensions (cont)

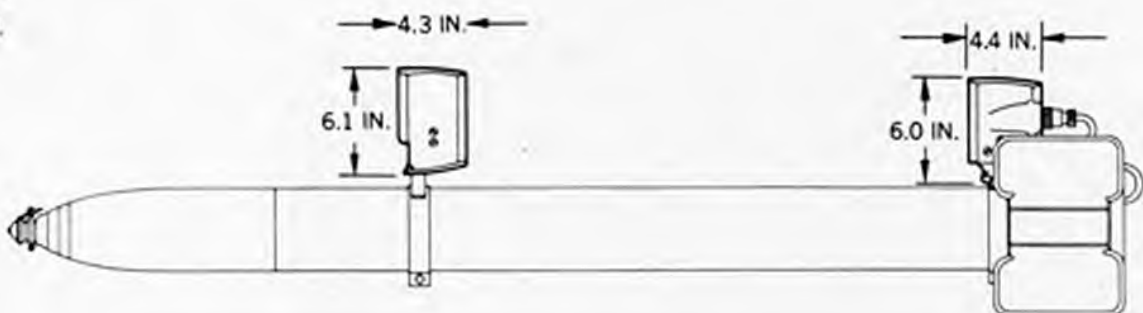
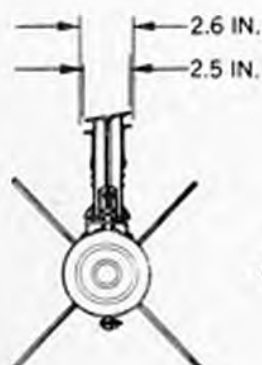
Depth, in. 6.1
 After post
 Length, in. 4.4
 Width, in. 2.6
 Depth, in. 6.0
 Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
 Design references:-
 List of drawings none
 General arrangement none
 Adapters Aircraft Rocket Launcher Mk 6 Mod 0
 Publication references BuAer TO 137-44



FORWARD POST



AFTER POST



Aircraft Rocket Launcher Mk 5 Mod 1

AIRCRAFT ROCKET LAUNCHER MARK 5 MOD 2

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 5 Mod 2 is an electrically fired weapon for launching fin-stabilized rockets from all types of aircraft. It is identical with Aircraft Rocket Launcher Mk 5 Mod 1 except that it is strengthened to make it suitable for use with 5.0-inch HVAR ammunition. Aircraft Rocket Launcher Mk 5 Mod 2 is replaced by Aircraft Rocket Launcher Mk 9 All Mods.

Aircraft Rocket Launcher Mk 5 Mod 2 is a zero-length launcher that consists of a forward and after post. These aluminum alloy posts are mounted in sets of four on base plates that are attached to the under surface of the wing. The forward post has a slotted guide that supports

the button-type suspension lug near the forward end of the rocket; the rocket is attached to the after post by a tunnel lug. In Aircraft Rocket Launcher Mk 5 Mod 2, the latch tongue on the after post is tapered and beveled, and the slot in the forward post is deeper than on Rocket Launcher Mk 5 Mod 1. This modification facilitates the loading of the launcher.

The launcher is loaded by sliding the rocket lugs into the forward and after posts. An arming control is built into the forward post. Electrical connection for firing is made by a socket in the after post. A shear-wire latch in the after post is released on firing.

DATA

Number of guides 1
 Type forward firing; forward and after post
 Launcher ammunition:-
 3.5-inch and 5.0-inch aircraft rockets having
 a button-type suspension lug forward, and
 a tunnel lug aft, with 35.3-inch spacing
 Weight:-
 Less ammunition (set of four launchers), lb 25
 Loaded (set of four launchers)
 With 3.5-inch Rocket, lb 245
 With 5.0-inch Rocket (5.0-inch Motor), lb 575
 Major dimensions:-
 Forward post
 Length, in. 4.3
 Width, in. 2.5

Major dimensions (cont)

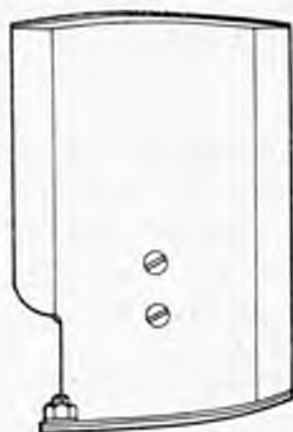
Depth, in. 6.1
 After post
 Length, in. 4.4
 Width, in. 2.6
 Depth, in. 6.0

Firing data:-

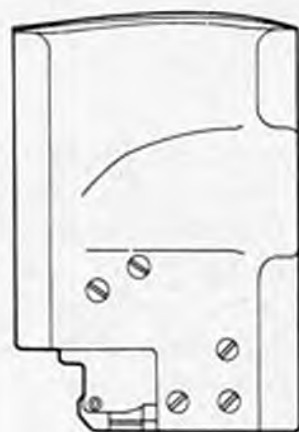
Type electric
 Launcher capacity, rounds 1
 Firing interval single fire

Design references:-

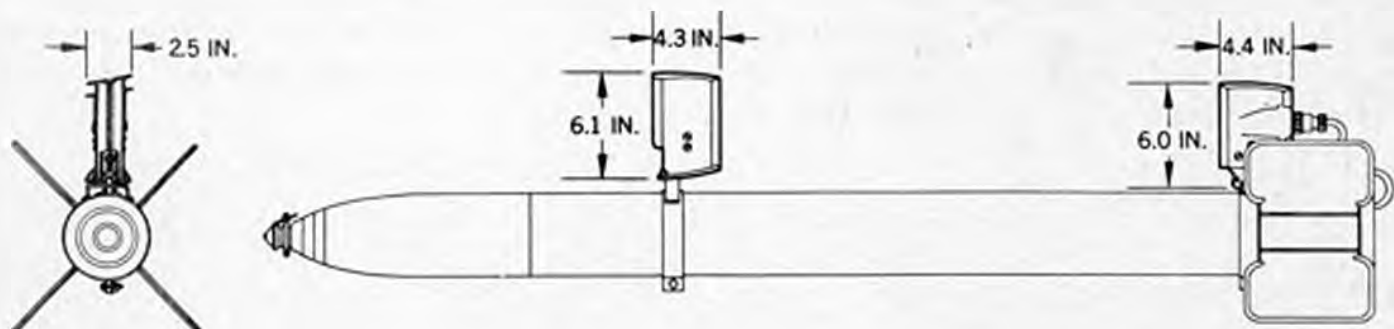
List of drawings none
 General arrangement BuAer Dr 9227
 Adapters Aircraft Rocket Launcher Mk 6 Mod 0
 Publication references BuAer TO 137-44



FORWARD POST



AFTER POST



Aircraft Rocket Launcher Mk 5 Mod 2

AIRCRAFT ROCKET LAUNCHER MARK 5 MOD 3

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 5 Mod 3 is an electrically fired weapon for launching fin-stabilized rockets from all types of aircraft. It is identical with Aircraft Rocket Launcher Mk 5 Mod 2 except that the latch on the after post is replaced by a lanyard-operated, spring-loaded, pin-type latch. Aircraft Rocket Launcher Mk 5 Mod 3 is replaced by Aircraft Rocket Launcher Mk 9 All Mods.

Aircraft Rocket Launcher Mk 5 Mod 3 is a zero-length launcher that consists of a forward and after post. These aluminum alloy posts are mounted in sets of four on base plates that are

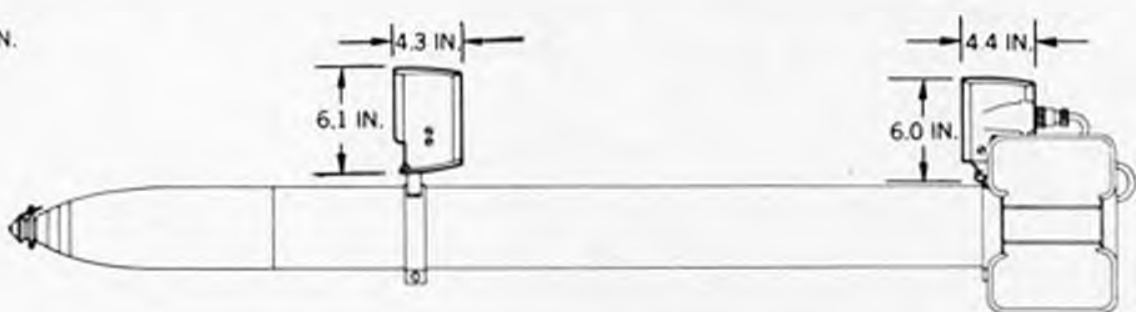
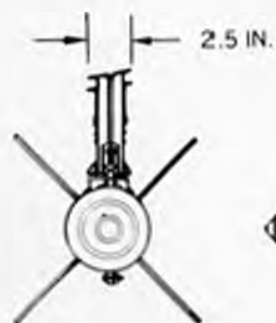
attached to the under surface of the wing. The forward post has a slotted guide that receives the button-type suspension lug near the forward end of the rocket; the rocket is secured to the after post by a tunnel lug.

The launcher is loaded by sliding the rocket lugs into the forward and after posts. An arming control is built into the forward post. Electrical connection for firing is made by a socket in the after post. When the rocket is fired, the electrical connector of the rocket is blown to the rear. This action causes the lanyard to trip the latch, and the rocket is free to move off the guide.

DATA

Number of guides 1
 Type forward firing; forward and after post
 Launcher ammunition:-
 3.5-inch and 5.0-inch aircraft rockets having
 a button-type suspension lug forward and
 a tunnel lug aft, with 35.3-inch spacing
 Weight:-
 Less ammunition (set of four launchers), lb 30
 Loaded (set of four launchers)
 With 3.5-inch Rocket, lb 250
 With 5.0-inch Rocket (5.0-inch Motor), lb 580
 Major dimensions:-
 Forward post
 Length, in. 4.3
 Width, in. 2.5

Major dimensions (cont)
 Depth, in. 6.1
 After post
 Length, in. 4.4
 Width, in. 2.6
 Depth, in. 6.0
 Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
 Design references:-
 List of drawings none
 General arrangement (Latch) BuAer Dr 9281
 Adapters Aircraft Rocket Launcher Mk 6 Mod 0
 Publication references BuAer TO 137-44



Aircraft Rocket Launcher Mk 5 Mod 3

AIRCRAFT ROCKET LAUNCHER MARK 5 MOD 4

IN SERVICE

DESCRIPTION

Aircraft Rocket Launcher Mk 5 Mod 4 is an electrically fired weapon for launching fin-stabilized rockets from all types of aircraft. It is identical with Aircraft Rocket Launchers Mk 5 Mods 2 and 3 except that the latch is a lanyard release type in which the retaining pawl is held in position by a cam.

Aircraft Rocket Launcher Mk 5 Mod 4 is a zero-length launcher that consists of a forward and after post. These aluminum alloy posts are mounted in sets of four on base plates that are attached to the under surface of the wing. The

forward post has a slotted guide that receives the button-type suspension lug near the forward end of the rocket; the rocket is secured to the after post by a tunnel lug.

The launcher is loaded by sliding the rocket lugs into the forward and after posts. An arming control is built into the forward post. Electrical connection for firing is made by a socket in the after post. When the rocket is fired, the electrical connector of the rocket is blown to the rear. This action causes the lanyard to trip the latch, and the rocket is free to move off the guide.

DATA

Number of guides 1
Type forward firing; forward and after post
Launcher ammunition:-

3.5-inch and 5.0-inch aircraft rockets having
a button-type suspension lug forward and
a tunnel lug aft, with 35.3-inch spacing

Weight:-

Less ammunition (set of four launchers), lb 30
Loaded (set of four launchers)
With 3.5-inch Rocket, lb 250
With 5.0-inch Rocket (5.0-inch Motor), lb 580

Major dimensions:-

Forward post
Length, in. 4.3
Width, in. 2.5

Major dimensions (cont)

Depth, in. 6.1
After post
Length, in. 4.4
Width, in. 2.6
Depth, in. 6.0

Firing data:-

Type electric
Launcher capacity, rounds 1
Firing interval single fire

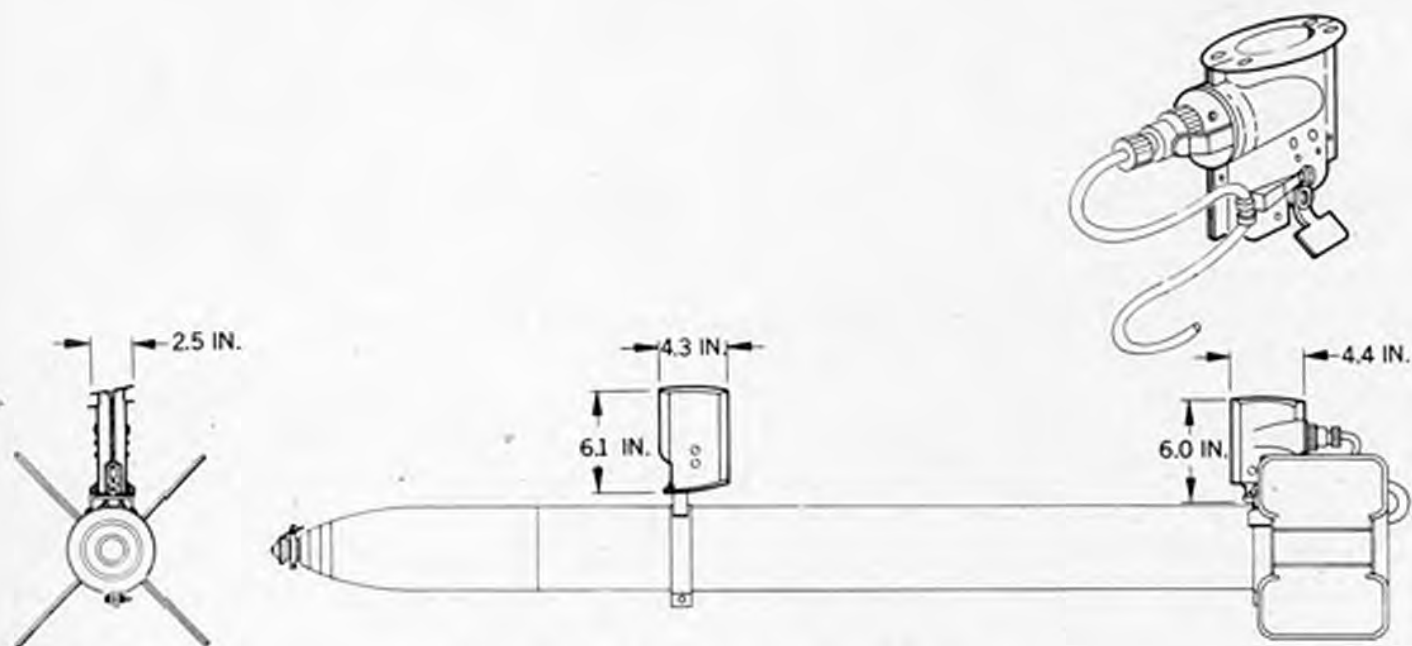
Design references:-

List of drawings none
General arrangement none

Adapters Aircraft Rocket Launcher Mk 6 Mod 0

Publication references:-

BuAer Aircraft Armament Bulletin.. No. 33,3/30/45



Aircraft Rocket Launcher Mk 5 Mod 4

AIRCRAFT ROCKET LAUNCHER "GRUMMAN TYPE ZERO LENGTH"

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher "Grumman Type Zero Length" is an electrically fired weapon for launching fin-stabilized rockets from early model F6F aircraft. The launcher is replaced by Aircraft Rocket Launcher Mk 9.

The launcher consists of a forward and after post, mounted on the under surface of the wing. The forward post has a shear-wire retaining latch and an AN-A2 bomb arming control. The bomb arming control is clamped around the upper portion of the post. A rocket is attached to the forward post by a slotted guide that receives the button-type suspension lug near the forward end of the rocket. The rocket is attached to the after

post by a slotted clamp that engages two of the rocket tail fins. The after lug band of the rocket is not used in this launcher. Fin suspension on the after post must be modified by adding an adapter before 5.0-inch aircraft rockets can be used.

The launcher is loaded by sliding the tail fins into the after post fin suspension, and the forward button-type lug into the forward post guide. The forward lug of the rocket is secured by the shear-wire latch when the aircraft is in flight. When the launcher is fired, the wire is sheared, and the latch is released.

DATA

Number of guides 1
Type forward firing; forward and after post

Launcher ammunition:-

3.5-inch and 5.0-inch fin-stabilized aircraft rockets having a forward button-type suspension lug 42.6 inches from after end of rocket

Weight:-

Less ammunition (set of four launchers), lb 31
Loaded (set of four launchers)
With 3.5-inch Rocket, lb 251
With 5.0-inch Rocket (5.0-inch Motor), lb 581

Major dimensions:-

Forward post
Length, in. 4.0*

Major Dimensions (cont)

Width, in. 3.0*
Depth, in. 5.0*
After post
Length, in. 3.0*
Width, in. 3.0*
Depth, in. 6.0*

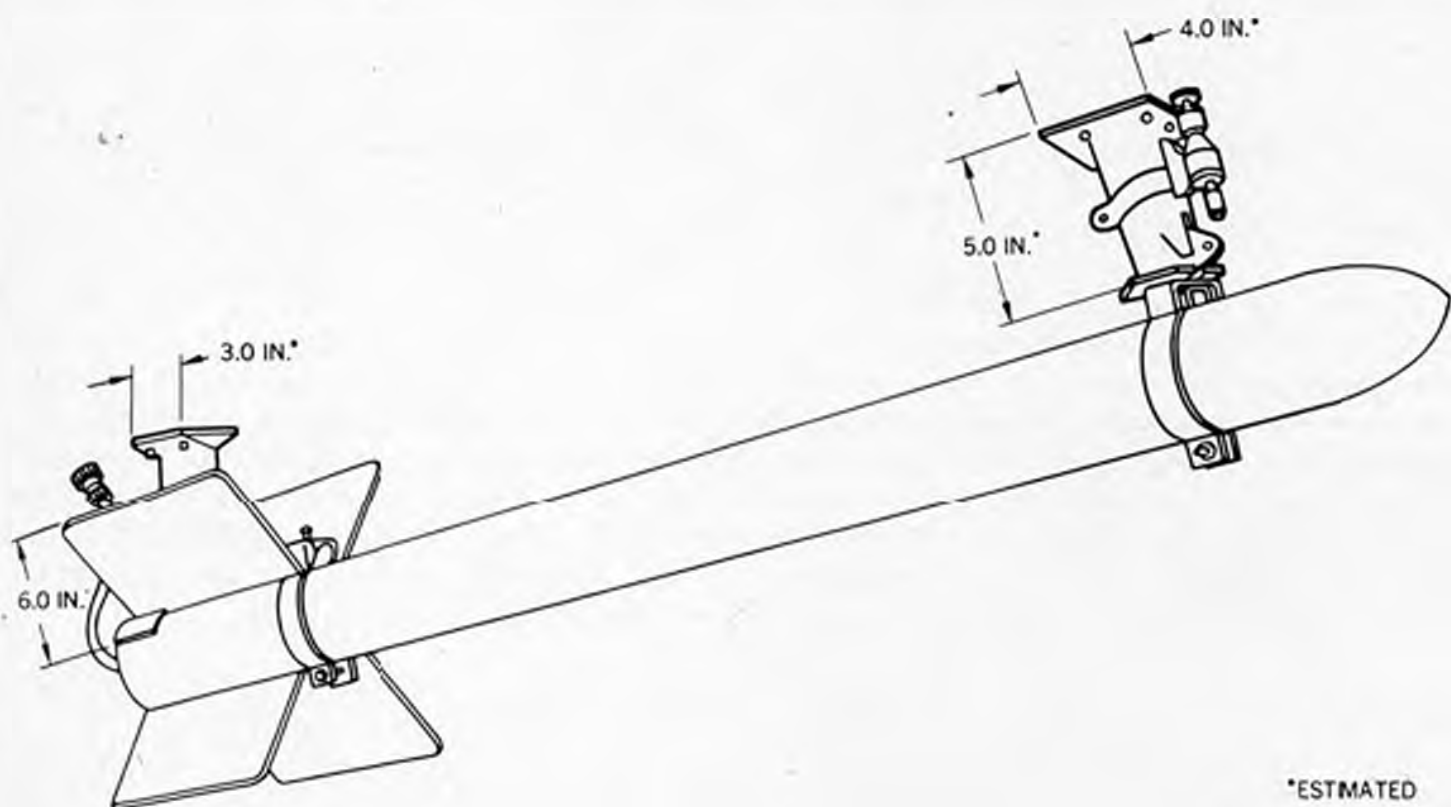
Firing data:-

Type electric
Launcher capacity, rounds 1
Firing interval single fire

Design references:-

List of drawings none
General arrangement none
Adapters and attachments fin suspension adapter
Publication references none

*Estimated



Aircraft Rocket Launcher "Grumman Type Zero Length"

AIRCRAFT ROCKET LAUNCHER MARK 9 MOD 0

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 9 Mod 0 is an electrically fired weapon for launching fin-stabilized rockets from aircraft.

Aircraft Rocket Launcher Mk 9 Mod 0 consists of a streamlined pylon that is attached to the under surface of the wing by a hangar bolt. The pylon has a slotted guide that receives the two button-type suspension lugs of the rocket. A retaining latch in the guide secures the after

rocket lug and prevents the rocket from being dislodged while the aircraft is in flight.

The launcher is loaded by sliding the rocket suspension lugs into the guide. Electrical connection for firing is made by a receptacle in the wing. A lanyard is attached to the electrical connector and to the latch hook. When the launcher is fired, the electrical connector is blown aft. This action causes the lanyard to trip the latch and release the rocket.

DATA

Number of guides 1
 Type forward firing; pylon

Launcher ammunition:-

3.5-inch and 5.0-inch aircraft rockets having two button-type suspension lugs with 6.0-inch spacing

Weight:-

Less ammunition, lb 4
 Loaded
 With 3.5-inch Rocket, lb 59
 With 5.0-inch Rocket (5.0-inch Motor), lb 142

Major dimensions:-

Length, in. 9.5
 Width, in. 2.4
 Depth, in. 5.8

Firing data:-

Type electric
 Launcher capacity, rounds 1
 Firing interval single fire

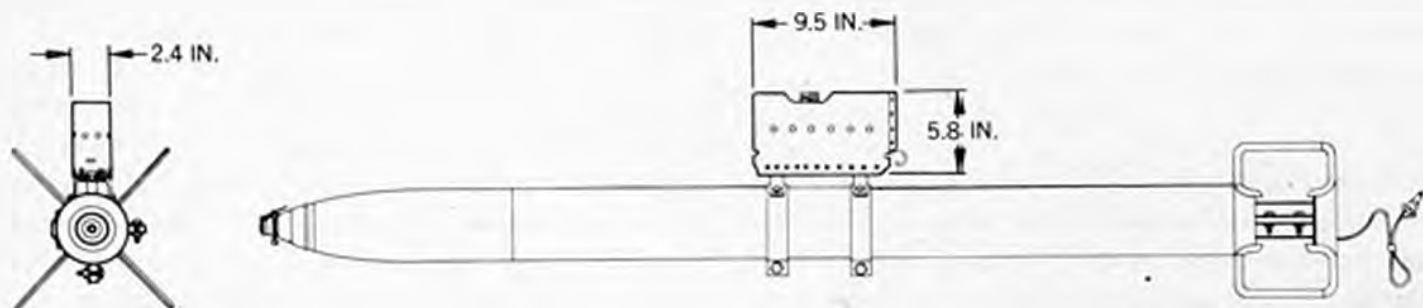
Design references:-

List of drawings none
 General arrangement BuAer Dr 9301

Adapters Aircraft Rocket Launcher Mk 6 Mod 0

Publication references:-

BuAer Catalogue CO-AN 11-75-A-1-M



Aircraft Rocket Launcher Mk 9 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 9 MOD 1

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 9 Mod 1 is an electrically fired weapon for launching fin-stabilized rockets from aircraft.

Aircraft Rocket Launcher Mk 9 Mod 1 consists of a streamlined pylon that is attached to the under surface of the wing by a hangar bolt. The pylon has a slotted guide that receives the two button-type suspension lugs of the rocket. A retaining latch in the guide secures the after rocket lug and prevents the rocket from being dislodged while the aircraft is in flight. The

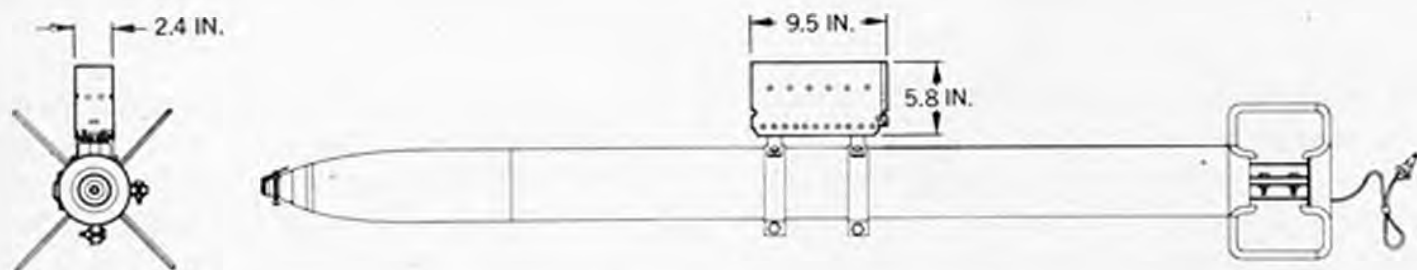
launcher is identical with Aircraft Rocket Launcher Mk 9 Mod 0 except that the latch is a toggle-type instead of the spring-loaded plunger type.

The launcher is loaded by sliding the rocket suspension lugs into the guide; electrical connection for firing is made by a receptacle in the wing. A lanyard is connected between the electrical connector and the latch lever. When the launcher is fired, the electrical connector is blown aft and causes the lanyard to trip the latch and release the rocket.

DATA

Number of guides 1
 Type forward firing; pylon
 Launcher ammunition:-
 3.5-inch and 5.0-inch aircraft rockets having
 two button-type suspension lugs with 6.0-
 inch spacing
 Weight:-
 Less ammunition, lb 4
 Loaded
 With 3.5-inch Rocket, lb 59
 With 5.0-inch Rocket (5.0-inch Motor), lb 142
 Major dimensions:-
 Length, in. 9.5

Major Dimensions (cont)
 Width, in. 2.4
 Depth, in. 5.8
 Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
 Design references:-
 List of drawings none
 General arrangement BuAer Dr 9301C
 Adapters Aircraft Rocket Launcher Mk 6 Mod 0
 Publication references:-
 BuAer Catalogue CO-AN 11-75-A-1-M



Aircraft Rocket Launcher Mk 9 Mod 1

AIRCRAFT ROCKET LAUNCHER MARK 9 MOD 2

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 9 Mod 2 is an electrically fired weapon for launching fin-stabilized rockets from aircraft. The launcher is identical with Aircraft Rocket Launchers Mk 9 Mods 0 and 1 except that it has an electrically operated latch.

Aircraft Rocket Launcher Mk 9 Mod 2 consists of a streamlined pylon that is attached to the under surface of the wing by a hanger bolt. The pylon has a slotted guide that receives the two

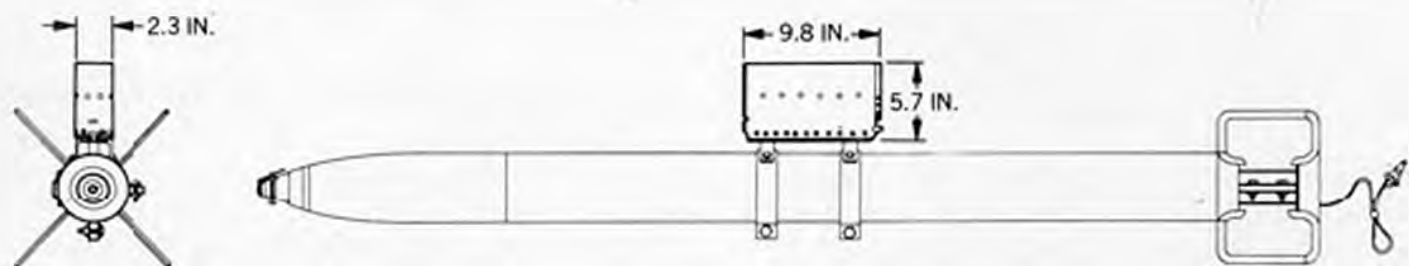
button-type suspension lugs of the rocket. A retaining latch in the guide secures the after rocket lug and prevents the rocket from being dislodged while the aircraft is in flight.

The launcher is loaded by sliding the rocket suspension lugs into the guide. Electrical connection for firing is made by a receptacle in the wing. The latch that secures the after rocket lug is electrically released when the launcher is fired.

DATA

Number of guides 1
Type forward firing; pylon
Launcher ammunition:-
 3.5-inch and 5.0-inch aircraft rockets having
 two button-type suspension lugs with 6.0-
 inch spacing
Weight:-
 Less ammunition, lb 4
 Loaded
 With 3.5-inch Rocket, lb 59
 With 5.0-inch Rocket (5.0-inch Motor), lb 142
Major dimensions:-
 Length, in. 9.5

Major Dimensions (cont)
 Width, in. 2.4
 Depth, in. 5.8
Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
Design references:-
 List of drawings BuAer 50A64
 General arrangement BuAer Dr 50A64D90
Adapters Aircraft Rocket Launcher Mk 6 Mod 0
Publication references:-
 BuAer Catalogue CO-AN 11-75-A-1-M



Aircraft Rocket Launcher Mk 9 Mod 2

AIRCRAFT ROCKET LAUNCHER MARK 9 MOD 3

IN SERVICE

DESCRIPTION

Aircraft Rocket Launcher Mk 9 Mod 3 is an electrically fired weapon for launching fin-stabilized rockets from aircraft. Except for the shape of the pylon this launcher is similar to Aircraft Rocket Launcher Mk 9 Mod 2.

Aircraft Rocket Launcher Mk 9 Mod 3 consists of a streamlined pylon that is attached to the under surface of the wing by a hangar bolt. Unlike earlier models of Aircraft Rocket Launcher Mk 9, the upper and lower edges of this launcher are not parallel. The pylon has a slotted guide

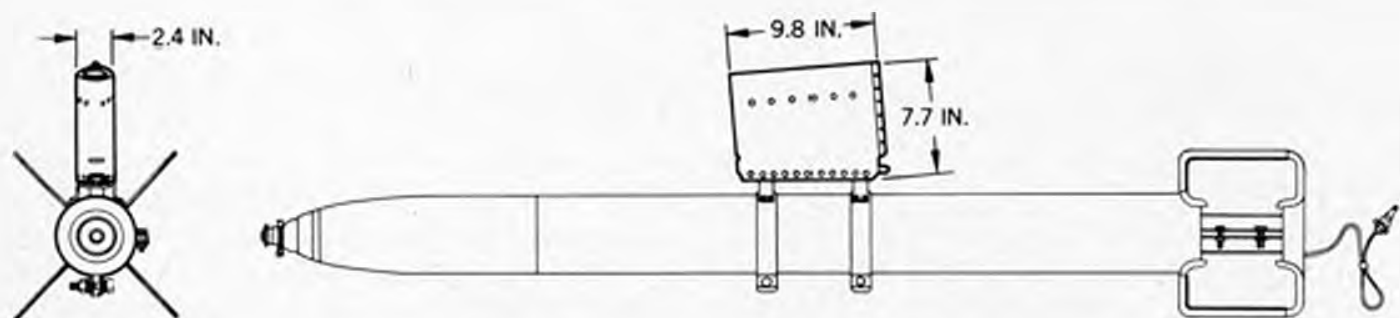
that receives the two button-type suspension lugs of the rocket. A retaining latch in the guide secures the after rocket lug, and prevents the rocket from being dislodged while the aircraft is in flight.

The launcher is loaded by sliding the rocket suspension lugs into the guide. Electrical connection for firing is made by a receptacle in the wing. The latch that secures the after rocket lug is electrically released when the launcher is fired.

DATA

Number of guides 1
 Type forward firing; pylon
 Launcher ammunition:-
 3.5-inch and 5.0-inch aircraft rockets having
 two button-type suspension lugs with 6.0-
 inch spacing
 Weight:-
 Less ammunition, lb 4
 Loaded
 With 3.5-inch Rocket, lb 59
 With 5.0-inch Rocket (5.0-inch Motor), lb 142

Major dimensions:-
 Length, in. 9.8
 Width, in. 2.4
 Depth, in. 7.7
 Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
 Design references:-
 List of drawings BuAer 50A65
 General arrangement BuAer Dr 50A65010
 Adapters Aircraft Rocket Launcher Mk 6 Mod 0
 Publication references none



Aircraft Rocket Launcher Mk 9 Mod 3

AIRCRAFT ROCKET LAUNCHER AERO 14A

IN SERVICE

DESCRIPTION

Aircraft Rocket Launcher Aero 14A is an electrically operated weapon used for either launching rockets or dropping bombs from aircraft.

The launcher consists of an elongated pylon that contains two bomb-suspension hooks (14-inch type) and a forward and after rocket support. The forward support is a slotted guide that receives the button-type suspension lug near the forward end of the rocket; the after support is a projecting hook that engages the tunnel lug near the after end of the rocket. The rocket supports are mounted so that the rocket is clear of the bomb-suspension hooks when the launcher is loaded.

When Aircraft Rocket Launcher Aero 14A is to be used as a rocket launcher, the rocket is loaded on the launcher by sliding the lugs into the forward and after rocket supports. Electrical connection for firing is made by a receptacle in

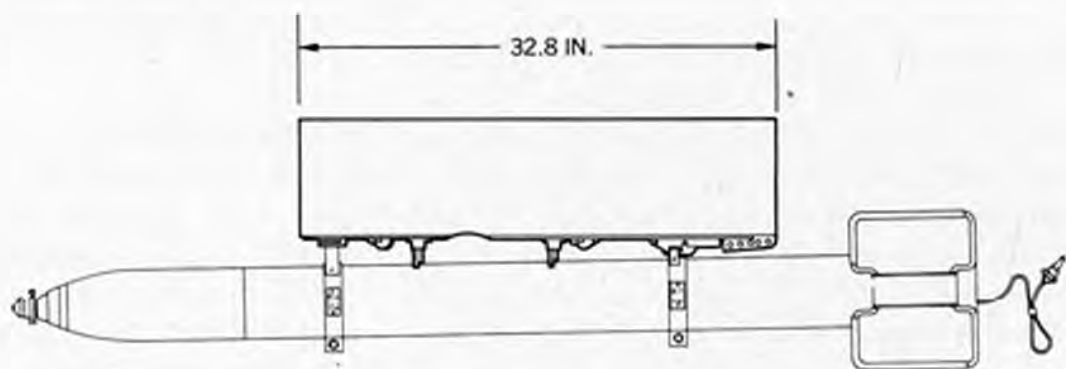
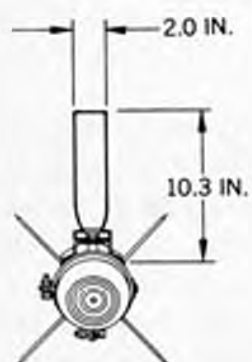
the after end of the launcher. When the launcher is loaded, a spring-loaded latch in the after end of the guide secures the rocket tunnel lug, and prevents the rocket from being dislodged before it is to be fired. When the launcher is fired, the spring-loaded latch is retracted by a solenoid, and the rocket is released.

When HVAR ammunition is used in this launcher, conventional electrical tail-arming is used, but when HPAG ammunition is used, arming is accomplished through the forward suspension lug of the rocket. On HPAG rockets, the forward button-type suspension lug is insulated by a frangible plastic coating. To arm the rocket, the bomb release mechanism must be operated. When this mechanism is actuated, a hammer strikes the forward suspension lug of the rocket and breaks the insulating plastic. The rocket is then armed by an electrical impulse transmitted through the hammer.

DATA

Number of guides 1
 Type forward firing; pylon
 Launcher ammunition:-
 5.0-inch aircraft rockets with 3.25-inch
 Rocket Motors Mk 16 Mod 5 or 5.0-inch
 Rocket Motors Mk 10 Mod 5
 Weight:-
 Less ammunition, lb 15
 Loaded (with 5.0-inch Rocket Motor), lb 150
 Major dimensions:-
 Length, in. 32.8

Major dimensions (cont)
 Width, in. 2.0
 Depth, in. 10.3
 Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
 Design references:-
 List of drawings BuAer 50A70
 General arrangement BuAer Dr 50A70R103
 Adapters Aircraft Rocket Launcher Aero 1A
 Publication references none



Aircraft Rocket Launcher Aero 14A

AIRCRAFT ROCKET LAUNCHER AERO 14B

IN SERVICE

DESCRIPTION

Aircraft Rocket Launcher Aero 14B is an electrically operated weapon used for either launching rockets or dropping bombs from aircraft. The launcher differs from Aircraft Rocket Launcher Aero 14A in that minor internal modifications have been made to strengthen and improve the weapon.

The launcher consists of an elongated pylon that contains two bomb-suspension hooks (14-inch type) and a forward and after rocket support. The forward support is a slotted guide that receives the button-type suspension lug near the forward end of the rocket; the after support is a projecting hook that engages the tunnel lug near the after end of the rocket. The rocket supports are mounted so that the rocket is clear of the bomb-suspension hooks when the launcher is loaded.

When Aircraft Rocket Launcher Aero 14B is to be used as a rocket launcher, the rocket is loaded

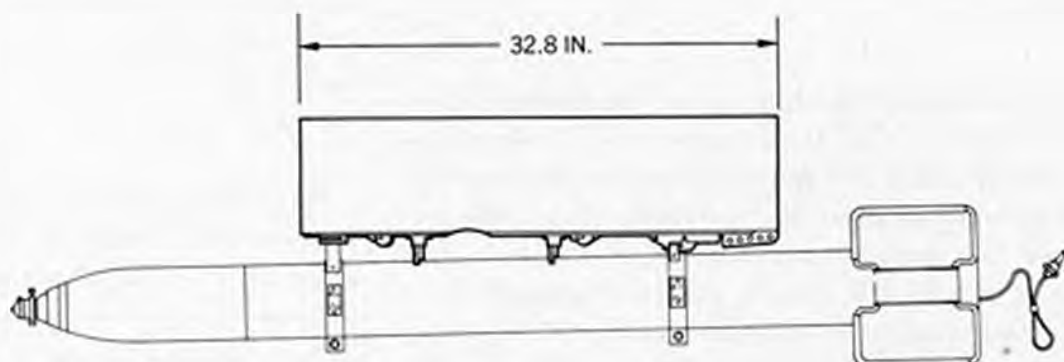
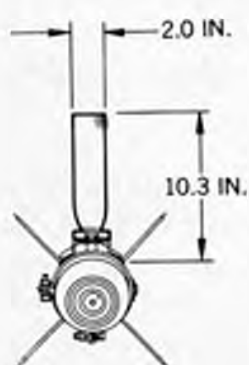
on the launcher by sliding the lugs into the forward and after rocket supports. Electrical connection for firing is made by a receptacle in the after end of the launcher. When the launcher is loaded, a spring-loaded latch in the after end of the guide secures the rocket tunnel lug, and prevents the rocket from being dislodged before it is to be fired. When the launcher is fired, the spring-loaded latch is retracted by a solenoid, and the rocket is released.

When HVAR ammunition is used in this launcher, conventional electrical tail-arming is used, but when HPAG ammunition is used, arming is accomplished through the forward suspension lug of the rocket. On HPAG rockets, the forward button-type suspension lug is insulated by a frangible plastic coating. To arm the rocket, the bomb release mechanism must be operated. When this mechanism is actuated, a hammer strikes the forward suspension lug of the rocket and breaks the insulating plastic. The rocket is then armed by an electrical impulse transmitted through the hammer.

DATA

Number of guides 1
Type forward firing; pylon
Launcher ammunition:-
 5.0-inch aircraft rockets with
 3.25-inch Rocket Motors Mk 16 Mod 5 or
 5.0-inch Rocket Motors Mk 10 Mod 5
Weight:-
 Less ammunition, lb 15
 Loaded (with 5.0-inch Rocket Motor), lb 150
Major dimensions:-
 Length, in. 32.8
 Width, in. 2.0

Major dimensions (cont)
 Depth, in. 10.3
Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
Design references:-
 List of drawings none; see BuAer Dr 52A318R1
 General arrangement BuAer Dr 52A318R1
Adapters Aircraft Rocket Launcher Aero 1A
Publication references none



Aircraft Rocket Launcher Aero 143

AIRCRAFT ROCKET LAUNCHER MARK 7 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Aircraft Rocket Launcher Mk 7 Mod 0 is an electrically fired weapon for launching spin-stabilized rockets from aircraft. The launcher is enclosed in an aerodynamically faired container that is attached to bomb racks of the Mk 51 type.

The launcher consists of a cluster of seven rocket tubes that is encircled by a metal cylinder. Six of the rocket tubes are arranged in a circular pattern; the seventh tube is in the center. The cylindrical housing is faired into cones at each

end, and the tube ends conform to the shape of the housing. The ends of the tubes are covered with paper tape to reduce air resistance in flight. When the rockets are fired, the tape is ruptured.

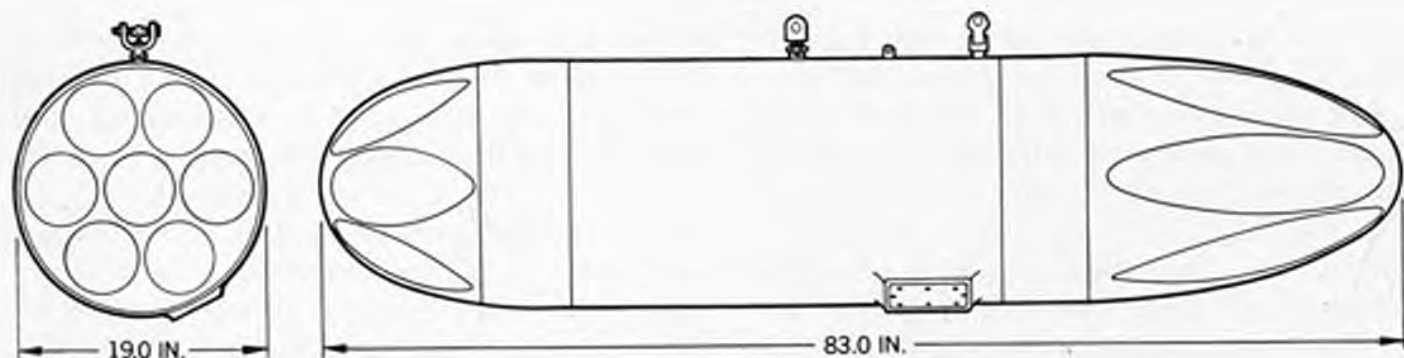
The launcher has a timing device that enables the rockets to be fired individually or in ripple salvo. When the launcher is installed on a bomb rack, an electrical cable on the upper surface of the launcher is connected to an exterior receptacle of the airplane.

DATA

Number of guides 7
Type..... forward firing; tubular
Launcher ammunition:-
 5.0-inch GASR rockets
Weight:-
 Less ammunition, lb140*
 Loaded, lb440*
Major dimensions:-
 Length, in. 83.0
 Diameter, in. 19.0

Firing data:-
 Type electric
 Launcher capacity, rounds 7
 Firing interval, sec 0.05*
Design references:-
 List of drawings none
 General arrangement Dr 509190 (unsigned)
Adapters and attachments none
Publication references:-
 Operation..... Harvey Machine Co. report HMC-239

* Estimated



Aircraft Rocket Launcher Mk 7 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 7 MOD 1

DEVELOPMENT DISCONTINUED

DESCRIPTION

Aircraft Rocket Launcher Mk 7 Mod 1 is an electrically fired weapon for launching spin-stabilized rockets from aircraft. The launcher is enclosed in an aerodynamically faired container that is attached to bomb racks of the Mk 51 type. The launcher is identical with Aircraft Rocket Launcher Mk 7 Mod 0 except for minor dimensional changes.

The launcher consists of a cluster of seven rocket tubes that is encircled by a metal cylinder. Six of the rocket tubes are arranged in a circular pattern; the seventh tube is in the center. The

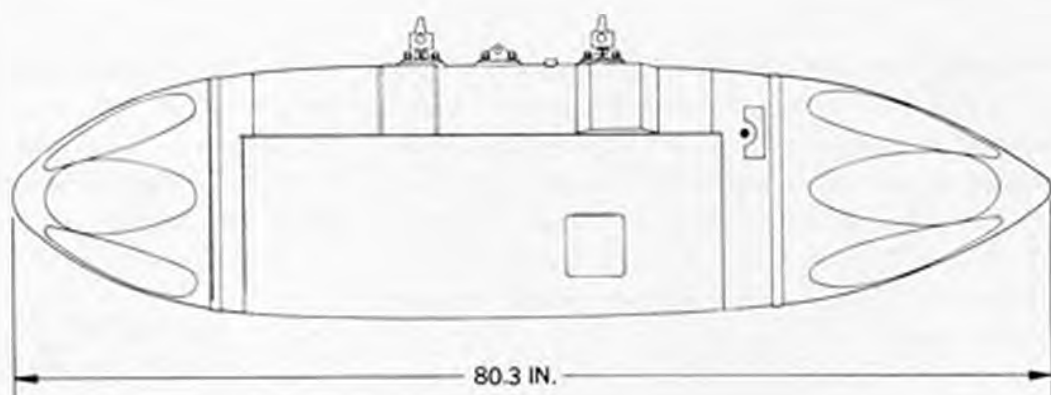
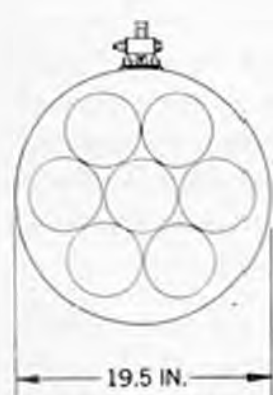
cylindrical housing is faired into cones at each end, and the tube ends conform to the shape of the housing. The ends of the tubes are covered with paper tape to reduce air resistance in flight. When the rockets are fired, the tape is ruptured.

The launcher has a timing device that enables the rockets to be fired individually or in ripple salvo. When the launcher is installed on a bomb rack, an electrical cable on the upper surface of the launcher is connected to an exterior receptacle of the airplane.

DATA

Number of guides 7
Type forward firing; tubular
Launcher ammunition:-
 5.0-inch spin-stabilized (GASR) rockets
Weight:-
 Less ammunition, lb 142.7
 Loaded, lb 441.2
Major dimensions:-
 Length, in. 80.3
 Diameter, in. 19.5

Firing data:-
 Type electric
 Launcher capacity, rounds 7
 Firing interval (ripple salvo), sec 0.05
Design references:-
 List of drawings none
 General arrangement Dr 555722 (unsigned)
Adapters and attachments none
Publication references:-
 Operation Harvey Machine Co. report HMC-239



Aircraft Rocket Launcher Mk 7 Mod 1

AIRCRAFT ROCKET LAUNCHER MARK 8 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Aircraft Rocket Launcher Mk 8 Mod 0 is an electrically fired weapon for launching spin-stabilized rockets from within the nose of aircraft. The launcher has a single launching tube fed from a revolving drum that carries five rockets.

The launcher has a guide tube, a drum, and an exhaust assembly. The guide is a cylindrical tube attached to the forward end of the launcher housing. The drum, which consists of five

rocket-bearing tubes mounted in a circle, rotates within the launcher housing. The drum is mounted so that the rocket tubes successively become aligned with the guide tube. The exhaust assembly is mounted on the after end of the housing in line with the guide tube. When a rocket is fired, the rocket blast is deflected downward and out of the aircraft by the exhaust assembly. The launcher contains an electrical device that permits the rockets to be fired singly or in ripple salvo.

DATA

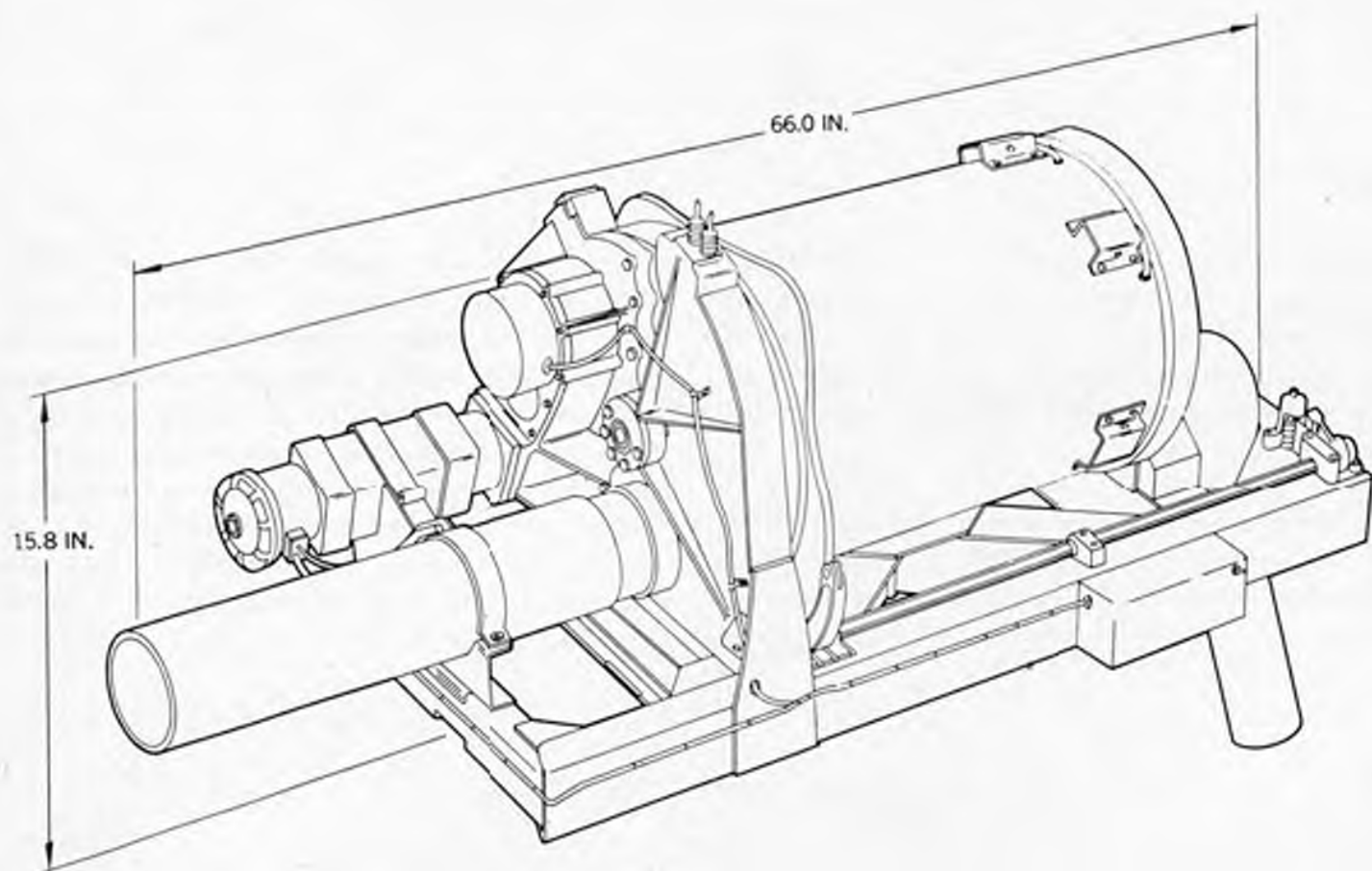
Number of guides 1
Type forward firing; enclosed
Launcher ammunition:-
5.0-inch spin-stabilized (GASR) rockets
Weight:-
Less ammunition, lb 293
Loaded, lb 506
Major dimensions:-
Length (launcher base), in. 49.4
Length (barrel and exhaust extrusion), in. 66.0
Width, in. 21.6
Depth, in. 15.8

Firing data:-
Type electric
Launcher capacity, rounds 5
Firing interval, sec 0.5

Design references:-
List of drawings none
General arrangement none

Adapters and attachments none

Publication references:-
Test report USNAOTS No. EOD-9



Aircraft Rocket Launcher Mk 8 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 10 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Aircraft Rocket Launcher Mark 10 Mod 0 is an electrically fired weapon for launching spin-stabilized rockets from within the fuselage of an airplane.

The launcher has a flat-feed magazine within

each wing, a shuttle section, and a power unit. The shuttle section, which is mounted between the two magazines, contains the firing chamber and the dud ejection mechanism. Each magazine contains ten rockets; the power unit feeds the rockets into the firing chamber from alternate magazines.

DATA

Number of guides 1
Type forward firing; tubular
Launcher ammunition:-
 5.0-inch spin-stabilized (GASR) rockets
Weight:-
 Less ammunition, lb *
 Loaded, lb *
Major dimensions:-
 Length, in. 120**
 Width, in. 30**
 Depth, in. 8**

Firing data:-

Type electric
Launcher capacity, rounds 20
Firing interval, sec 0.2

Design references:-

List of drawings none
General arrangement none

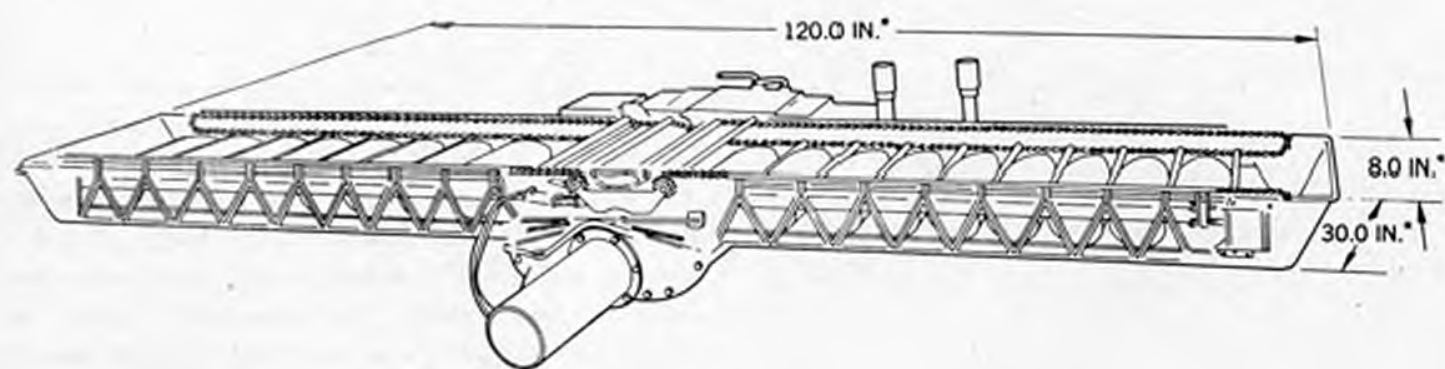
Adapters and attachments none

Publication references:-

Test report USNAOTS Tech. Memo 4525-12

*Data not available

**Estimated



* ESTIMATED

Aircraft Rocket Launcher Mk 10 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 11 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Aircraft Rocket Launcher Mk 11 Mod 0 was proposed as an electrically fired automatic weapon for launching spin-stabilized rockets from the nose of jet fighter aircraft. It was an attempt to change the shape of an earlier design study launcher to install it in the nose of jet aircraft.

The launcher is mounted in the aircraft nose and consists of two sets of channels and two

launcher tubes, or guides. The channels, which serve as a rocket magazine, are curved to conform to the nose of the aircraft. Rockets are carried in the channels with their long axes parallel to the longitudinal axis of the aircraft. The launcher tubes are parallel to each other and project forward out of the bottom of the nose of the aircraft. Rockets are fed from the channels into the launcher tubes, where they are electrically fired.

DATA

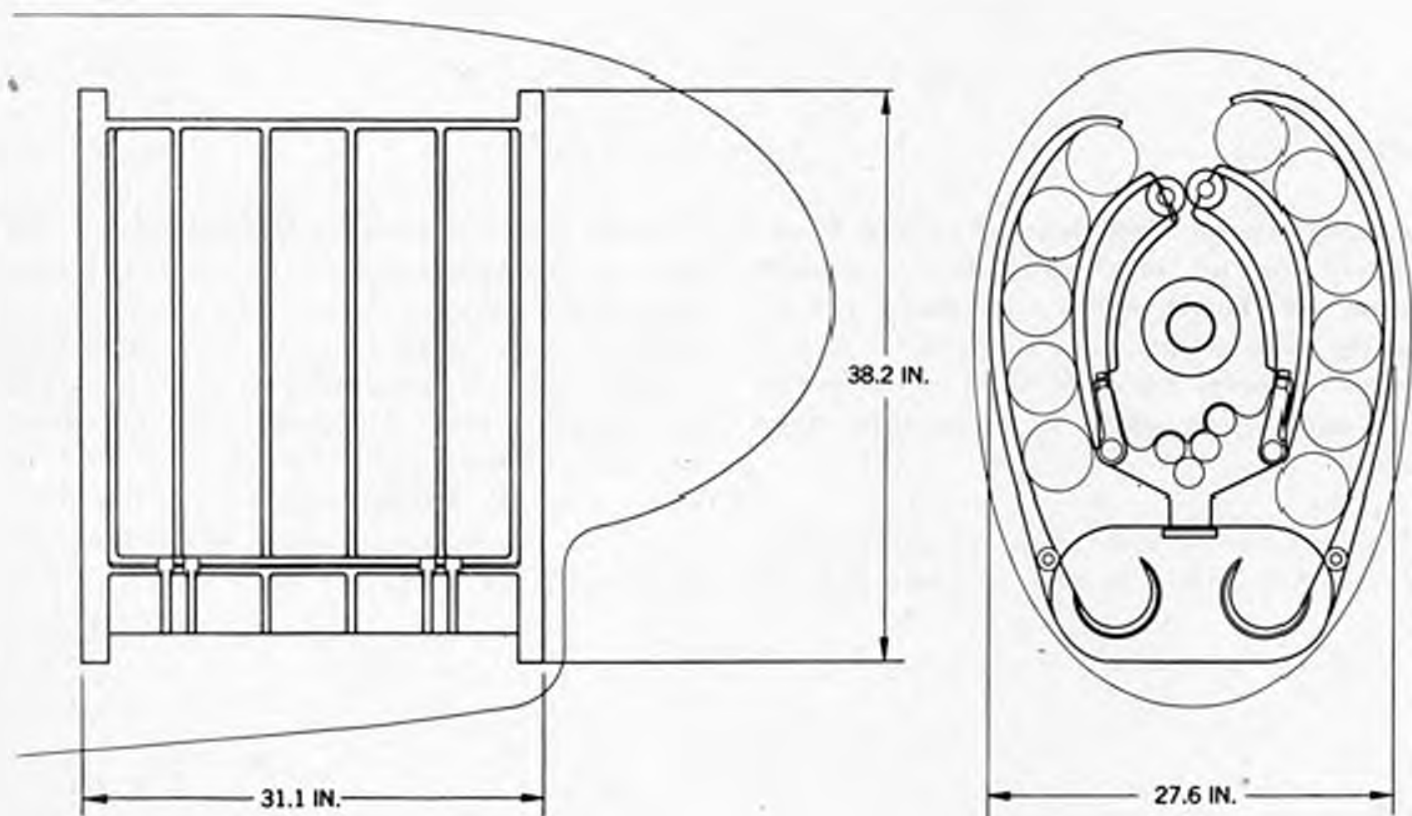
Number of guides..... 2
Type.....forward firing; tubular
Launcher ammunition:-
5.0-inch spin-stabilized (GASR) rockets
Weight:-
Less ammunition, lb *
Loaded, lb *
Major dimensions:-
Length, in. 31.1
Width, in. 27.6
Depth, in. 38.2

Firing data:-
Type.....electric
Launcher capacity, rounds 13
Firing interval, sec *

Design references:-
List of drawings none
General arrangement none

Adapters and attachments none
Publication references none

*Data not available; development discontinued



Aircraft Rocket Launcher Mk 11 Mod 0

AIRCRAFT ROCKET LAUNCHER MARK 1 MOD 0

OBSOLETE

DESCRIPTION

Aircraft Rocket Launcher Mk 1 Mod 0 is an electrically fired weapon for launching rockets rearward from aircraft. These launchers are mounted in groups of 12 under each wing or eight beneath the fuselage.

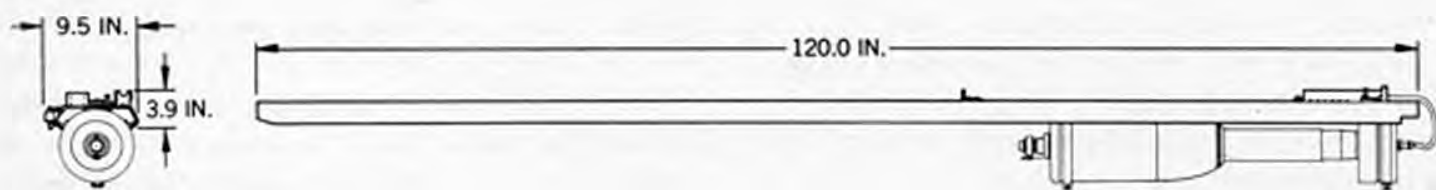
The launcher consists of an aluminum alloy trough with a rocket retaining latch and arming

control. The retaining latch secures the after part of a rocket; the arming control permits a rocket to be fired in armed or safe condition. Special lug bands hold the nose section of a rocket in the trough of the guide. Electrical firing impulse is transmitted to the tail shroud of a rocket through a knife-edge contact in the guide.

DATA

Number of guides 1
 Type aft firing; trough
 Launcher ammunition:-
 7.2-inch rockets with special lug bands
 Weight:-
 Less ammunition, lb 17
 Loaded, lb 88
 Major dimensions:-
 Length, in. 120.0
 Width, in. 9.5

Major Dimensions (cont)
 Depth, in. 3.9
 Firing data:-
 Type electric
 Launcher capacity, rounds 1
 Firing interval single fire
 Design references:-
 List of drawings Sk 108735
 General arrangement Dr 375042
 Adapters Aircraft Rocket Launcher Mk 3 Mod 0
 Publication references none



Aircraft Rocket Launcher Mk 1 Mod 0

SECTION 2-B

SURFACE ROCKET LAUNCHERS

A surface rocket launcher is a weapon for launching rockets from land or shipboard. A rocket, which is a missile with an open-ended combustion chamber, is propelled by the escape of high-pressure gases from the combustion chamber.

In rocket terminology, the fuel is called the *propellant*; the housing that contains the propellant and the combustion chamber is known as the *rocket motor*. The pay load of the rocket is contained within the head of the rocket; this head may be an integral part of the motor, or it may be a separate section that is attached prior to firing.

A rocket cannot be controlled once in flight, and consequently it must be launched in such a direction that the rocket trajectory will end at the target. In order to have a predictable trajectory, the rocket must be aerodynamically stable. This stability is accomplished by two means: a rocket that is stabilized by aerodynamic fins is called a *fin stabilized rocket*; a rocket that is stabilized by canting the combustion chamber exhaust nozzles so that the rocket spins rapidly in flight is called a *spin-stabilized rocket*. Spin-stabilized rockets, which have no protruding fins, are well suited for automatic rocket launchers.

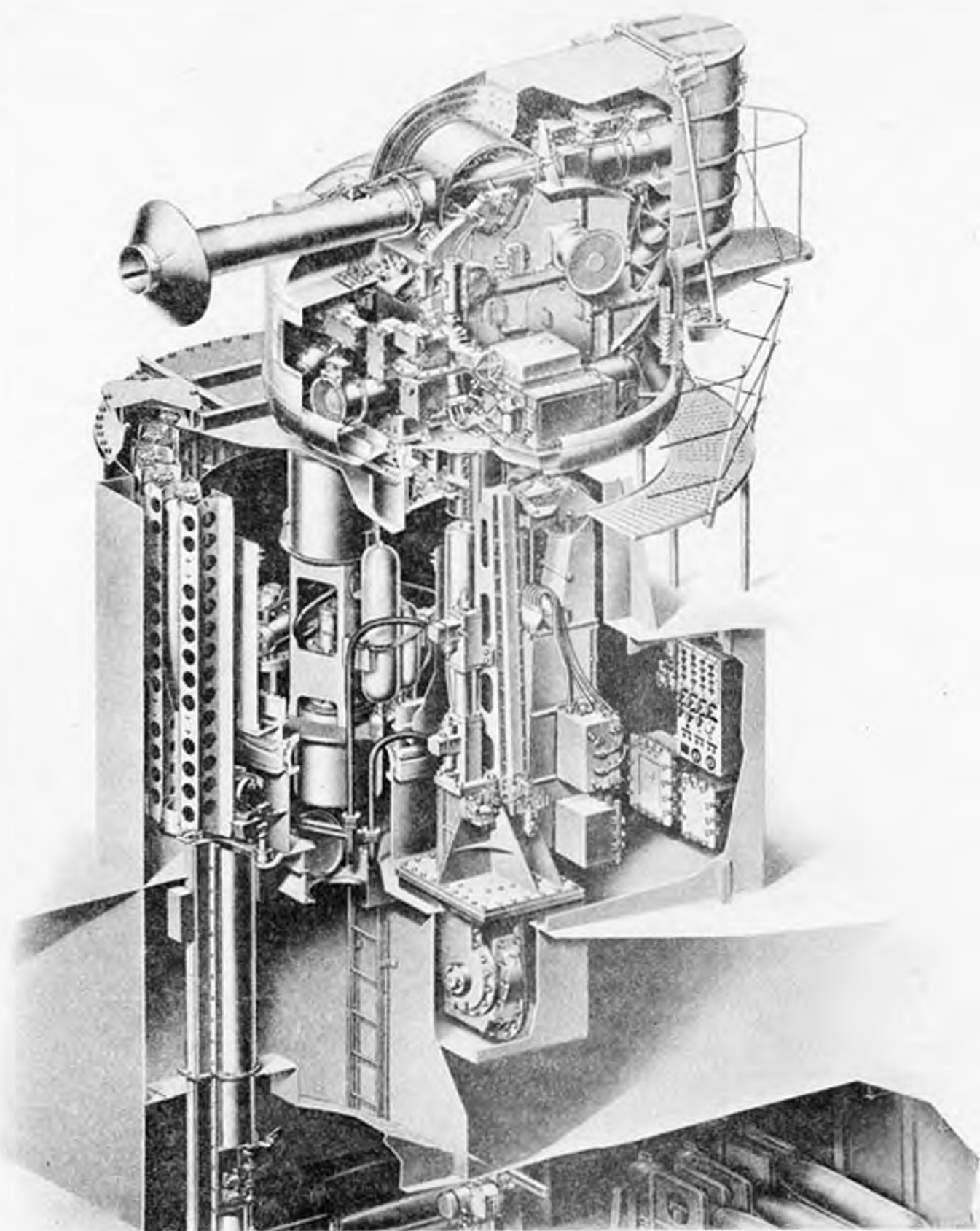
As with aircraft rocket launchers, surface rocket launchers have one outstanding advantage over guns in that they have no recoil. This means that the launcher can be relatively light and small in comparison to the

firepower delivered. As a result, structural and maintenance problems are reduced.

Surface rocket launchers have been designed for a variety of purposes: support of landing troops, high-trajectory fire in rough terrain, off-shore bombardment, saturation bombardment, clearing beach entanglements, launching acoustic countermeasures, and destruction of underwater targets.

Development of these rocket launchers has progressed in complexity from portable rocket-guiding structures with fixed elevation, to automatically loaded and fired launchers with director-controlled elevation and train. From the early types of launchers the path of development has included:

- (1) adding manual settings for train and elevation,
- (2) multiplying the number of guides to increase coverage,
- (3) equipping the weapon with train and elevation power drives,
- (4) supplying a follow-the-pointer system of director control,
- (5) reducing the number of guides used because of increased accuracy,
- (6) establishing a system of automatic firing,
- (7) adding an automatic loading hoist to increase the rate of fire,
- (8) positioning automatically the guide in train and elevation in accordance with director control, and
- (9) applying an influence-type fuze to rockets fired at underwater targets.



Surface Rocket Launcher Mk 108

CONTENTS

2.36-inch Rocket Launchers

Mk	Mod
13	0

2.5-inch Rocket Launchers

Mk	Mod
14	0

3.0-inch Rocket Launchers

Mk	Mod
15	0
37	0
38	0
38	1
39	0
39	1

3.25-inch Rocket Launchers

Mk	Mod
17	0
17	1
17	2
17	3
18	0

3.5-inch Rocket Launchers

Mk	Mod
30	0
31	0
32	0
32	1
33	0
34	0
35	0
36	0
40	0

4.0-inch Rocket Launchers

Mk	Mod
19	0

4.5-inch Rocket Launchers

Page	Mk	Mod	Page
85	1	0	131
	1	1	133
	2	0	135
	2	1	137
87	3	0	139
	3	1	141
	4	0	143
	5	0	145
	6	0	147
	7 (Experimental)		149
89	7	0	151
91	8	0	153
93	8	1	155
95	9	0	157
97	10	0	159
99	11	0	161
	101	2	163

5.0-inch Rocket Launchers

Mk	Mod	Page
50	0	165
50	1	167
51	0	169
51	1	171
52	0	173
101	0	175
101	1	177
102	0	179
105	0	181
106	0	183
107	0	185

7.2-inch Rocket Launchers

Mk	Mod	Page
20	0	187
21	0	189
22	0	191
23	0	193

(continued on next page)

CONTENTS

7.2-inch Rocket Launchers (cont)

Mk	Mod	Page
24 (Experimental)		195
24	1	197
24	2	199
25	0	201
26	0	203
27	0	205

11.75-inch Rocket Launchers

Mk	Mod	Page
70	1	207

12.75-inch Rocket Launchers

Mk	Mod	Page
108	1	209
108	2	211
108	3	213

ROCKET LAUNCHER MARK 13 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 13 Mod 0 is an electrically fired weapon for launching rockets at short ranges from motor gunboats and motor torpedo boats.

The launcher consists of six modified Army Rocket Launchers M1A1 assembled in two groups

of three each mounted on an H-type frame. The rocket guide frame is supported by a tripod base with an elevating arc. This tripod base permits the launcher to be trained and to be moved in limited elevation. The launcher also has a sight for aiming and a blast screen for operator protection.

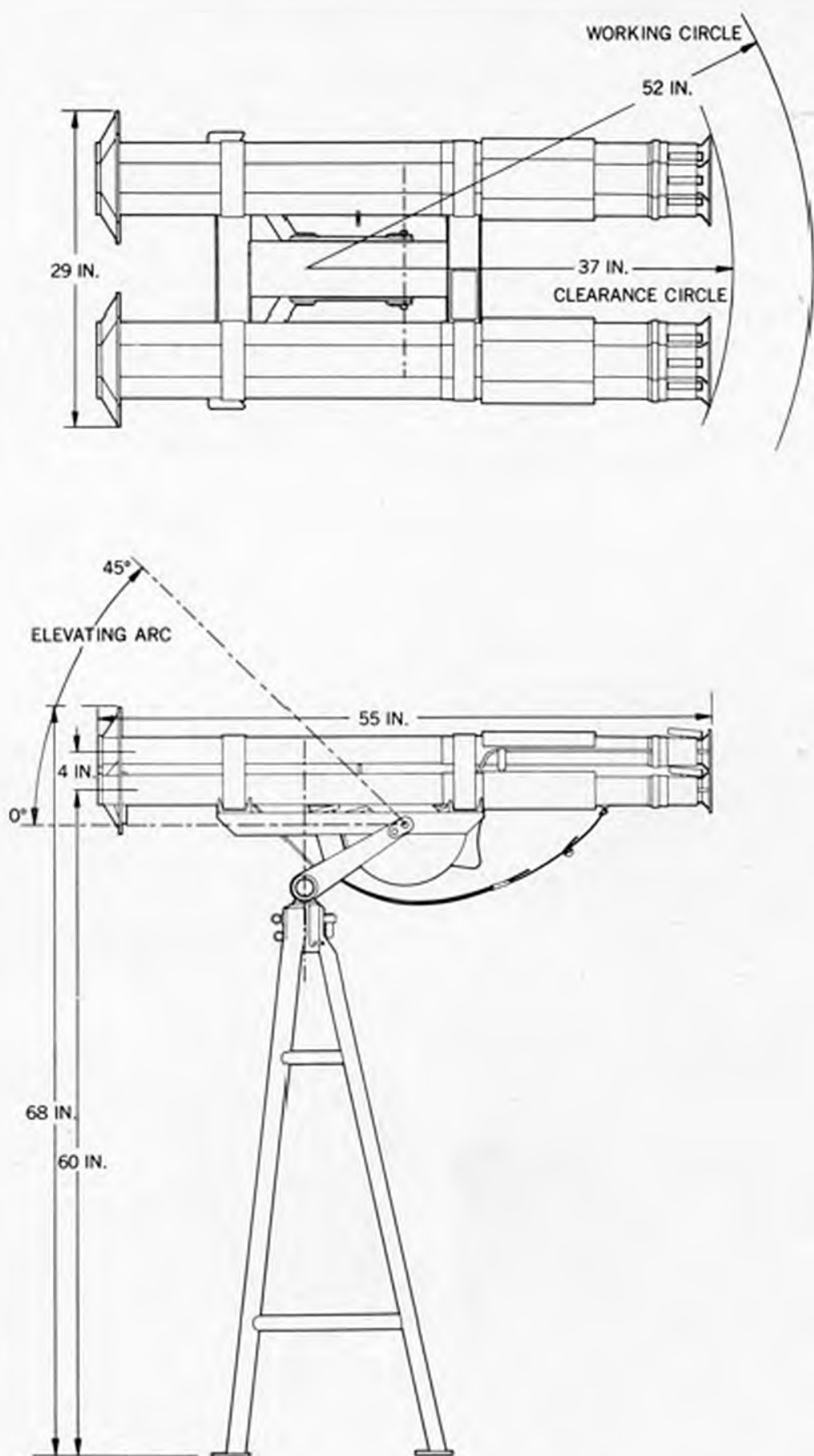
DATA

Number of guides..... 6
 Launcher ammunition:-
 Service
 2.36-inch Rocket, M6A1 (Army)
 Practice
 2.36-inch Rocket, M7A1 (Army)
 Weight:-
 Less ammunition, lb..... 175
 Loaded, lb..... 196
 Major dimensions:-
 Height at maximum elevation, in. 83
 Width, in. 29
 Length, in. 55
 Length of guides, in. 54
 Radius of clearance circle, in. 37
 Radius of working circle, in. 52
 Guide-laying movements:-
 Train unlimited
 Elevation, deg 0 to 45*
 Firing arcs:-
 Same as guide-laying movements
 Training speed..... manually trained
 Elevating speed..... manually elevated

Firing data:-
 Type..... electric
 Voltage at firing pins, v DC..... 5**
 Firing mechanism..... Firing Key Mk 21 Mod 3
 Launcher capacity, rounds 6
 Firing interval, sec..... 0.5**
 Ballistic data:-
 2.36-inch Rocket, M6A1 (Army)
 Weight, lb 3.4
 Range, yd 700
 Velocity (end of burning), fps 270
 Range table none
 Mount data:-
 Components
 Rocket Launcher..... Mk 13 Mod 0
 List of drawings Sk 109063
 General arrangement..... Sk 124693
 Adapters and attachments none
 Publication references:-
 Instruction handbook..... none
 Procurement specifications none
 Installation instructions..... none
 Spare parts list..... none
 Catalog of Navy Material none

*Launcher can be locked at 0 and 45-degree elevations

**Estimated



Rocket Launcher Mk 13 Mod 0

ROCKET LAUNCHER MARK 14 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 14 Mod 0 is an attachment for use with Rocket Launchers Mk 20 Mod 0 and Mk 22 Mod 0. It permits subcaliber ammunition to be used in these launchers for practice purposes.

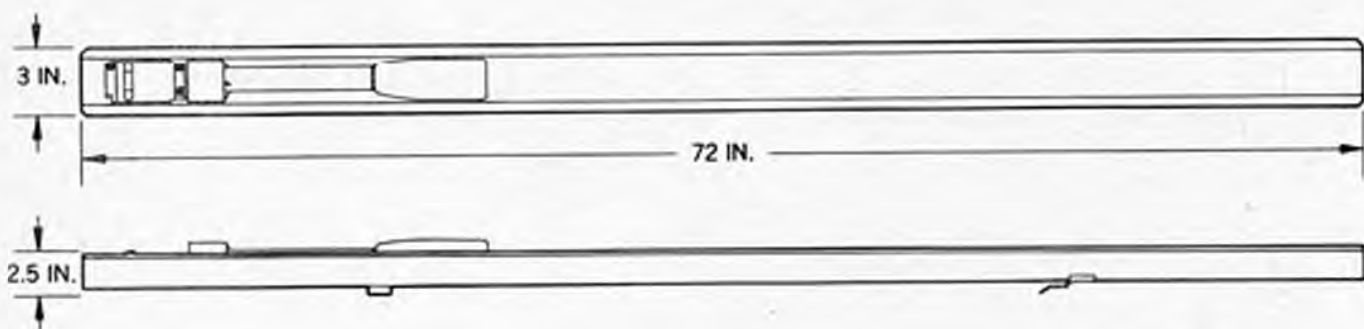
Rocket Launcher Mk 14 Mod 0 consists of a

trough-shaped metal guide that fits into the guides of Rocket Launcher Mk 20 Mod 0 and Rocket Launcher Mk 22 Mod 0. Four Rocket Launchers Mk 14 Mod 0 are required for a complete subcaliber attachment to Rocket Launcher Mk 20 Mod 0, and eight are required for Rocket Launcher Mk 22 Mod 0.

DATA

Number of guides1
 Launcher ammunition:-
 Practice
 2.5-inch Rocket Mk 1 Mod 3
 Weight:-
 Less ammunition, lb12.5
 Loaded, lb21.3
 Major dimensions:-
 Height, in.2.5
 Width, in.3
 Length, in.72
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train same as parent launcher
 Elevation same as parent launcher
 Firing arcs:-
 Same as guide-laying movements
 Training speed non-trainable
 Elevating speed fixed elevation
 Firing data:-
 Type electric
 Voltage at firing pins same as parent launcher

Firing data (cont)
 Firing mechanism same as parent launcher
 Launcher capacity, rounds 1
 Firing interval same as parent launcher
 Ballistic data:-
 2.5-inch Rocket Mk 1 Mod 3
 Weight, lb 8.8
 Range at 45 degrees elevation, yd 290
 Velocity (end of burning), fps 175
 Range table OP 1002 (First Revision)
 Mount data:-
 Components
 Rocket Launcher Mk 14 Mod 0
 List of drawings Sk 108744
 General arrangement Dr 388583
 Adapters and attachments none
 Publication references:-
 Instruction handbook OP 1002 (First Revision)
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 2.5-inch Rockets OP 1002 (First Revision)



Rocket Launcher Mk 14 Mod 0

ROCKET LAUNCHER MARK 15 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 15 Mod 0 is a percussion-fired weapon for launching signal or flare rockets from shipboard.

The single guide of this launcher consists of three equidistant rods joined together by a ring at the top and by a triangular plate at the base. The rocket guide is attached to the base by a swivel arrangement that permits it to be trained through 360 degrees. The base is a three-footed

steel casting with a turntable that contains three training handles.

The firing pin is mounted on a raised cone in the center of the triangular base plate. A firing latch, which is operated by a lanyard, holds the rocket about two inches above the pin. When a knurled safety pin is removed, the latch can be operated. This action permits the rocket to fall onto the firing pin.

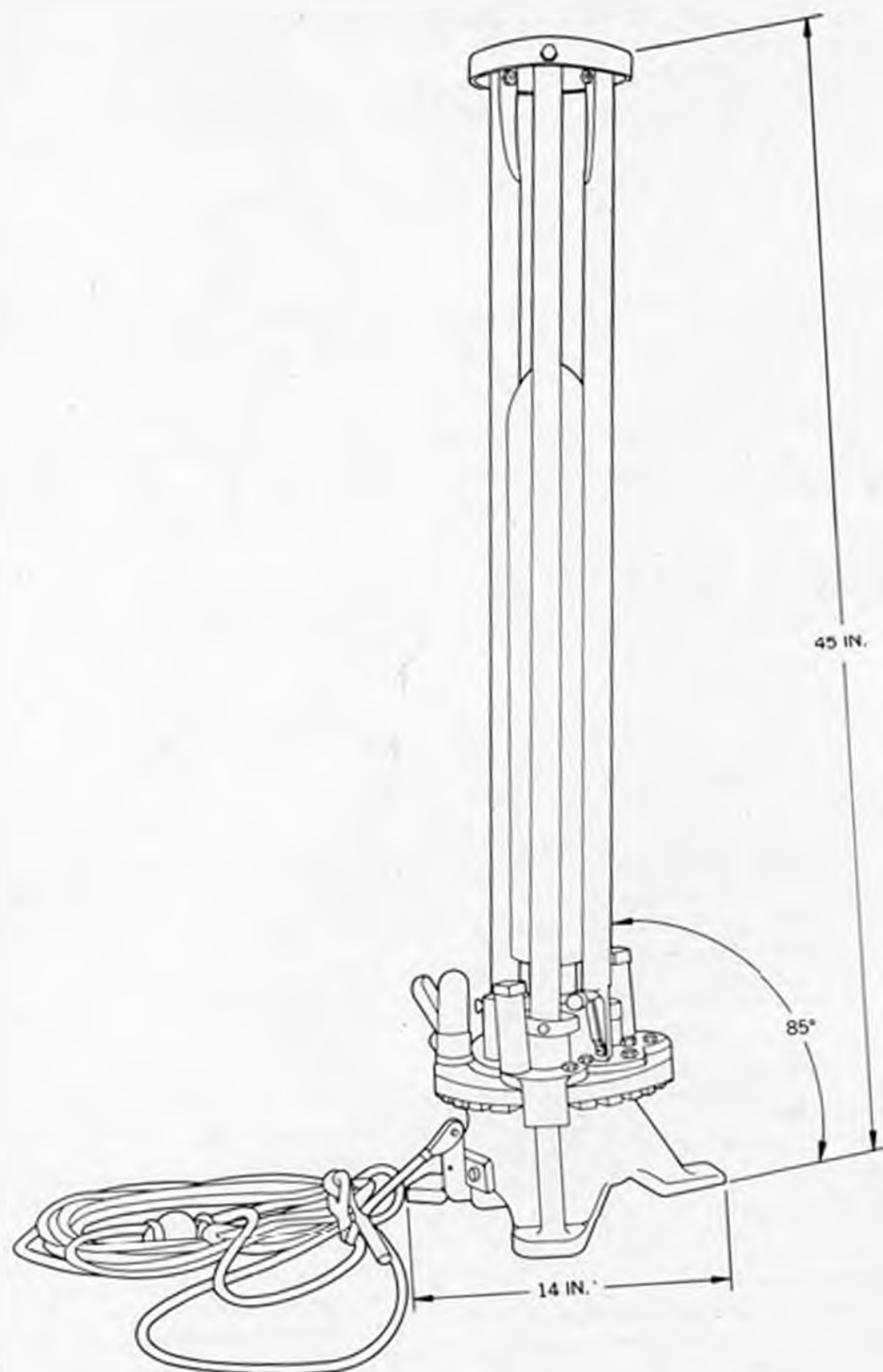
DATA

Number of guides.....1
 Launcher ammunition:-
 Illuminating
 3-inch Rocket (Illuminating) Mk 1
 Weight:-
 Less ammunition, lb.....75
 Loaded, lb.....100*
 Major dimensions:-
 Height, in.45*
 Base diameter, in.14*
 Length of guide, in.40*
 Radius of clearance circle, in.7*
 Radius of working circle, in.7*
 Guide-laying movements:-
 Train, right, deg.....0 to 180
 Train, left, deg.....0 to 180
 Elevation (fixed angle), deg.....85
 Firing arcs:-
 Same as guide-laying movements
 Training speed.....manually trained
 Elevating speed.....fixed elevation
 Firing data:-
 Type.....percussion

Firing data (cont)
 Voltage at firing pins.....none
 Firing mechanism.....none
 Launcher capacity, rounds.....1
 Firing interval.....manually reloaded
 Ballistic data:-
 3-inch Rocket (Illuminating) Mk 1
 Weight, lb.....**
 Range, yd.....**
 Velocity (end of burning), fps.....**
 Range table.....**
 Mount data:-
 Components
 Rocket Launcher.....Mk 15 Mod 0
 List of drawings.....not assigned
 General arrangement.....not assigned
 Publication references:-
 Instruction handbook.....none
 Procurement specifications.....OS 3050
 Installation instructions.....none
 Spare parts list.....none
 Catalog of Navy Material.....none
 3-inch Rockets.....none

* Estimated

** Data not available



Rocket Launcher Mk 15 Mod 0

ROCKET LAUNCHER MARK 37 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Rocket Launcher Mk 37 Mod 0 is an electrically fired weapon for launching rocket-powered noisemaker beacons to counter an attack of acoustic homing torpedoes. The launcher was designed to be part of Beacon Launching System Mk 1.

Rocket Launcher Mk 37 Mod 0 consists of a guide assembly mounted on a base frame. The guide assembly has four guide tubes mounted in

two banks of two guides each, and is trunnion-supported at the after end. The forward end of the guide assembly is supported by a crutch that can be inserted into one of four holes in the base frame to vary the elevation of the launcher.

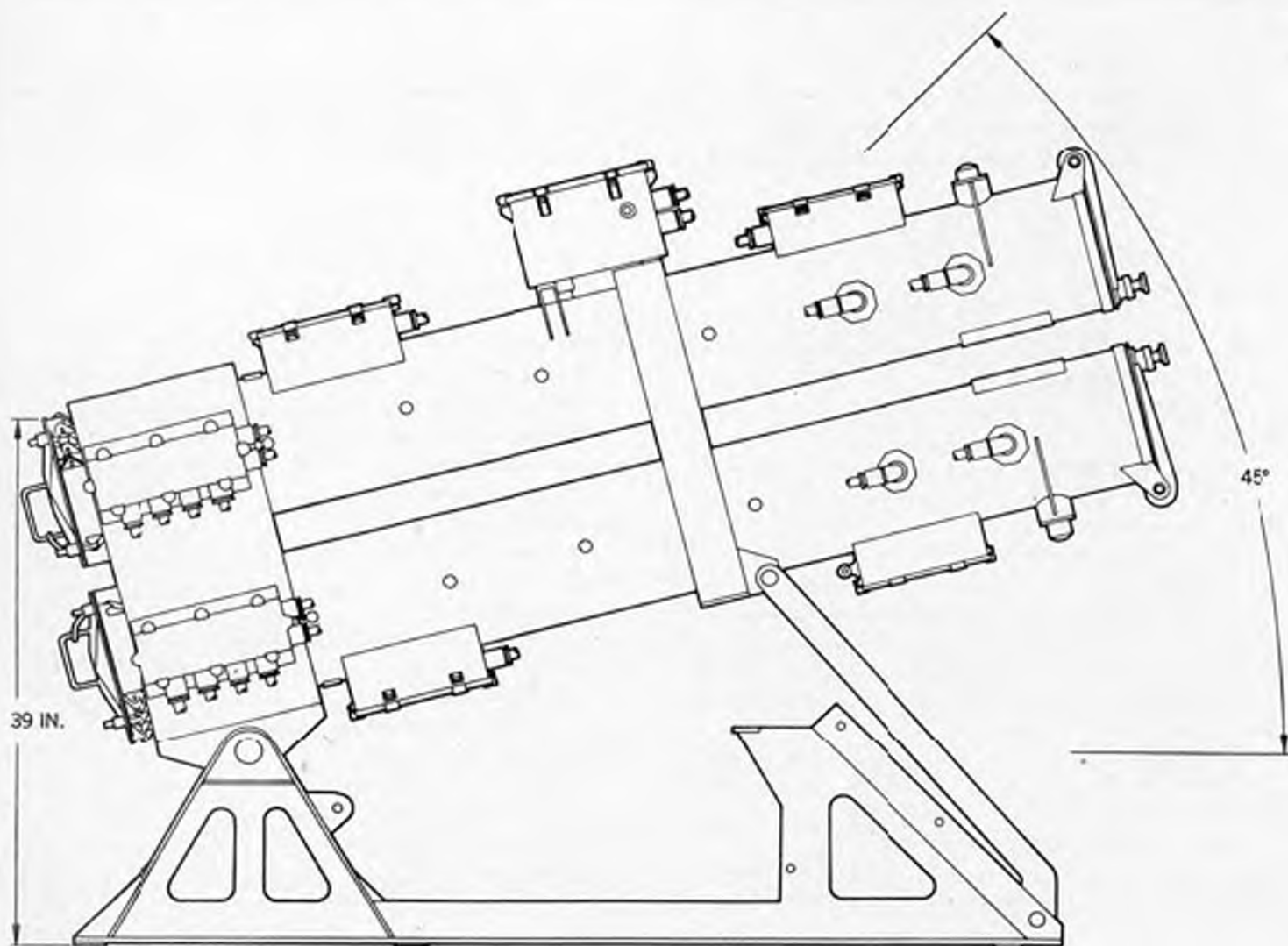
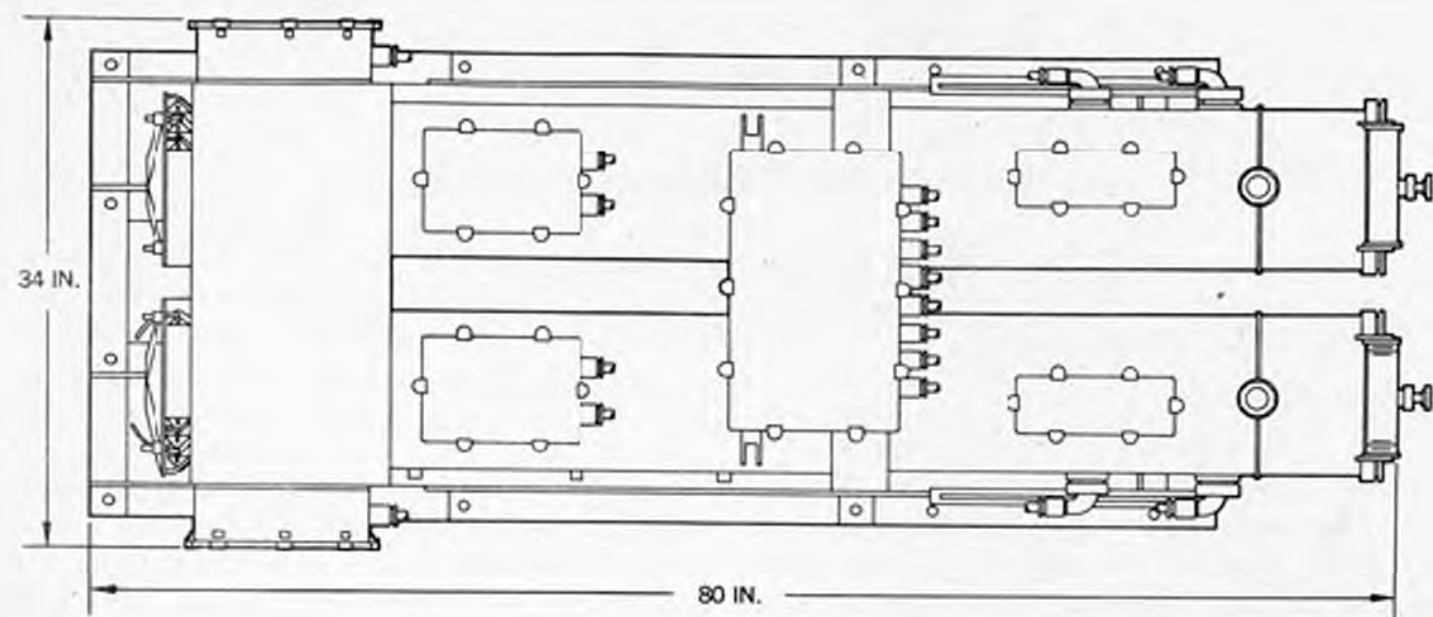
The development of this launcher was discontinued because of the development of Rocket Launchers Mk 38 and 39.

DATA

Number of guides 4
 Launcher ammunition:-
 NAE Beacon*
 Weight:-
 Less ammunition, lb **
 Loaded, lb **
 Major dimensions:-
 Height at maximum elevation, in. 54***
 Width, in. 34***
 Length at minimum elevation, in. 80***
 Length of guide, in. 75
 Radius of clearance circle..... non-trainable
 Radius of working circle..... non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation, deg 0 to 45
 Firing arcs:-
 Same as guide-laying movements
 Training speed non-trainable
 Elevating speed... 15-deg increments, manually elevated

Firing data:-
 Type electric
 Voltage at firing pins **
 Firing mechanism **
 Launcher capacity, rounds..... 4
 Firing interval **
 Ballistic data:-
 Ammunition not designated
 Mount data:-
 Components
 Rocket Launcher..... Mk 37 Mod 0
 List of drawings Sk 255355
 General arrangement Sk 238945
 Adapters and attachments none
 Publication references:-
 Instruction handbook..... none
 Procurement specifications none
 Installation instructions none
 Spare parts list..... none
 Catalog of Navy Material none

*Mk not designated
 **Data not available
 ***Estimated



Rocket Launcher Mk 37 Mod 0

ROCKET LAUNCHER MARK 38 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 38 Mod 0 is an electrically fired weapon for launching rocket-powered noisemaker beacons from destroyer escorts and small carriers. These beacons are used as decoys to counter an attack of acoustic homing torpedoes. Rocket Launcher Mk 38 Mod 0 is one of two launcher types used in Beacon Launching System Mk 3 Mod 0. This system consists of two Rocket Launchers Mk 38 Mod 0 and two Rocket Launchers Mk 39 Mod 0. One Rocket Launcher Mk 38 Mod 0 is mounted on each side of a vessel; the launchers are fixed in train and are mounted to fire directly abeam of the vessel.

Rocket Launcher Mk 38 Mod 0 consists of a guide assembly, screen, sunshade, and frame. The guide assembly has four T-slot guides

mounted side by side on a platform; this platform is part of the frame and is curved at the after end to form a blast deflector. The open end of the blast deflector is covered by a rectangular screen. The sunshade is a square piece of metal that is mounted above the launcher platform so that the rocket motors are protected when the launcher is loaded.

A receptacle mounting plate at the after end of the launcher has four receptacles that receive the rocket motor plugs for firing. These receptacles are joined in a common lead that is connected to the firing circuit input receptacle, which is on the side of the launcher frame near the after end.

DATA

Number of guides 4

Launcher ammunition:-

NAE Beacons Mk 1 Mod 4 with 1.25-inch
Rocket Motor Mk 5 Mod 0

Weight:-

Less ammunition, lb 150*

Loaded, lb 213*

Major dimensions:-

Height, in. 41*

Width, in. 21

Length, in. 50*

Length of guides, in. 26

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation (fixed angle), deg 45

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

Type electric

Voltage at firing pins, v DC 40

Firing data (cont)

Firing mechanism Firing Panel Mk 28 Mod 0
or Firing Panel Mk 11 Mod 3

Launcher capacity, rounds 4

Firing interval, sec 0.5*

Ballistic data:-

NAE Beacon Mk 1 Mod 4 with 1.25-inch
Rocket Motor Mk 5 Mod 0

Weight, lb 15.75

Range, yd 150*

Velocity (end of burning), fps 200*

Range table none

Mount data:-

Components

Rocket Launcher..... Mk 38 Mod 0

List of drawings LD 101584

General arrangement Dr 863340

Adapters and attachments none

Publication references:-

Instruction handbook..... OP 1826

Procurement specifications..... OS 6472

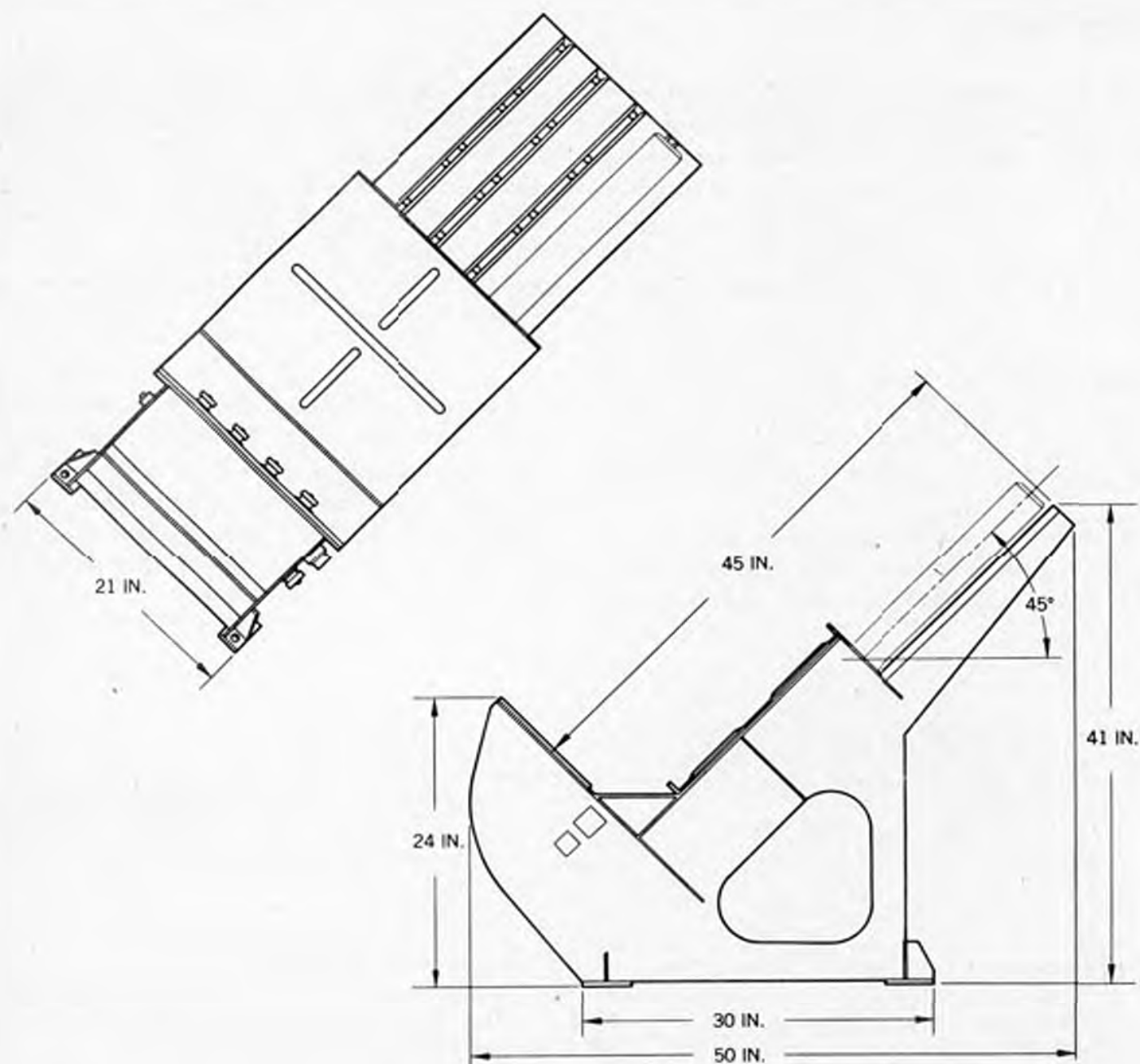
Installation instructions none

Spare parts list.....NAVORD 23206

Catalog of Navy Material..... none

* Estimated

****Salvo (four launchers)**



Rocket Launcher Mk 38 Mod 0

ROCKET LAUNCHER MARK 38 MOD 1

DEVELOPMENT COMPLETE

DESCRIPTION

Rocket Launcher Mk 38 Mod 1 is an electrically fired weapon for launching rocket-powered noisemaker beacons. These beacons are used as decoys to counter an attack of acoustic homing torpedoes. Rocket Launcher Mk 38 Mod 1 is designed to be one of two launcher types used in Beacon Launching System Mk 2 Mod 0. This system consists of two Rocket Launchers Mk 38 Mod 1 and two Rocket Launchers Mk 39 Mod 1. One Rocket Launcher Mk 38 Mod 1 is mounted on each side of a vessel; the launchers are fixed in train and are mounted to fire directly abeam of the vessel.

Rocket Launcher Mk 38 Mod 1 consists of a guide assembly, screen, sunshade, and frame. The guide assembly has four T-slot guides mounted side by side on a platform; this platform is part of the launcher frame and is curved

at the after end to form a blast deflector. The open end of the blast deflector is covered by a rectangular screen. The sunshade is a square piece of metal that is mounted above the launcher platform so that the rocket motors are protected when the launcher is loaded.

A receptacle mounting plate at the after end of the launcher has four receptacles that receive the rocket motor plugs for firing. Rocket Launcher Mk 38 Mod 1 differs from Rocket Launcher Mk 38 Mod 0 in that the common lead from the four receptacles is connected to a connection box mounted on the side of the launcher. In addition, Rocket Launcher Mk 38 Mod 1 has a spring-loaded rocket latch switch in each guide that grasps the after suspension button of the rocket and secures the rocket in position while the ship is rolling and pitching.

DATA

Number of guides 4
 Launcher ammunition:-
 NAE Beacon Mk 1 Mod 4 with 1.25-inch
 Rocket Motor Mk 5 Mod 0
 Weight:-
 Less ammunition, lb 235
 Loaded, lb 298
 Major dimensions:-
 Height, in. 41*
 Width, in. 21
 Length, in. 50*
 Length of guides, in. 26
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation (fixed angle), deg 45
 Firing arcs:-
 Same as guide-laying movements
 Training speed non-trainable
 Elevating speed fixed elevation
 Firing data:-
 Type electric

Firing data (cont)

Voltage at firing pins, v AC 115
 Firing mechanism Firing Panel Mk 30 Mod 0
 Launcher capacity, rounds 4
 Firing interval, sec 0.5**

Ballistic data:-

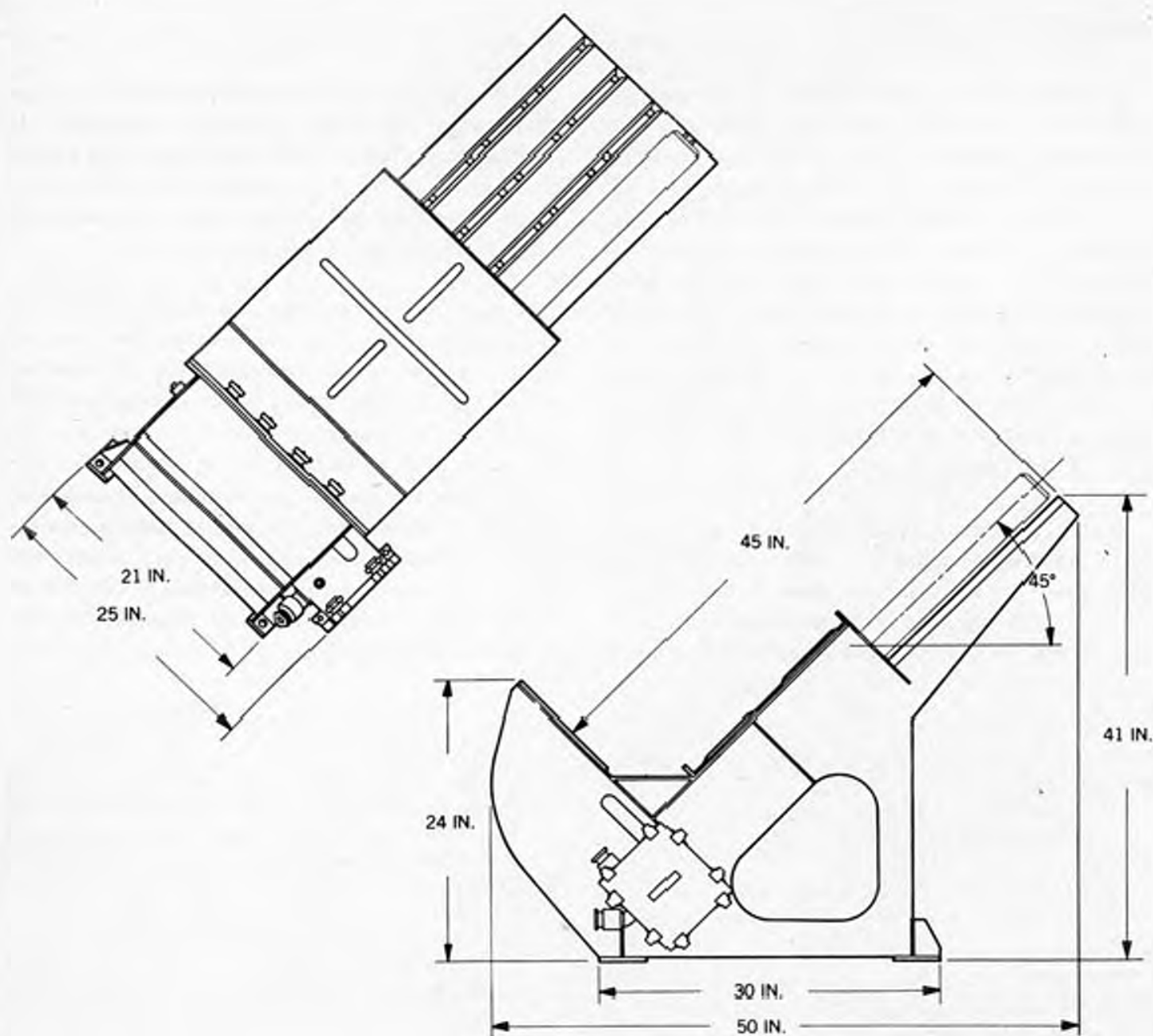
NAE Beacon Mk 1 Mod 4 with 1.25-inch
 Rocket Motor Mk 5 Mod 0
 Weight, lb 15.75
 Range, yd 150*
 Velocity (end of burning), fps 200*
 Range table none

Mount data:-

Components
 Rocket Launcher Mk 38 Mod 1
 List of drawings LD 101599
 General arrangement Dr 863376
 Adapters and attachments none
 Publication references:-
 Instruction handbook OP 1805
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none

*Estimated

**Salvo (four launchers)



Rocket Launcher Mk 38 Mod 1

ROCKET LAUNCHER MARK 39 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 39 Mod 0 is an electrically fired weapon for launching rocket-powered noisemaker beacons from destroyer escorts and small carriers. These beacons are used as decoys to counter an attack of acoustic homing torpedoes. Rocket Launcher Mk 39 Mod 0 is one of two launcher types used in Beacon Launching System Mk 3 Mod 0. This system consists of two Rocket Launchers Mk 39 Mod 0 and two Rocket Launchers Mk 38 Mod 0. One Rocket Launcher Mk 39 Mod 0 is mounted on each side of the ship forward of Rocket Launcher Mk 38 Mod 0. The launchers (Mk 39 Mod 0) are fixed in train at relative bearings of 45 degrees and 315 degrees.

Rocket Launcher Mk 39 Mod 0 consists of a guide assembly, screen, sunshade, and frame. The guide assembly has four T-slot guides mounted side by side on a platform; this platform is part of the frame and is curved at the end to form a blast deflector. The open end of the blast deflector is covered by a rectangular screen.

DATA

Number of guides 4
Launcher ammunition:-
NAE Beacon Mk 1 Mod 5 with 2.25-inch
Rocket Motor Mk 14 Mod 1
Weight:-
Less ammunition, lb 225*
Loaded, lb 327*
Major dimensions:-
Height, in. 30*
Width, in. 34
Length, in. 50*
Length of guides, in. 31
Radius of clearance circle non-trainable
Radius of working circle non-trainable
Guide-laying movements:-
Train non-trainable
Elevation (fixed angle), deg 20
Firing arcs:-
Same as guide-laying movements
Training speed non-trainable
Elevating speed fixed elevation
Firing data:-
Type electric
Voltage at firing pins, v DC 40

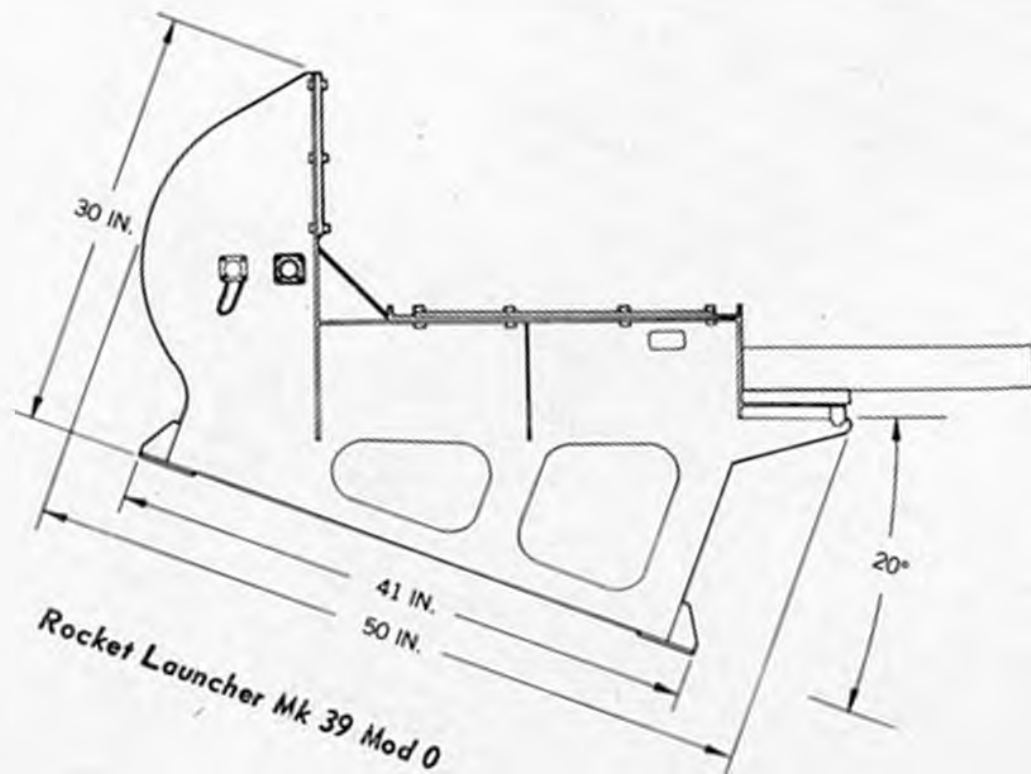
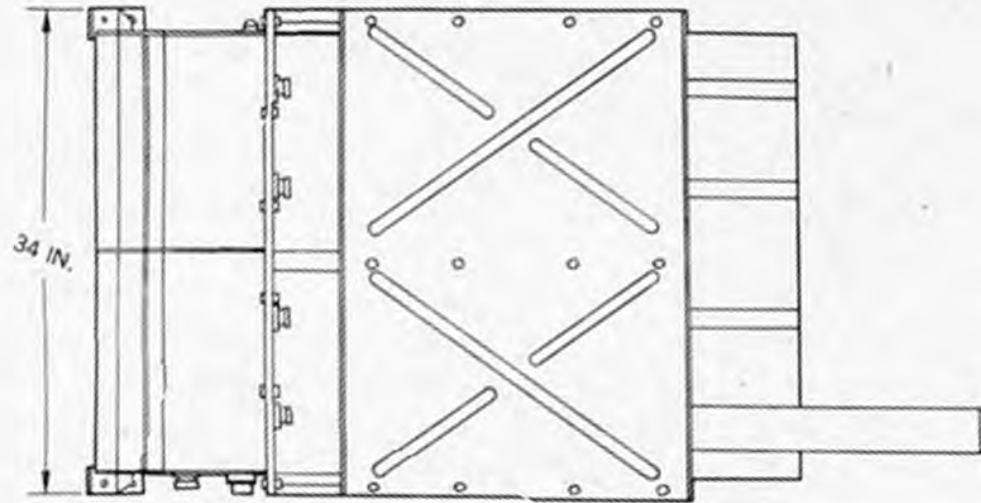
*Estimated

**Salvo (four launchers)

The sunshade is a square piece of metal mounted above the launcher platform so that the rocket motors are protected when the launcher is loaded. Rocket Launcher Mk 39 Mod 0 is similar to Rocket Launcher Mk 38 Mod 0 except that the T-slot guides are raised from the platform by guide rail spacers to accommodate the larger rocket motors used on Rocket Launcher Mk 39, and the launcher is fixed at a lower angle of elevation. In addition, the launching platform of Rocket Launcher Mk 39 Mod 0 is shorter than that of Rocket Launcher Mk 38 Mod 0, so the rockets project out over the end of the launcher when in the loaded condition.

A receptacle mounting plate at the after end of the launcher has four receptacles that receive the rocket motor plugs for firing. These receptacles are joined in a common lead that is connected to the firing circuit input receptacle, which is on the side of the launcher frame near the after end.

Firing data (cont)
Firing mechanism Firing Panel Mk 28 Mod 0
or Firing Panel Mk 11 Mod 3
Launcher capacity, rounds 4
Firing interval, sec 0.5**
Ballistic data:-
NAE Beacon Mk 1 Mod 5 with 2.25-inch
Rocket Motor Mk 14 Mod 1
Weight, lb 25.5
Range, yd 600*
Velocity (end of burning), fps 275*
Range table none
Mount data:-
Components
Rocket Launcher Mk 39 Mod 0
List of drawings LD 101585
General arrangement Dr 863337
Adapters and attachments none
Publication references:-
Instruction handbook OP 1826
Procurement specifications OS 6472
Installation instructions none
Spare parts list NAVORD 23206
Catalog of Navy Material none



ROCKET LAUNCHER MARK 39 MOD 1

DEVELOPMENT COMPLETE

DESCRIPTION

Rocket Launcher Mk 39 Mod 1 is an electrically fired weapon for launching rocket-powered noisemaker beacons. These beacons are used as decoys to counter an attack of acoustic homing torpedoes. Rocket Launcher Mk 39 Mod 1 is designed to be one of two launcher types used in Beacon Launching System Mk 2 Mod 0. This system consists of two Rocket Launchers Mk 39 Mod 1 and two Rocket Launchers Mk 38 Mod 1. One Rocket Launcher Mk 39 Mod 1 is mounted on each side of a ship forward of Rocket Launcher Mk 38 Mod 1. The launchers (Mk 39 Mod 1) are fixed in train at relative bearings of 45 degrees and 315 degrees.

Rocket Launcher Mk 39 Mod 1 consists of a guide assembly, screen, sunshade, and frame. The guide assembly has four T-slot guides mounted side by side on a platform; this platform is part of the frame and is curved at the after end to form a blast deflector. The open end of the blast deflector is covered by a rectangular

screen. The sunshade is a square piece of metal mounted above the launcher platform so that the rocket motors are protected when the launcher is loaded. Rocket Launcher Mk 39 Mod 1 is similar to Rocket Launcher Mk 38 Mod 1 except that the T-slot guides are raised from the launcher platform by guide rail spacers to accommodate the larger rocket motors used on Rocket Launcher Mk 39 Mod 1, and the launcher is fixed at a lower angle of elevation. In addition, the launching platform of Rocket Launcher Mk 39 Mod 1 is shorter than that of Rocket Launcher Mk 38 Mod 1. This causes the rockets to project out over the end of the platform when the launcher is loaded.

A receptacle mounting plate at the after end of the launcher has four receptacles that receive the rocket motor plugs for firing. These four receptacles are joined in a common lead that is accessible through a connection box mounted on the side of the launcher.

DATA

Number of guides 4

Launcher ammunition:-

NAE Beacon Mk 1 Mod 5 with 2.25-inch

Rocket Motor Mk 14 Mod 1

Weight:-

Less ammunition, lb 343

Loaded, lb 445

Major dimensions:-

Height, in. 30*

Width, in. 34

Length, in. 50*

Length of guides, in. 31*

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed fixed elevation

Guide-laying movements:-

Train non-trainable

Elevation (fixed angle), deg 20

Firing data:-

Type electric

Voltage at firing pins, v AC 115

Firing mechanism Firing Panel Mk 30 Mod 0

Launcher capacity, rounds 4

Firing interval, sec 0.5**

Ballistic data:-

NAE Beacon Mk 1 Mod 5 with 2.25-inch

Rocket Motor Mk 14 Mod 1

Weight, lb 25.5

Range, yd 600*

Velocity (end of burning), fps 275*

Range table none

Mount data:-

Components

Rocket Launcher Mk 39 Mod 1

List of drawings LD 101600

General arrangement Dr 863380

Adapters and attachments none

Publication references:-

Instruction handbook OP 1805

Procurement specifications none

Installation instructions none

Spare parts list none

Catalog of Navy Material none

*Estimated

**Salvo (four launchers)

ROCKET LAUNCHER MARK 4 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 4 Mod 0 is a portable, electrically fired weapon for laying rocket barrages from advanced ground positions in difficult terrain.

The launcher consists of a sheet-steel guide supported at both ends. The guide is made in two sections and is held together by cross braces. The support at the forward end of the guide consists of two light legs. These legs are extendable and are provided with cleated circular pads for feet. The support at the after end of

the guide is a hinged steel ground plate. This ground plate serves as a blast shield and is also cleated. The launcher is provided with four metal pegs that are driven through holes in the launcher feet and the ground plate to grip the ground properly. These pegs, together with the firing key, are stowed beneath the rails of the guide. A gravity quadrant is used to indicate range.

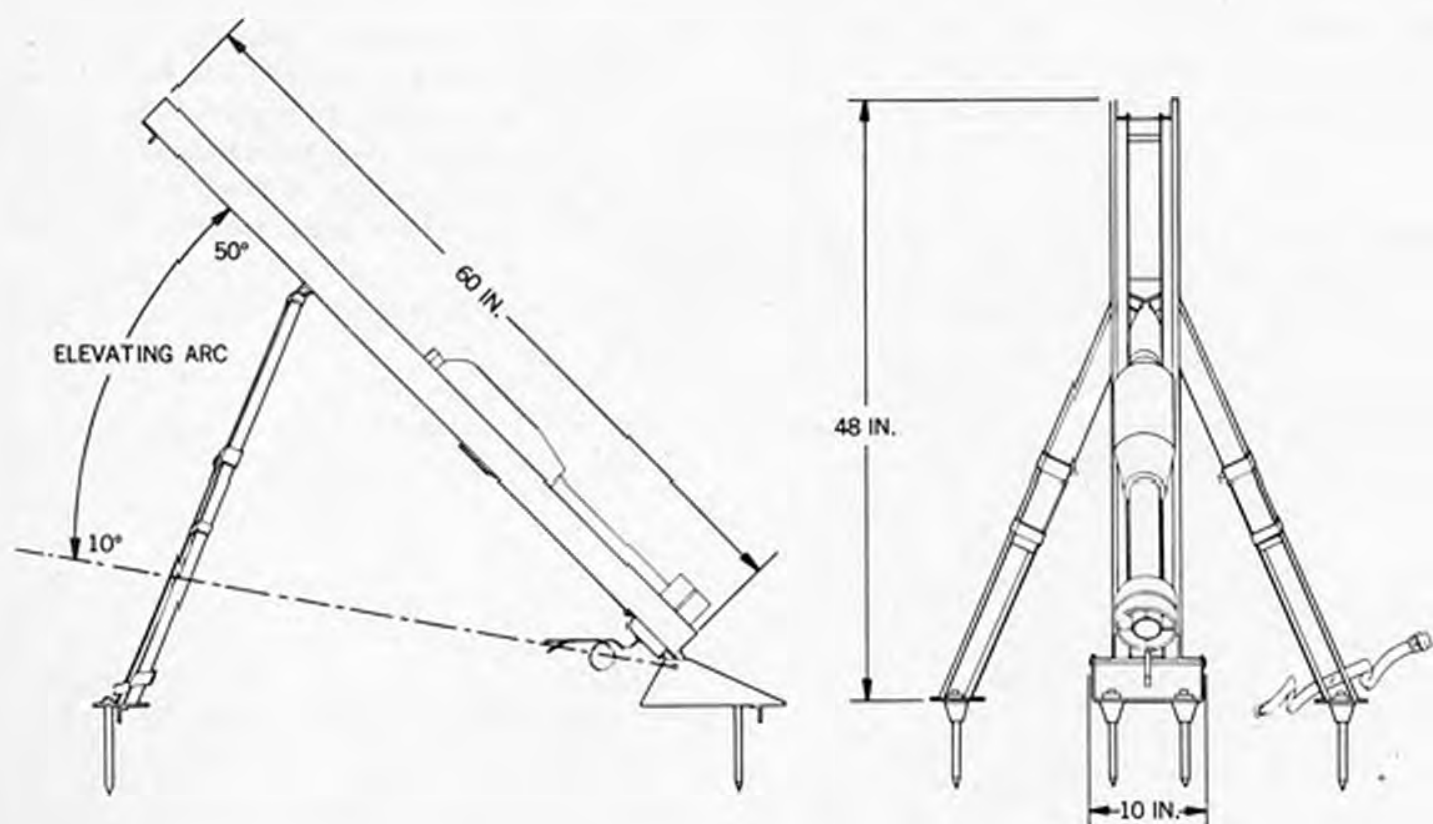
Electrical contact for firing is made by two knife-edge contacts in the guide.

DATA

Number of guides.....	1
Launcher ammunition:-	
Service	
4.5-inch Rocket Mk 1 Mod 0	
Practice	
4.5-inch Rocket Mk 2 Mod 0	
Drill	
4.5-inch Rocket Mk 3 Mod 0	
Smoke	
4.5-inch Rocket Mk 4 Mod 0	
4.5-inch Rocket Mk 4 Mod 1	
4.5-inch Rocket Mk 4 Mod 2	
Weight:-	
Less ammunition, lb.....	36
Loaded, lb.....	66
Major dimensions:-	
Height at maximum elevation, in.	48
Width, in.	10
Length at minimum elevation, in.	57
Length of guide, in.	60
Radius of clearance circle.....	non-trainable
Radius of working circle.....	non-trainable
Guide-laying movements:-	
Train.....	non-trainable
Elevation, deg.....	10 to 50
Firing arcs:-	
Same as guide-laying movements	

Training speed.....	non-trainable
Elevating speed.....	manually elevated
Firing data:-	
Type.....	electric
Voltage at firing pins, v DC.....	5*
Firing mechanism.....	Firing Key Mk 22 Mod 1
Launcher capacity, rounds.....	1
Firing interval, sec.....	manually reloaded
Ballistic data:-	
4.5-inch Rocket Mk 1 Mod 0	
Weight, lb.....	28.7
Range at 45 degrees elevation, yd.....	1100
Velocity (end of burning), fps.....	355
Range table.....	OP 1111
Mount data:-	
Components	
Rocket Launcher.....	Mk 4 Mod 0
List of drawings.....	Sk 133146
General arrangement.....	Dr 424832, 3
Adapters and attachments.....	none
Publication references:-	
Instruction handbook.....	OP 1128
Procurement specifications.....	OS 3308
Installation instructions.....	OS 3309
Spare parts list.....	none
Catalog of Navy Material.....	none
4.5-inch Rockets.....	OP 1111

*Estimated



Rocket Launcher Mk 4 Mod 0

ROCKET LAUNCHER MARK 5 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 5 Mod 0 is an electrically fired weapon for laying rocket barrages from a 1/4-ton jeep truck.

The launcher consists of corrugated sheet-steel guides designed to be mounted on the roof of a jeep. The construction of the launcher and its mounted position is such that the occupants

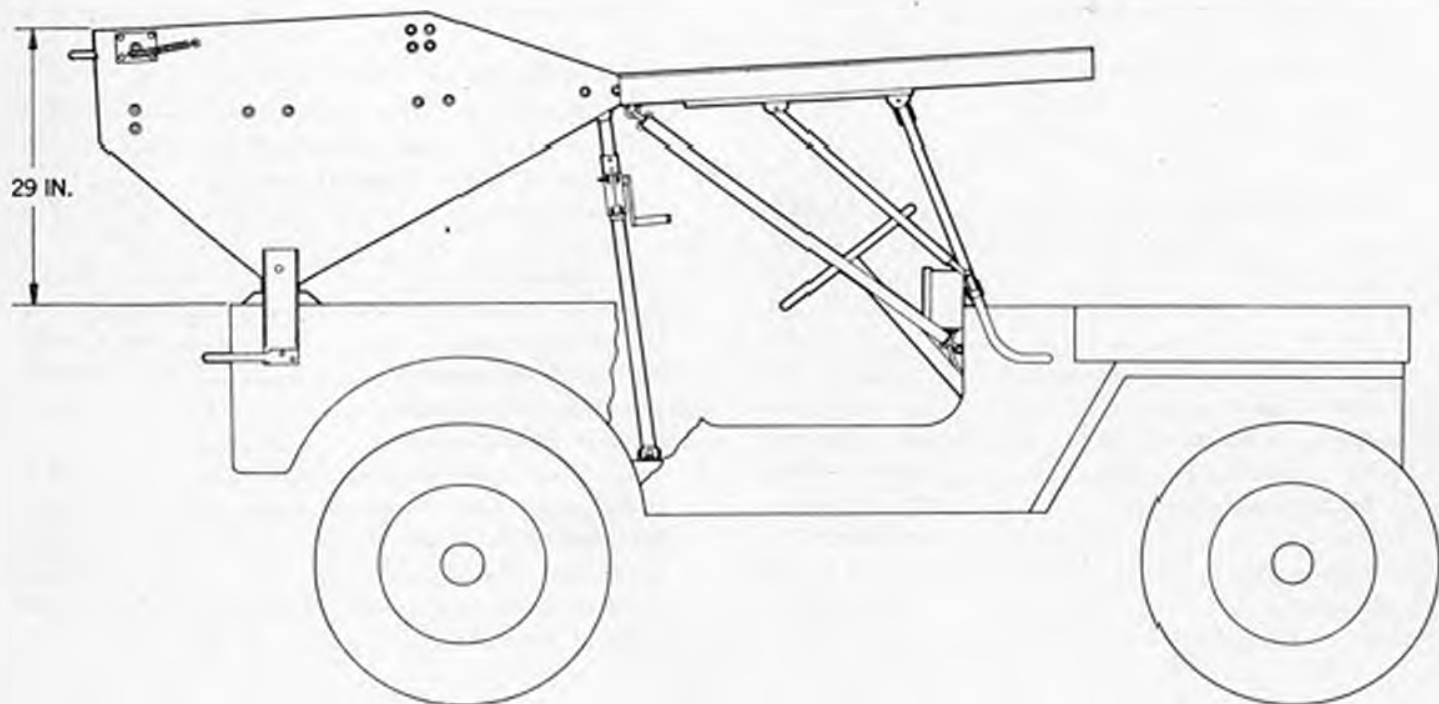
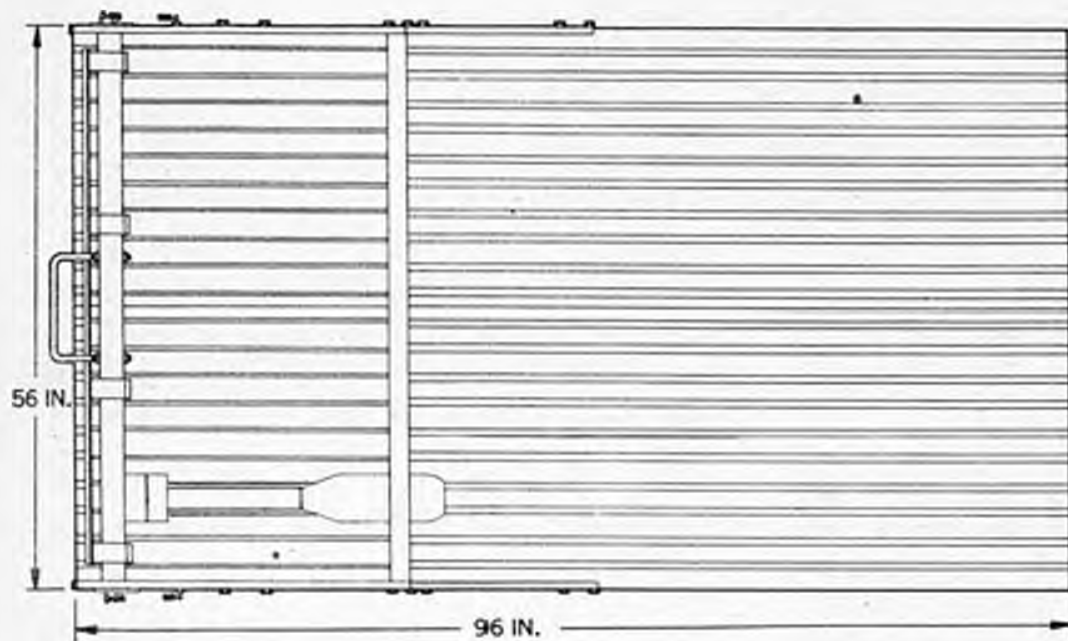
of the vehicle are protected from the rocket blast. The upper rails of the guide clamp the rockets in place while the jeep is in motion. A rack and pinion mechanism is provided to vary the elevation of the guides.

Electrical power for firing is furnished by the vehicle's battery.

DATA

Number of guides 10
 Launcher ammunition:-
 Service
 4.5-inch Rocket Mk 1 Mod 0
 Practice
 4.5-inch Rocket Mk 2 Mod 0
 Drill
 4.5-inch Rocket Mk 3 Mod 0
 Smoke
 4.5-inch Rocket Mk 4 Mod 0
 4.5-inch Rocket Mk 4 Mod 1
 4.5-inch Rocket Mk 4 Mod 2
 Weight:-
 Less ammunition, lb 325
 Loaded, lb 625
 Major dimensions:-
 Height at maximum elevation, in. 74
 Width, in. 56
 Length at minimum elevation, in. 96
 Length of guides, in. 96
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation, deg 5 to 45
 Firing arcs:-
 Same as guide-laying movements

Training speed non-trainable
 Elevating speed manually elevated
 Firing data:-
 Type electric
 Voltage at firing pins, v DC 6.3
 Firing mechanism push buttons
 Launcher capacity, rounds 10
 Firing interval, sec 0.5
 Ballistic data:-
 4.5-inch Rocket Mk 1 Mod 0
 Weight, lb 28.7
 Range at 45 degrees elevation, yd 1100
 Velocity (end of burning), fps 355
 Range table OP 1111
 Mount data:-
 Components
 Rocket Launcher Mk 5 Mod 0
 List of drawings Sk 133147
 General arrangement Dr 424840,1
 Adapters and attachments none
 Publication references:-
 Instruction handbook none
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 4.5-inch Rockets OP 1111



Rocket Launcher Mk 5 Mod 0

ROCKET LAUNCHER MARK 6 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 6 Mod 0 is a portable, expendable, electrically fired weapon for laying a rocket barrage from defensive positions on land.

The launcher consists of a wooden guide assembly that is hinged to a flat base at the after end. The guides are supported by legs, which may be adjusted to vary the elevation of the guides. The legs are adjusted by inserting them

into a series of holes in the base of the launcher. To facilitate operation, ranges are indicated adjacent to these holes. A blast shield is attached to the after end of the base frame. The launcher can be collapsed to form a portable protective box. Launchers are usually strapped in pairs with the rail surfaces facing each other.

Electrical contact for firing is made by two knife-edge contacts in the guide.

DATA

Number of guides 3

Launcher ammunition:-

Service

4.5-inch Rocket Mk 1 Mod 0

Practice

4.5-inch Rocket Mk 2 Mod 0

Drill

4.5-inch Rocket Mk 3 Mod 0

Smoke

4.5-inch Rocket Mk 4 Mod 0

4.5-inch Rocket Mk 4 Mod 1

4.5-inch Rocket Mk 4 Mod 2

Weight:-

Less ammunition, lb 22

Loaded, lb 112

Major dimensions:-

Height at maximum elevation, in. 38

Width, in. 18

Length in collapsed position, in. 43

Length of guides, in. 43

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation, deg 20 to 60

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed manually elevated

Firing data:-

Type electric

Voltage at firing pins, v DC 5 to 20

Firing mechanism (only one per launcher)

Firing Panel Mk 10

Firing Key Mk 21 Mod 1

Launcher capacity, rounds 3

Firing interval, sec 1*

Ballistic data:-

4.5-inch Rocket Mk 1 Mod 0

Weight, lb 28.7

Range at 45 degrees elevation, yd 1100

Velocity (end of burning), fps 355

Range table OP 1111

Mount data:-

Components

Rocket Launcher Mk 6 Mod 0

List of drawings Sk 133148

General arrangement Dr 424880

Adapters and attachments none

Publication references:-

Instruction handbook none

Procurement specifications none

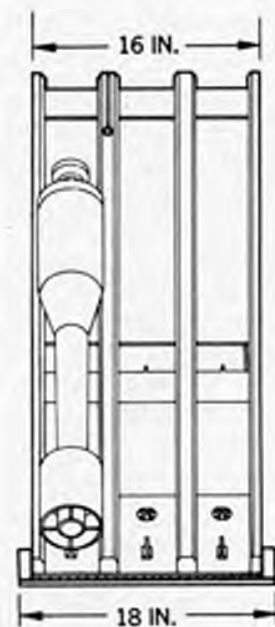
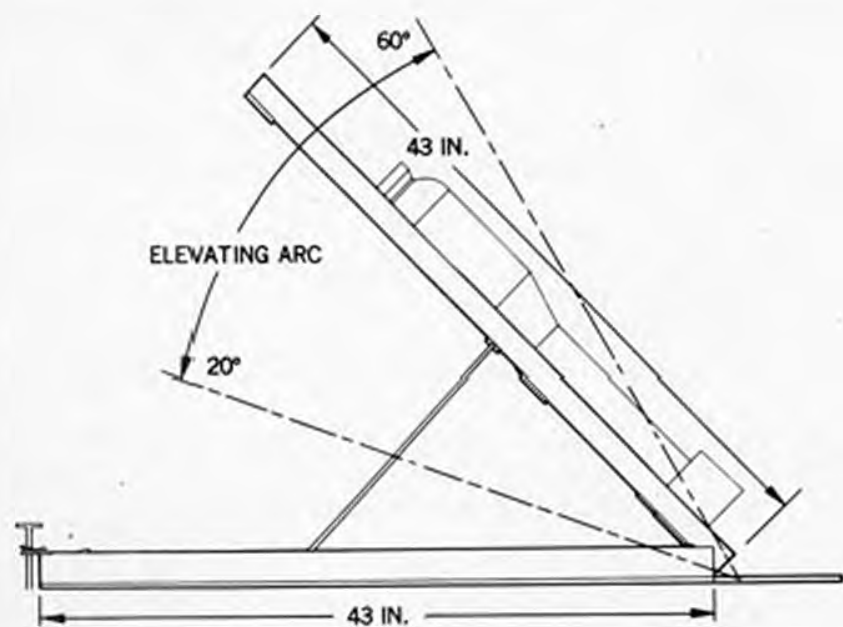
Installation instructions none

Spare parts list none

Catalog of Navy Material none

4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 6 Mod 0

ROCKET LAUNCHER MARK 7 (EXPERIMENTAL)

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 7 (Experimental) is an electrically fired, automatic gravity-fed weapon for laying intense rocket barrages from amphibious craft, landing craft, vehicles, and land installations.

The launcher consists of a double magazine, reel, guide, and frame. The magazine holds the rockets and feeds them into the reel, which separates the rockets and permits them to drop

onto the guide one at a time. The guide consists of two formed steel sections. The launcher includes a crutch and deck frame for deck mounting; the length of the crutch can be adjusted to vary the elevation of the launcher. Attachments and adapters are provided for other types of installations.

Electrical contact for firing is made by two knife-edge contacts in the guide.

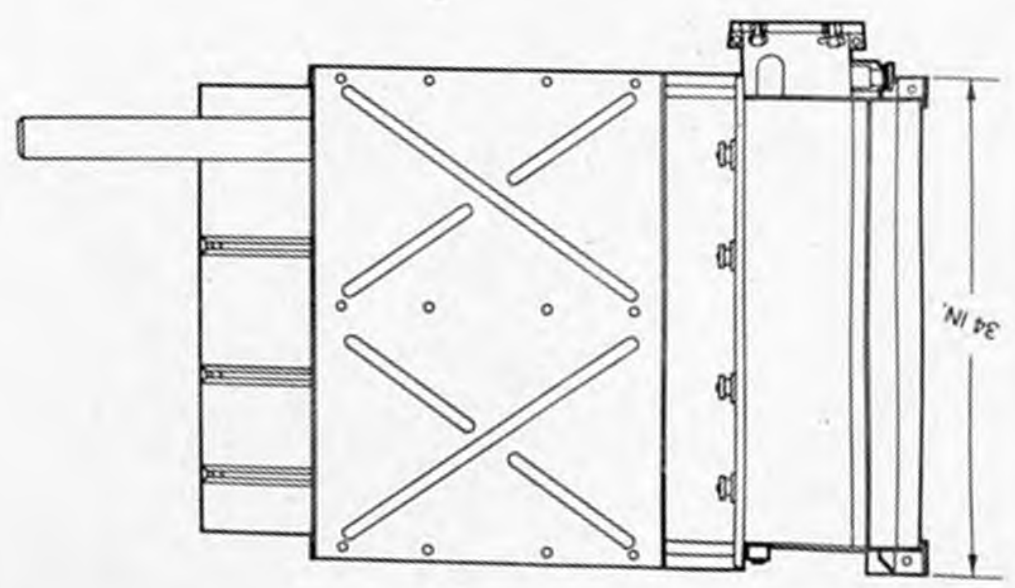
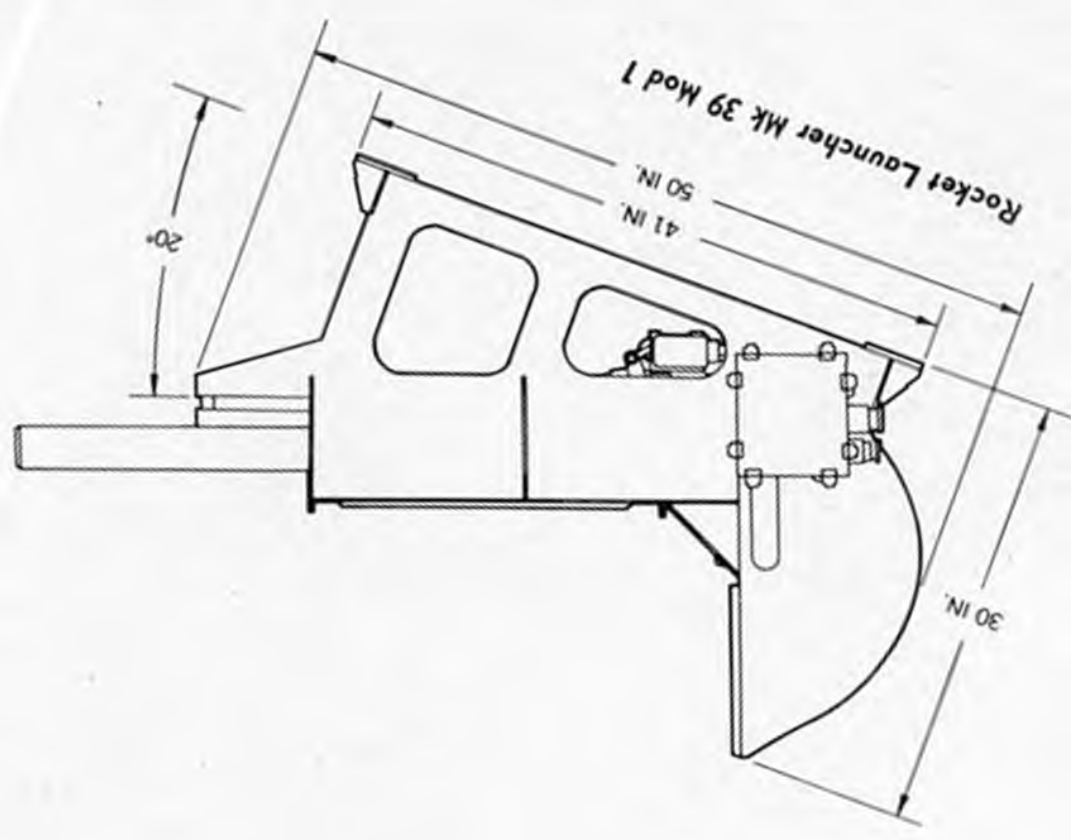
DATA

Number of guides	1
Launcher ammunition:-	
Service	
4.5-inch Rocket Mk 1 Mod 0	
Practice	
4.5-inch Rocket Mk 2 Mod 0	
Drill	
4.5-inch Rocket Mk 3 Mod 0	
Smoke	
4.5-inch Rocket Mk 4 Mod 0	
4.5-inch Rocket Mk 4 Mod 1	
4.5-inch Rocket Mk 4 Mod 2	
Weight:-	
Less ammunition, lb	155
Loaded, lb	515
Major dimensions:-	
Height at maximum elevation, in.	58
Width, in.	12
Length at minimum elevation, in.	55
Length of guide, in.	60
Radius of clearance circle	non-trainable
Radius of working circle	non-trainable
Guide-laying movements:-	
Train	non-trainable
Elevation, deg	25 to 40
Firing arcs:-	
Same as guide-laying movements	
Training speed	non-trainable
Elevating speed	manually elevated
Firing data:-	
Type	electric

Firing data (cont)	
Voltage at firing pins (varies with installation)	
v DC	12
v AC	20
Firing mechanism (only one per launcher)	
Firing Panel Mk 11 Mod 0	
Firing Panel Mk 11 Mod 1	
Firing Panel Mk 9 Mod 0	
Firing Panel Mk 16 Mod 1	
Launcher capacity, rounds	12
Firing interval (ripple salvo), sec	0.3*
Ballistic data:-	
4.5-inch Rocket Mk 1 Mod 0	
Weight, lb	28.7
Range at 45 degrees elevation, yd	1100
Velocity (end of burning), fps	355
Range table	OP 1111
Mount data:-	
Components	
Rocket Launcher	Mk 7 (Exp)
List of drawings	Sk 133154
General arrangement	Dr 424858
Adapters and attachments	Blast Deflector
Adapter Kit Mk 2 Mod 0	
Rocket Launcher Guide Extension Mk 1 Mod 0	
Publication references:-	
Instruction handbook	OP 1131
Procurement specifications	OS 3072
Installation instructions	OS 3073
Spare parts list	none
Catalog of Navy Material	none
4.5-inch Rockets	OP 1111

*Estimated

CONFIDENTIAL SECURITY INFORMATION



CONFIDENTIAL
SECURITY INFORMATION

OP 1855
MISSILE LAUNCHER CATALOG

ROCKET LAUNCHER MARK 17 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 17 Mod 0 is an electrically fired weapon for launching rocket targets for antiaircraft target practice.

The single guide for this launcher is an M-shaped sheet-metal form that is closed at both ends. The guide is supported by a folding tripod mount. Three metal plates serve as bases for the tripod legs; the forward leg of this tripod can be adjusted to provide the mount with varying degrees of elevation. When the mount is assembled, three chains join the base plates to

each other and prevent the legs from spreading.

The guide has a U-shaped metal stop near the after end, against which the rocket rests when the launcher is loaded. The after end of the guide contains two plug receptacles, either of which receives the motor plug of the rocket. A third plug receptacle, located on the underside of the guide, receives the plug attached to the end of the firing cable. This receptacle is connected to the plug receptacles at the rear by wires inside the guide.

DATA

Number of guides 1

Launcher ammunition:-

Target

3.25-inch Rocket Mk 1 Mod 0

3.25-inch Rocket Mk 1 Mod 1

3.25-inch Rocket Mk 2 Mod 0

3.25-inch Rocket Mk 2 Mod 2

Weight:-

Less ammunition, lb 185

Loaded, lb 230

Major dimensions:-

Height at maximum elevation, in. 148

Width, in. 60

Length at minimum elevation, in. 134

Length of guide, in. 120

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation, deg 30 to 60

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed... 3-deg increments, manually elevated

Firing data:-

Type electric

Voltage at firing pins, v DC 6

Firing mechanism standard blasting machine

Launcher capacity, rounds 1

Firing interval manually reloaded

Ballistic data:-

3.25-inch Rocket Mk 2 Mod 0

Weight, lb 45

Range at 45 degrees elevation, yd 1050

Velocity (end of burning), fps 440

Range table OP 1133

Mount data:-

Components

Rocket Launcher Mk 17 Mod 0

List of drawings Sk 133152

General arrangement Dr 424896

Adapters and attachments none

Publication references:-

Instruction handbook OP 1133

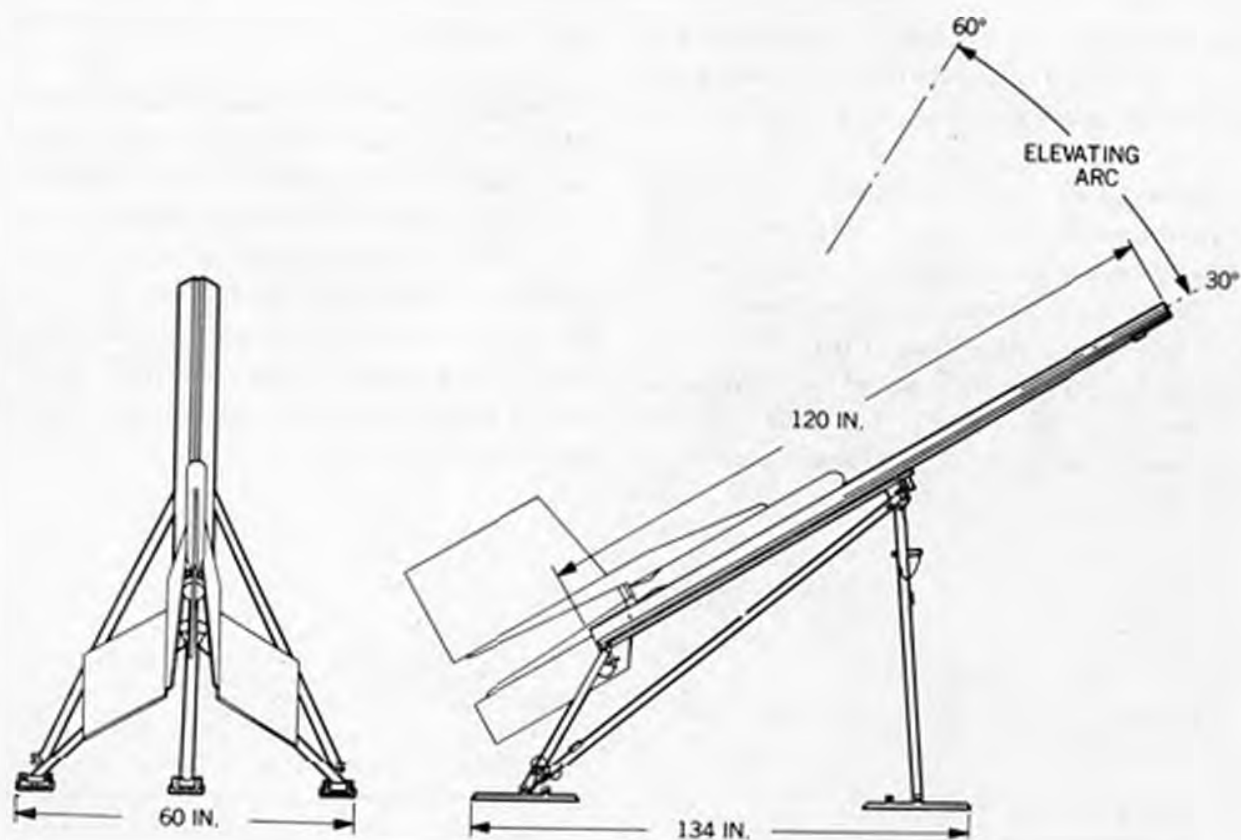
Procurement specifications none

Installation instructions none

Spare parts list none

Catalog of Navy Material Section 3350

3.25-inch Rockets OP 1175



Rocket Launcher Mk 17 Mod 0

ROCKET LAUNCHER MARK 17 MOD 1

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 17 Mod 1 is an electrically fired weapon for launching rocket targets for antiaircraft target practice. It is an adaptation of Rocket Launcher Mk 17 Mod 0 designed for use with Army Rocket Projector M1 in order to provide a mobile, trailer-type launcher suitable for firing Navy rocket targets.

The single guide for this launcher is an M-shaped sheet-metal form that is closed at both ends. When the rocket guide is attached to the Army M1 trailer, the elevating mechanism of the trailer is used.

The guide has a U-shaped metal stop near the

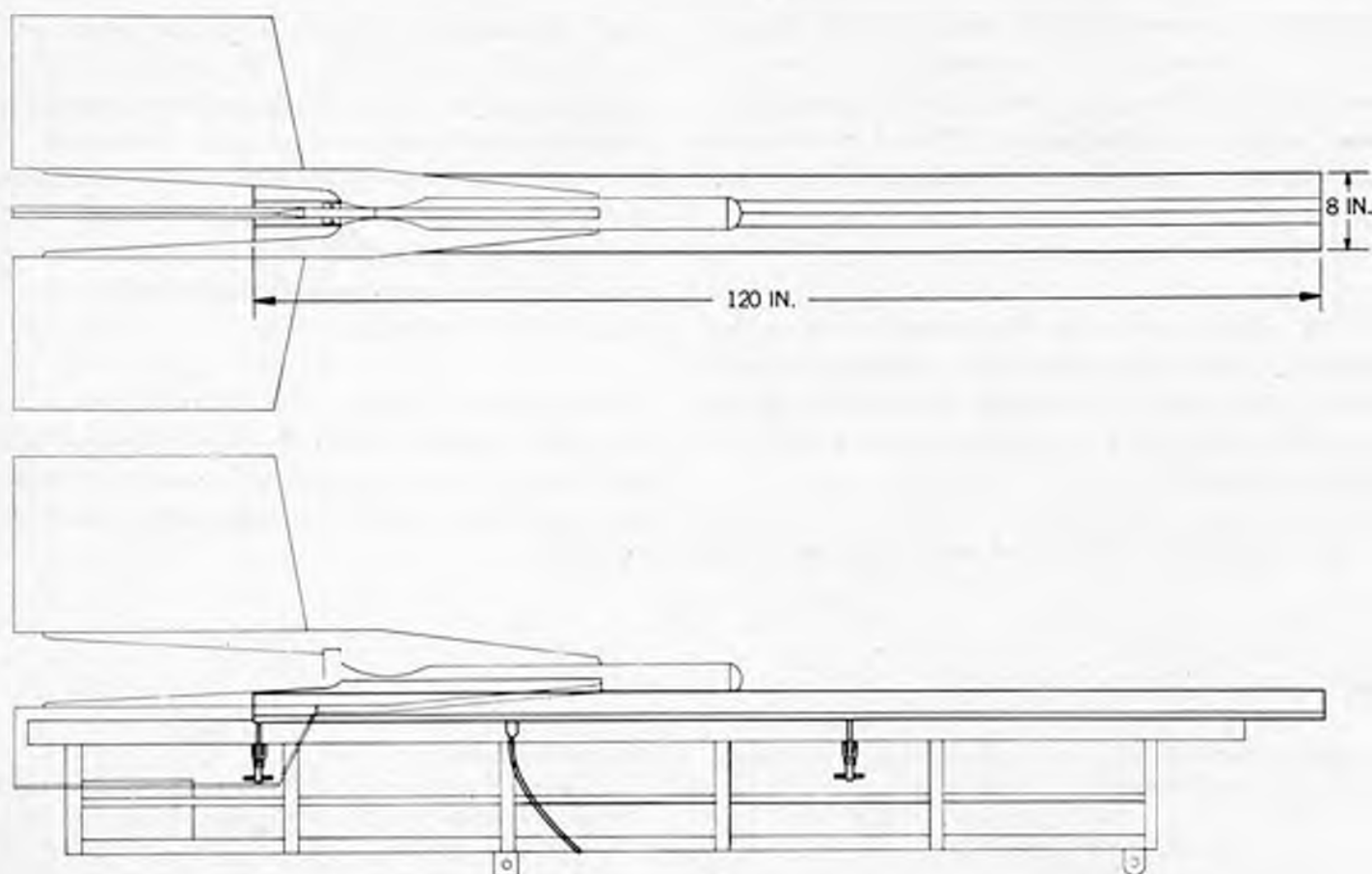
after end, against which the rocket rests when the launcher is loaded. The after end of the guide contains two plug receptacles, either of which receives the motor plug of the rocket. A third plug receptacle, located on the underside of the guide, receives the plug attached to the end of the firing cable. This receptacle is connected to the plug receptacles at the rear by wires inside the guide.

Although the launcher is designed for use with the Army trailer (Target Rocket Projector M1), the trailer is not provided as a unit of Rocket Launcher Mk 17 Mod 1 unless specifically requested.

DATA

Number of guides	1
Launcher ammunition:-	
Target	
3.25-inch Rocket Mk 1 Mod 0	
3.25-inch Rocket Mk 1 Mod 1	
3.25-inch Rocket Mk 2 Mod 0	
3.25-inch Rocket Mk 2 Mod 1	
Weight:-	
Less ammunition, lb	71
Loaded, lb	116
Major dimensions:-	
Height, in.	14
Width, in.	8
Length, in.	120
Length of guide, in.	120
Radius of clearance circle	non-trainable
Radius of working circle	non-trainable
Guide-laying movements:-	
Train	non-trainable
Elevation, deg	0 to 60
Firing arcs:-	
Same as guide-laying movements	
Training speed	non-trainable
Elevating speed	manually elevated
Firing data:-	
Type	electric

Firing data (cont)	
Voltage at firing pins, v DC	6
Firing mechanism	standard blasting machine
Launcher capacity, rounds	1
Firing interval	manually reloaded
Emergency firing mechanism	6-volt battery
Ballistic data:-	
3.25-inch Rocket Mk 2 Mod 0	
Weight, lb	45
Range at 45 degrees elevation, yd	1050
Velocity (end of burning), fps	440
Range table	OP 1133
Mount data:-	
Components	
Rocket Launcher	Mk 17 Mod 1
List of drawings	Sk 133153
General arrangement	Dr 424918
Adapters and attachments	none
Publication references:-	
Instruction handbook	OP 1133
Instruction handbook (for trailer)	TM9-390
Procurement specifications	OS 3314
Installation instructions	OS 3315
Spare parts list	none
Catalog of Navy Material	Section 3350
3.25-inch Rockets	OP 1175



Rocket Launcher Mk 17 Mod 1

ROCKET LAUNCHER MARK 17 MOD 2

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 17 Mod 2 is an electrically fired weapon for launching rocket targets for antiaircraft target practice.

The single guide for this launcher is an M-shaped sheet-metal form that is closed at both ends. The guide is supported by a folding tripod mount. Three metal plates serve as bases for the tripod legs; the forward leg of this tripod can be adjusted to provide the mount with varying degrees of elevation. When the mount is assembled, three chains join the base plates to

each other and prevent the legs from spreading.

The guide has a U-shaped metal stop near the after end, against which the rocket rests when the launcher is loaded. Rocket Launcher Mk 17 Mod 2 is identical to Rocket Launcher Mk 17 Mod 0 except that the electrical connections have been altered to facilitate maintenance.

On Rocket Launcher Mk 17 Mod 2 all electrical connections are made to an electric plug-in box that is mounted on the after end of the guide.

DATA

Number of guides1

Launcher ammunition:-

Target

3.25-inch Rocket Mk 1 Mod 0

3.25-inch Rocket Mk 1 Mod 1

3.25-inch Rocket Mk 2 Mod 0

3.25-inch Rocket Mk 2 Mod 1

Weight:-

Less ammunition, lb185

Loaded, lb230

Major dimensions:-

Height at maximum elevation, in.148

Width, in.60

Length at minimum elevation, in.134

Length of guide, in.120

Radius of clearance circlenon-trainable

Radius of working circlenon-trainable

Guide-laying movements:-

Trainnon-trainable

Elevation, deg0 to 60

Firing arcs:-

Same as guide-laying movements

Training speednon-trainable

Elevating speed... 3-deg increments, manually elevated

Firing data:-

Type electric

Voltage at firing pins, v DC6

Firing mechanismstandard blasting machine

Launcher capacity, rounds1

Firing intervalmanually reloaded

Ballistic data:-

3.25-inch Rocket Mk 2 Mod 0

Weight, lb45

Range at 45 degrees elevation, yd1050

Velocity (end of burning), fps440

Range tableOP 1133

Mount data:-

Components

Rocket LauncherMk 17 Mod 1

List of drawingsSk 166384

General arrangementDr 425144

Adapters and attachmentsnone

Publication references:-

Instruction handbookOP 1133

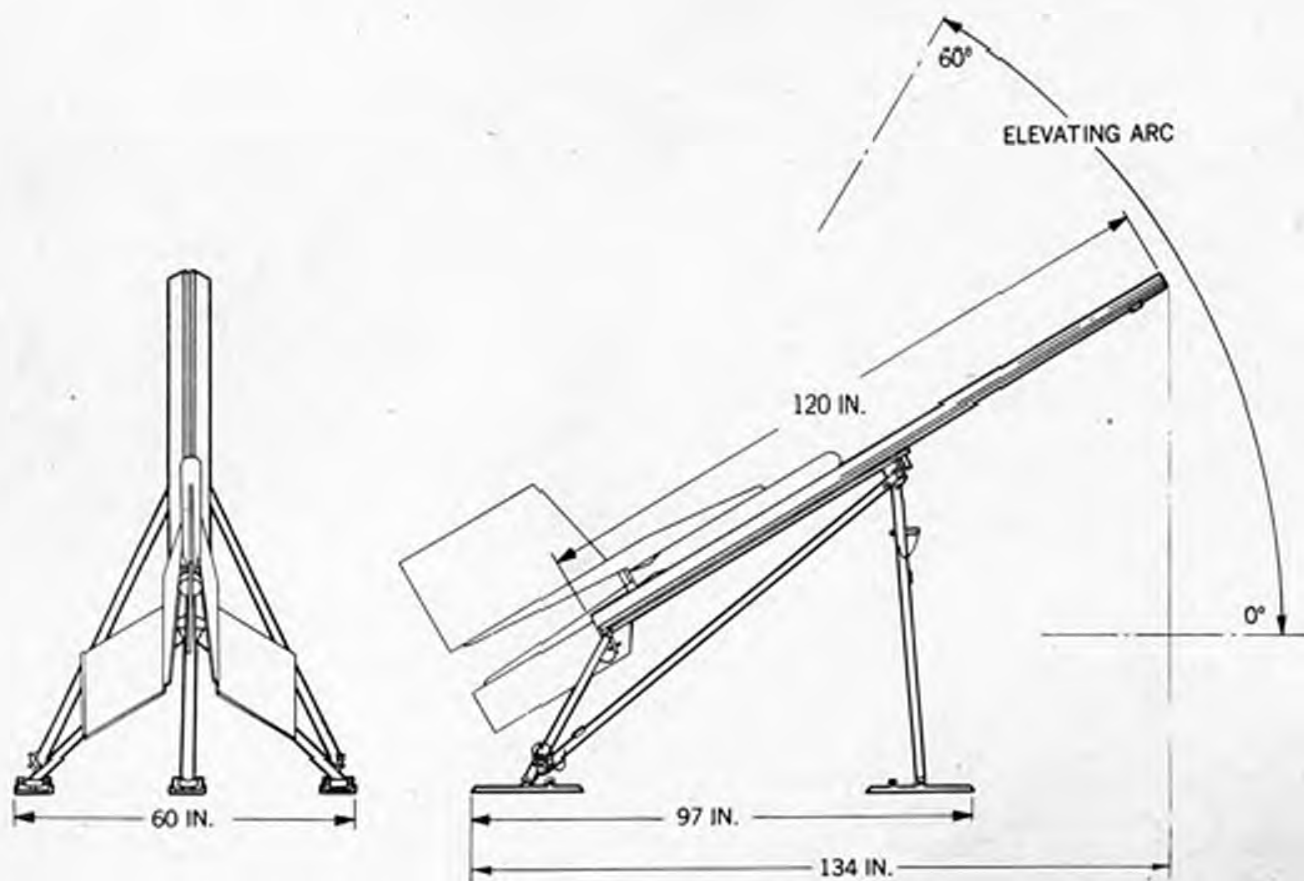
Procurement specificationsOS 3676

Installation instructionsnone

Spare parts listnone

Catalog of Navy MaterialSection 3350

3.25-inch RocketsOP 1175



Rocket Launcher Mk 17 Mod 2

ROCKET LAUNCHER MARK 17 MOD 3

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 17 Mod 3 is an electrically fired weapon for launching rocket targets for antiaircraft target practice. It is an adaptation of Rocket Launcher Mk 17 Mod 1 designed for use with Army Rocket Projector M1 in order to provide a mobile, trailer type launcher suitable for firing Navy rocket targets.

The single guide for this launcher is an M-shaped sheet-metal form that is closed at both

ends. When the rocket guide is attached to the Army M1 trailer, the elevating mechanism of the trailer is used.

The guide has a U-shaped metal stop near the after end, against which the rocket rests when the launcher is loaded. Electrical connections for firing are made to an electric plug-in box that is mounted on the after end of the guide.

DATA

Number of guides.....1
Launcher ammunition:-

Target

- 3.25-inch Rocket Mk 1 Mod 0
- 3.25-inch Rocket Mk 1 Mod 1
- 3.25-inch Rocket Mk 2 Mod 0
- 3.25-inch Rocket Mk 2 Mod 1

Weight:-

- Less ammunition, lb.....55
- Loaded, lb.....100

Major dimensions:-

- Height, in.16
- Width, in.7
- Length, in.126
- Length of guide, in.120
- Radius of clearance circle.....non-trainable
- Radius of working circle.....non-trainable

Guide-laying movements:-

- Train.....non-trainable
- Elevation, deg0 to 60

Firing arcs:-

- Same as guide-laying movements

- Training speed.....non-trainable
- Elevating speed.....manually elevated

Firing data:-

- Type.....electric
- Voltage at firing pins, v DC6
- Firing mechanism.....standard blasting machine
- Launcher capacity, rounds.....1
- Firing interval.....manually reloaded

Ballistic data:-

- 3.25-inch Rocket Mk 2 Mod 0
- Weight, lb.....45
- Range at 45 degrees elevation, yd.....1050
- Velocity (end of burning), fps.....440
- Range table.....none

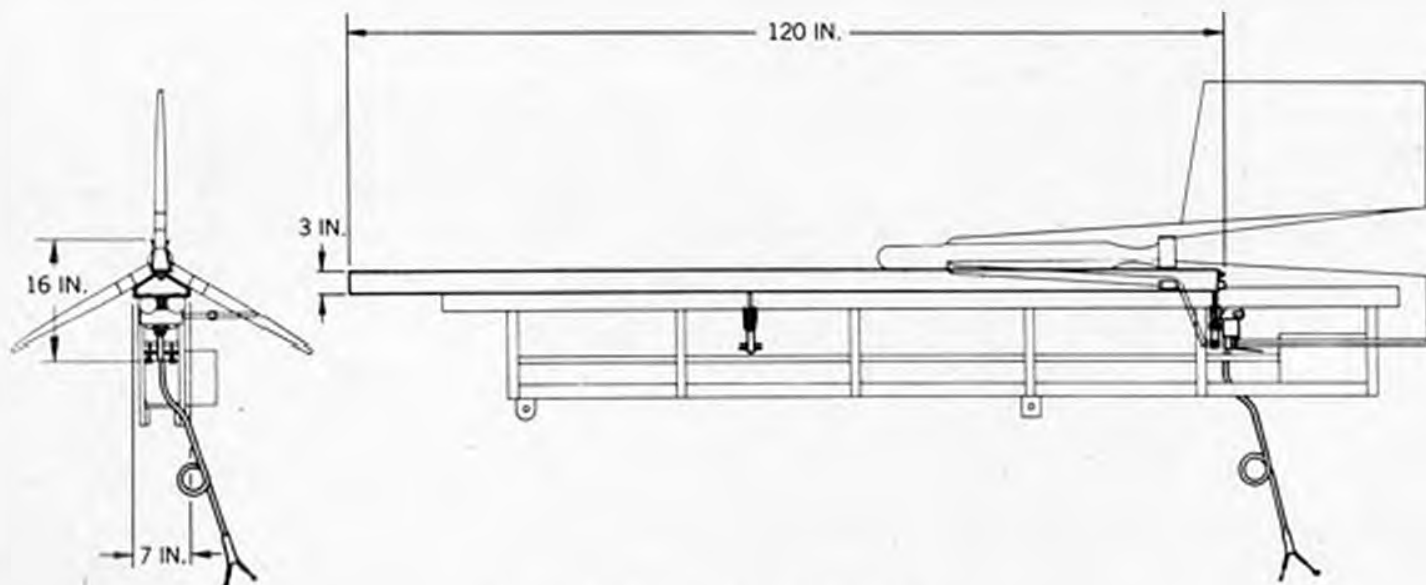
Mount data:-

- Components
- Rocket Launcher.....Mk 17 Mod 3
- List of drawings.....Sk 165385
- General arrangement.....Dr 425147

Adapters and attachments.....none

Publication references:-

- Instruction handbook.....none
- Procurement specifications.....OS 3677
- Installation instructions.....none
- Spare parts list.....none
- Catalog of Navy Material.....none
- 3.25-inch Rocket Targets.....OP 1175



Rocket Launcher Mk 17 Mod 3

ROCKET LAUNCHER MARK 18 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 18 Mod 0 is a portable electrically fired weapon for launching target rockets for antiaircraft target practice. This launcher is an adaptation of Rocket Launcher Mk 17 Mod 0 for use with a simplified version of the Army trailer used with Rocket Launcher Mk 17 Mod 1.

The single guide for this launcher is an M-shaped sheet-metal form closed at both ends. The elevation mechanism is a metal sector with evenly spaced holes along its periphery. The elevation angle can be adjusted at 5-degree in-

crements by inserting a lock pin into the holes of this metal sector.

The guide has a U-shaped metal stop near the after end, against which the rocket rests when the launcher is loaded. The after end of the guide contains two plug receptacles, either of which receives the motor plug of the rocket. A third plug receptacle, located on the underside of the guide, receives the plug attached to the end of the firing cable. This receptacle is connected to the plug receptacles at the rear by wires inside the guide.

DATA

Number of guides 1

Launcher ammunition:-

Target

3.25-inch Rocket Mk 1 Mod 0

3.25-inch Rocket Mk 1 Mod 1

3.25-inch Rocket Mk 2 Mod 0

3.25-inch Rocket Mk 2 Mod 1

Weight:-

Less ammunition, lb 900

Loaded, lb 945

Major dimensions:-

Height, in. 148*

Width, in. 60*

Length, in. 134*

Length of guide, in. 120*

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation, deg 0 to 75

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed...5-deg increments, manually elevated

Firing data:-

Type electric

Voltage at firing pins, v DC 6

Firing mechanism standard blasting machine

Launcher capacity, rounds 1

Firing interval, sec manually reloaded

Ballistic data:-

3.25-inch Rocket Mk 2 Mod 0

Weight, lb 45

Range at 45 degrees elevation, yd 1050

Velocity (end of burning), fps 440

Range table OP 1133

Mount data:-

Components

Rocket Launcher Mk 17 Mod 2

List of drawings not assigned

General arrangement not assigned

Adapter and attachments none

Publication references:-

Instruction handbook none

Procurement specifications none

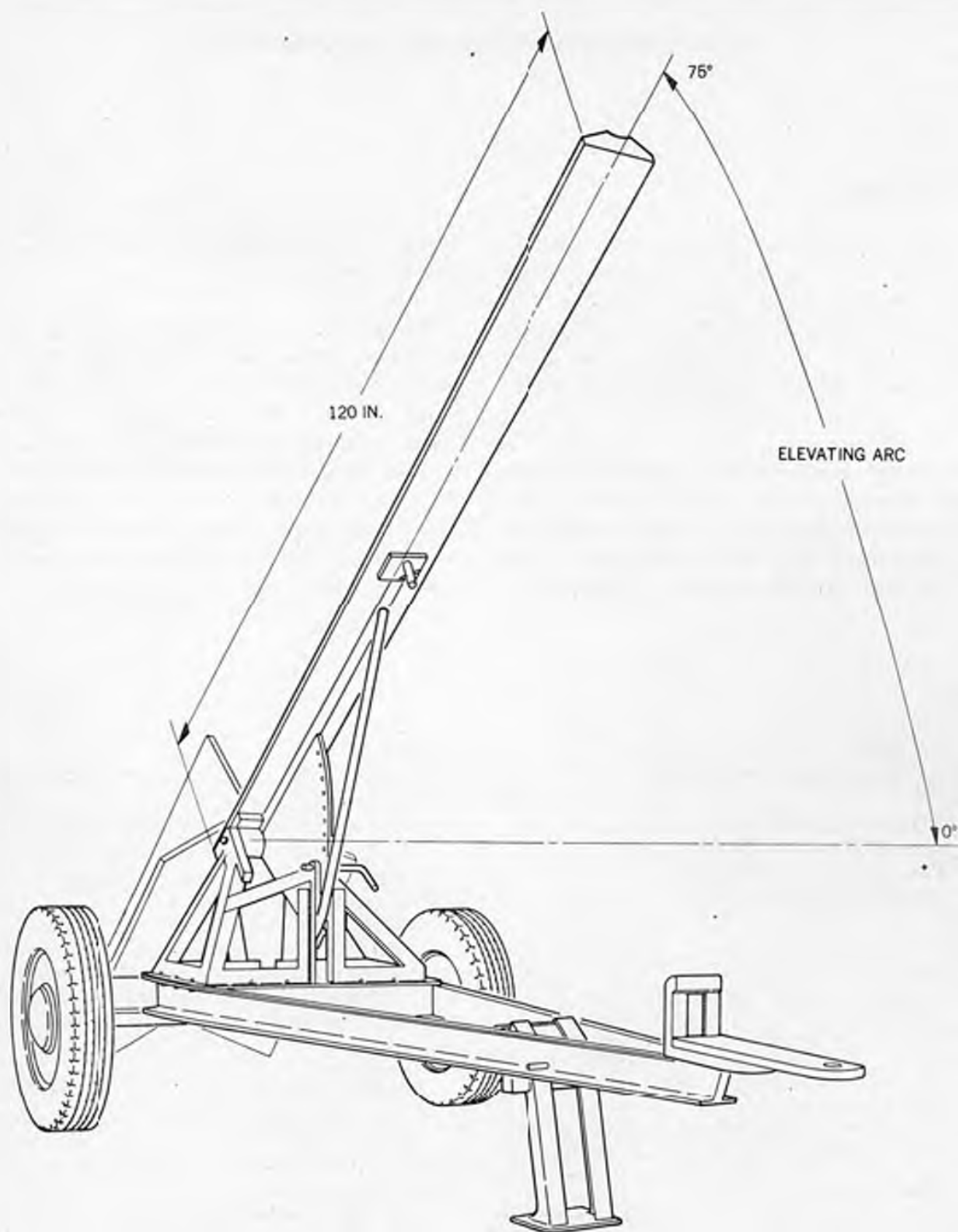
Installation instructions none

Spare parts list none

Catalog of Navy Material none

3.25-inch Rockets OP 1175

* Estimated



Rocket Launcher Mk 18 Mod 0

ROCKET LAUNCHER MARK 30 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 30 Mod 0 is an electrically fired weapon for laying barrages and for firing illuminating rockets from landing craft.

The T-slot guides of the launcher are mounted in three pairs of one upper and one lower guide; all of the guides are mounted on a cantilever beam. The launcher is manually loaded with the guides inboard. The assembly is then swung out-

board to the firing position.

A spring-loaded collar with four detents at 90-degree intervals locks the weapon in any one of four positions. This collar is released from retaining pins by a foot lever to train the mount. A locking handle is used to secure the launcher in elevation; when this handle is released, the launcher can be elevated in 5-degree increments.

DATA

Number of guides 6
Launcher ammunition:-

Service

3.5-inch Rocket Mk 1 Mod 0; Mk 8 Mod 0
5.0-inch Rocket Mk 1 Mods 0-5; Mk 4 Mods 0 and 1

Drill

3.5-inch Rocket Mk 2 Mod 0
5.0-inch Rocket Mk 3 Mod 0; Mk 6 Mod 0

Smoke

3.5-inch Rocket Mk 3 Mods 0 and 1

Target

5.0-inch Rocket Mk 2 Mod 0; Mk 5 Mod 0

Illuminating

5.0-inch Rockets with button-type suspension lugs

Weight:-

Less ammunition, lb 437
Loaded
With six 3.25-inch motor rockets, lb 918
With four 5.0-inch motor rockets, lb 991

Major dimensions:-

Height at maximum elevation, in. 121
Width, in. 58
Length at minimum elevation, in. 90
Length of guides, in. 90
Radius of clearance circle, in. 61
Radius of working circle, in. 93*

Guide-laying movements:-

Train unlimited
Elevation unlimited

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed manually elevated

Firing data:-

Type electric
Voltage at firing pins, v AC or DC 6 to 24**
Firing mechanism (only one per launcher)
Firing Panel Mk 13 Mod 0
Firing Panel Mk 17 Mod 0
Firing Key (Magneto) Mk 21 Mod 2***
Launcher capacity, rounds 6
Firing interval (ripple salvo), sec 1

Ballistic data:-

3.5-inch Rocket Mk 8 Mod 0
Weight, lb 55.2
Range at 17 degrees elevation, yd 5430
Velocity (end of burning), fps 1140
Range table none
5.0-inch Rocket Mk 4 Mod 0
Weight, lb 134
Range at 17 degrees elevation, yd 5550
Velocity (end of burning), fps 1540
Range table none

Mount data:-

Components
Rocket Launcher Mk 30 Mod 0
List of drawings Sk 166307
General arrangement Dr 425018, 19
Dr 424955

Adapters and attachments none

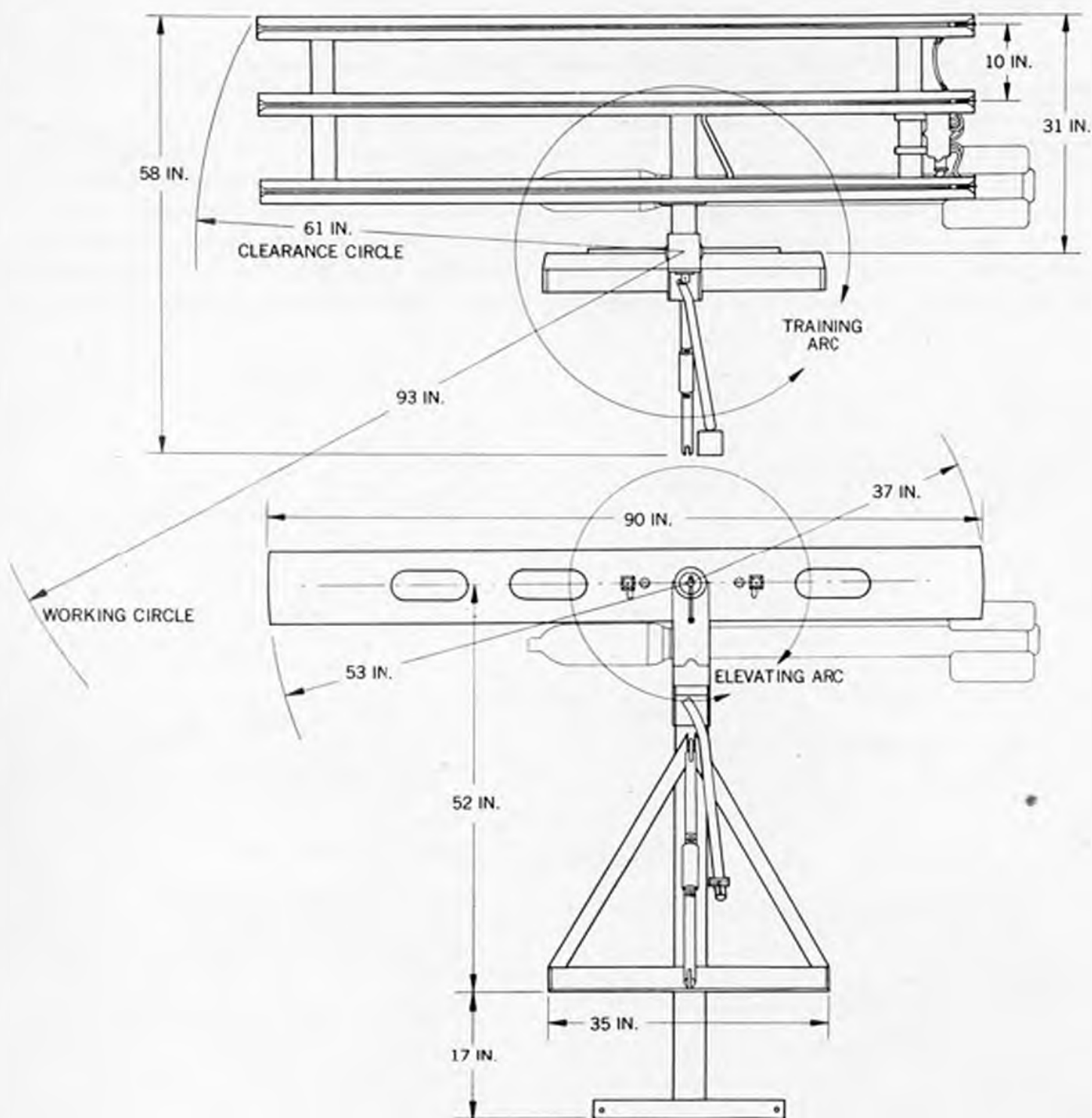
Publication references:-

Instruction handbook OP 1135
Procurement specifications OS 3319
Installation instructions none
Spare parts list none
Catalog of Navy Material none
3.5-inch and 5.0-inch Aircraft Rockets OP 1157

* Estimated

**Varies with firing mechanism and installation

***For single installations only



Rocket Launcher Mk 30 Mod 0

ROCKET LAUNCHER MARK 31 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 31 Mod 0 is an electrically fired weapon for launching window or flare rockets from escort aircraft carriers.

The launcher consists of a guide assembly mounted on a pedestal-type base. The guide assembly consists of two guide units joined by spacer pipes; one of these spacer pipes is joined to the upper part of the base. Each guide unit has two T-slot launching guides, one on the upper surface and one on the lower surface. Spring-actuated stops on the after end of each guide

permit loading from the breech end and prevent the rockets from sliding off the rear during elevating and loading. An elevating arc with a locking handle is provided for elevation adjustment; the upper part of the base is bearing-mounted to allow the launcher to be trained. This train mechanism is also provided with a locking handle. The training arc of the launcher can be limited by two adjustable train stops mounted on a collar secured to the base.

Electrical contact for firing is made by an electrical unit that is contained in the guide.

DATA

Number of guides 4
Launcher ammunition:-

Service

3.5-inch Rocket Mk 4 Mods 0-5,8

3.5-inch Rocket (Flare)*

3.5-inch Rocket (Signal)*

Weight:-

Less ammunition, lb 425

Loaded, lb 555

Major dimensions:-

Height at maximum elevation, in. 91**

Width, in. 25

Length at minimum elevation, in. 72

Length of guides, in. 72

Radius of clearance circle, in. 45**

Radius of working circle, in. 95**

Guide-laying movements:-

Train..... unlimited

Elevation, deg 0 to 72

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed manually elevated

Firing data:-

Type electric

Voltage at firing pins, v AC or DC 6 to 24***

Firing mechanism Firing Panel Mk 14 Mod 1

Launcher capacity, rounds 4

Firing interval, sec 0.5**

Ballistic data:-

3.5-inch Rocket Mk 4 Mod 8

Weight, lb 31.5

Range at 40 degrees elevation, yd 2000

Velocity (end of burning), fps 400

Range table none

Mount data:-

Components

Rocket Launcher Mk 31 Mod 0

List of drawings Sk 165022

General arrangement Dr 439500

Adapters and attachments none

Publication references:-

Instruction handbook OP 1279

Procurement specifications OS 3546

Installation instructions none

Spare parts list none

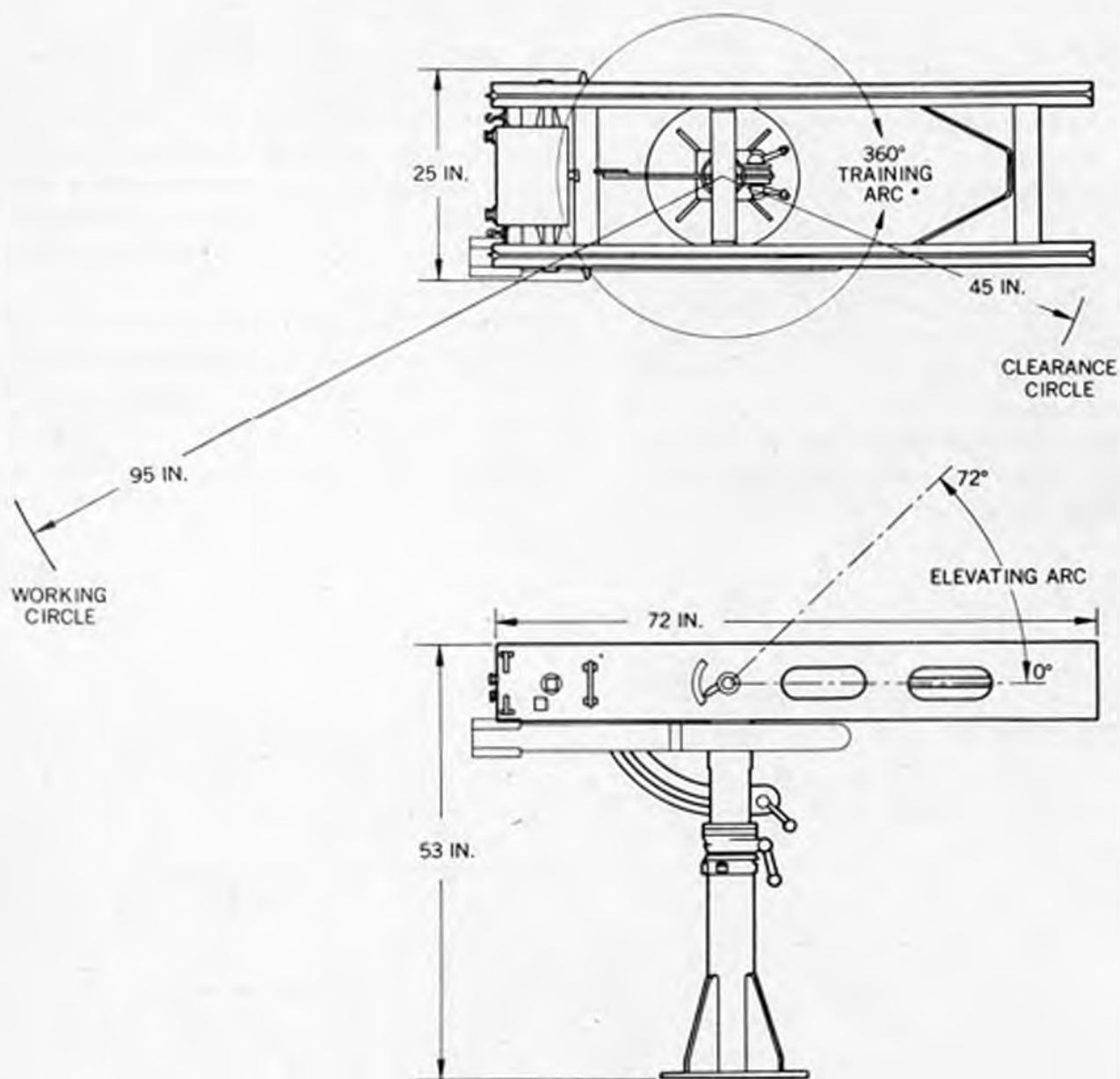
Catalog of Navy Material Section 3550

3.5-inch Rocket (Surface Window) OP 1469

*Mk not designated

**Estimated

***Varies with installation



* WITHOUT USING ADJUSTABLE STOPS

Rocket Launcher Mk 31 Mod 0

ROCKET LAUNCHER MARK 32 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 32 Mod 0 is an electrically fired weapon for launching signal, flare, or window rockets from land or shipboard.

The guide assembly, which consists of upper and lower T-slot launching guides, is mounted on a carriage to allow the guides to rotate in train. An elevating arc with a locking handle is attached to the guide assembly to vary the elevation of the mount. Latches at the rear of each launching guide prevent the rockets from slipping off the guides during loading or elevating.

An electrical receptacle box is mounted at the after end of the guide assembly to provide power for firing the launcher.

DATA

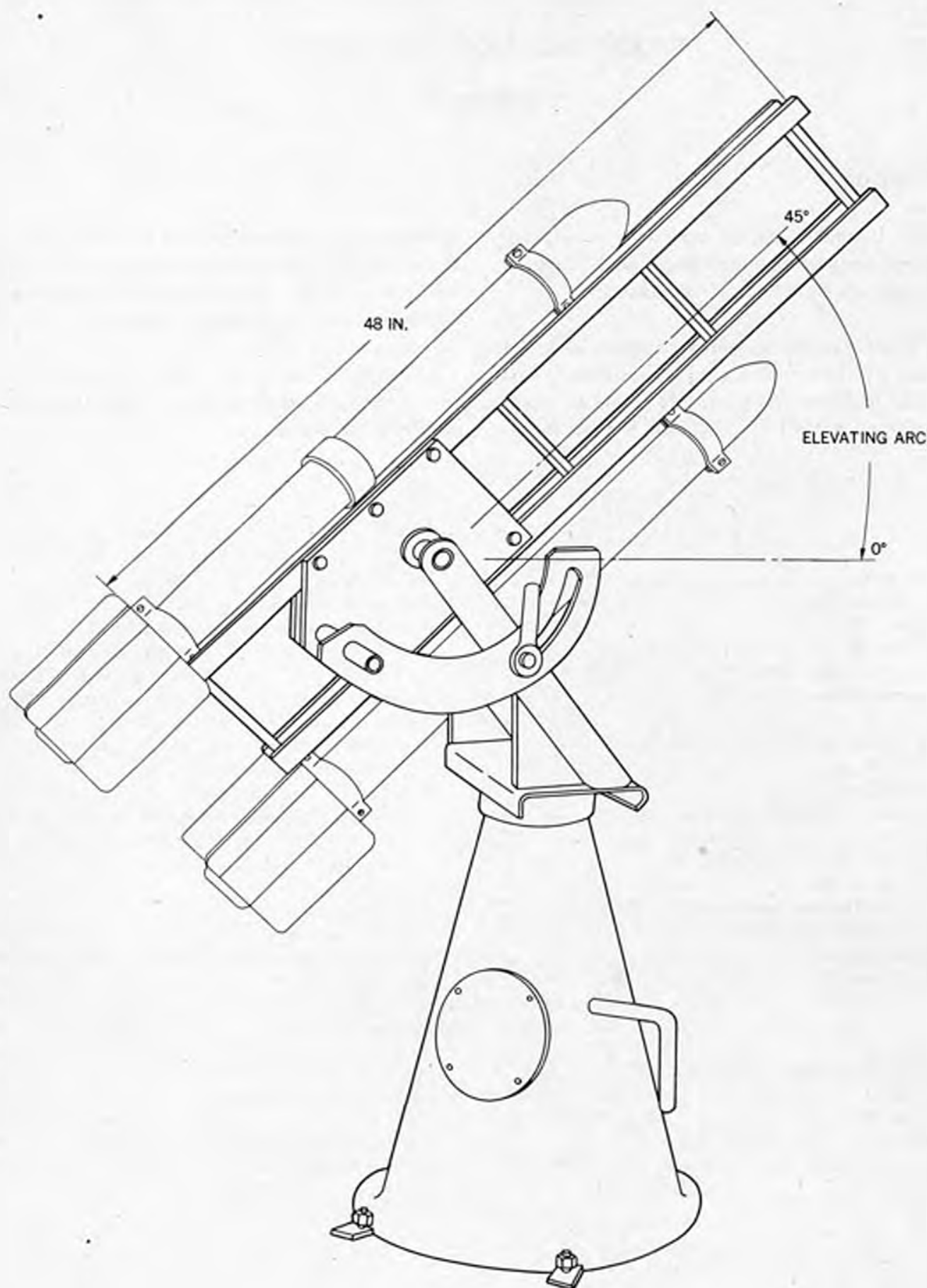
Number of guides.....	2
Launcher ammunition:-	
Service	
3.5-inch Rocket Mk 4 Mods 0-5,8	
3.5-inch Rocket (Flare)*	
3.5-inch Rocket (Signal)*	
Weight:-	
Less ammunition, lb	300
Loaded, lb	365
Major dimensions:-	
Height at maximum elevation, in.	**
Width, in.	**
Length at minimum elevation, in.	**
Length of guides, in.	48
Radius of clearance circle, in.	**
Radius of working circle, in.	**
Guide-laying movements:-	
Train, right, deg	0 to 180
Train, left, deg	0 to 180
Elevation, deg	0 to 45
Firing arcs:-	
Same as guide-laying movements	
Training speed	manually trained
Elevating speed	manually elevated
Firing data:-	
Type	electric

Firing data (cont)	
Voltage at firing pins, v DC	5***
Firing mechanism (only one per launcher)	
Firing Key Mk 21 Mod 4	
Firing Key Mk 25 Mod 4	
Launcher capacity, rounds	2
Firing interval, sec	0.5***
Ballistic data:-	
3.5-inch Rocket Mk 4 Mod 8	
Weight, lb	31.5
Range at 40 degrees elevation, yd	2000
Velocity (end of burning), fps	400
Range table	none
Mount data:-	
Components	
Rocket Launcher	Mk 32 Mod 0
List of drawings	not assigned
General arrangement	not assigned
Adapters and attachments	none
Publication references:-	
Instruction handbook	none
Procurement specifications	none
Installation instructions	none
Spare parts list	none
Catalog of Navy Material	none
3.5-inch Rocket (Surface Window)	OP 1469

*Mk not designated

**Design drawings not available

***Estimated



Rocket Launcher Mk 32 Mod 0

ROCKET LAUNCHER MARK 32 MOD 1

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 32 Mod 1 is an electrically fired weapon for launching signal, flare, or window rockets from land or shipboard.

The launcher is identical to Rocket Launcher Mk 32 Mod 0 except that the length of the guides is increased. The guide assembly, which consists of upper and lower T-slot launching guides, is mounted on a carriage to allow the guides to

rotate in train. An elevating arc with a locking handle is attached to the guide assembly to vary the elevation of the mount. Latches at the rear of each launching guide prevent the rockets from slipping off the guides during loading or elevating.

An electrical receptacle box is mounted at the after end of the guide assembly to provide power for firing the launcher.

DATA

Number of guides 2

Launcher ammunition:-

Service

3.5-inch Rocket Mk 4 Mods 0-5,8

3.5-inch Rocket (Flare)*

3.5-inch Rocket (Signal)*

Weight:-

Less ammunition, lb 325

Loaded, lb 390

Major dimensions:-

Height at maximum elevation, in. **

Width, in. **

Length at minimum elevation, in. **

Length of guides, in. 72

Radius of clearance circle, in. **

Radius of working circle, in. **

Guide-laying movements:-

Train, right, deg 0 to 180

Train, left, deg 0 to 180

Elevation, deg 0 to 45

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed manually elevated

Firing data (cont)

Voltage at firing pins, v DC 5***

Firing mechanism (only one per launcher)

Firing Key Mk 21 Mod 4

Firing Key Mk 25 Mod 4

Launcher capacity, rounds 2

Firing interval, sec 0.5***

Ballistic data:-

3.5-inch Rocket Mk 4 Mod 8

Weight, lb 31.5

Range at 40 degrees elevation, yd 2000

Velocity (end of burning), fps 400

Range table none

Mount data:-

Components

Rocket Launcher Mk 32 Mod 1

List of drawings not assigned

General arrangement not assigned

Adapters and attachments none

Publication references:-

Instruction handbook none

Procurement specifications none

Installation instructions none

Spare parts list none

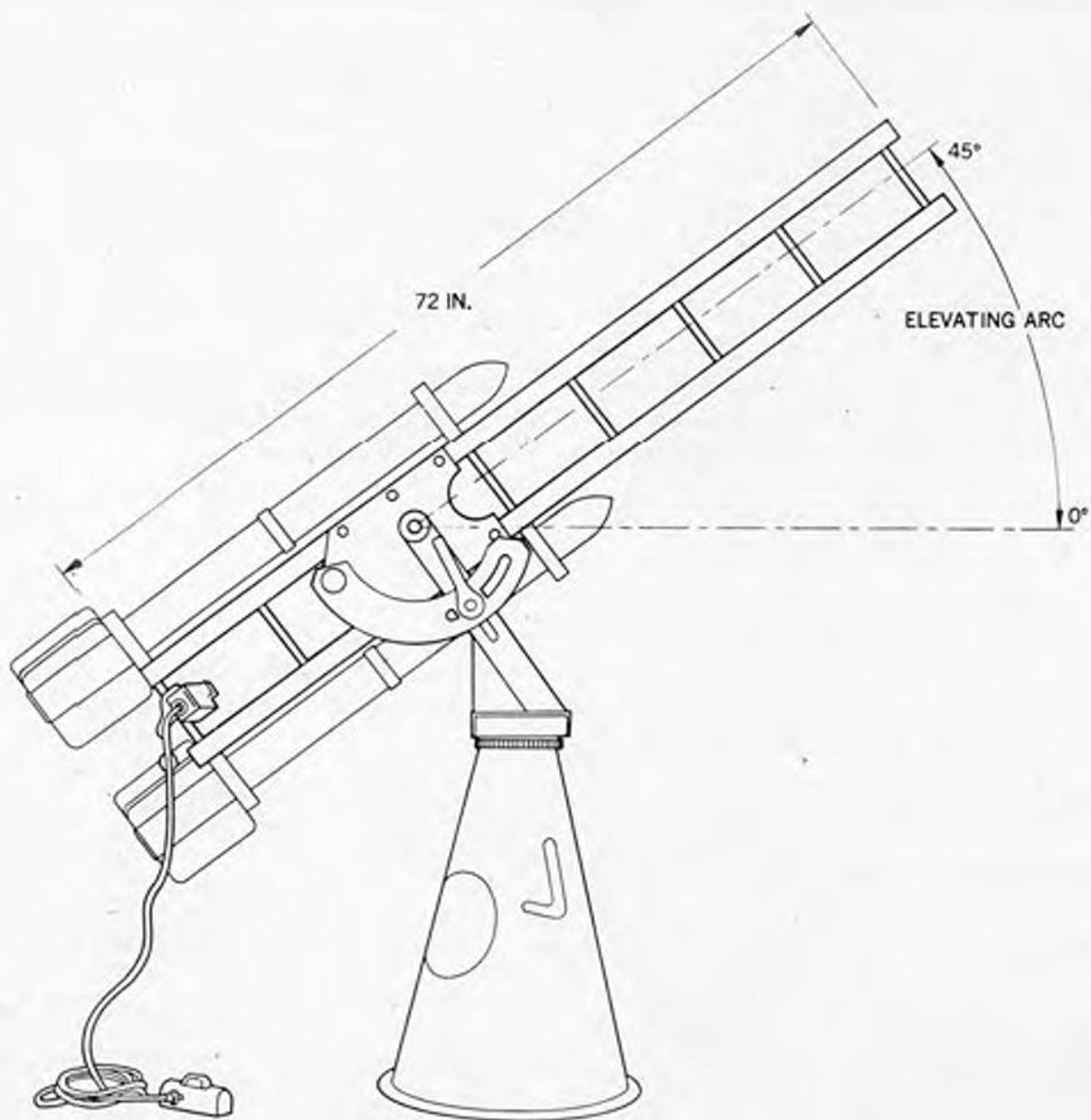
Catalog of Navy Material none

3.5-inch Rocket (Surface Window) OP 1469

*Mk not designated

**Design drawings not available

***Estimated



Rocket Launcher Mk 32 Mod 1

ROCKET LAUNCHER MARK 33 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 33 Mod 0 is an electrically fired weapon for launching window rockets from shipboard.

The launcher consists of a guide assembly and base. The guide assembly has an upper and lower T-slot launching guide made of formed steel. Stops at the after end of each guide prevent the rockets from slipping off the guides during loading and elevating. The guide as-

sembly is supported on a fixed conical base by a carriage which permits the launcher to be trained. The guides are trunnion-supported, and an elevating arc with locking handle is provided to secure the launcher at various degrees of elevation.

Electrical contact from the rocket lead wire and the firing key plug is made by electrical receptacles located at the after end of the guide assembly.

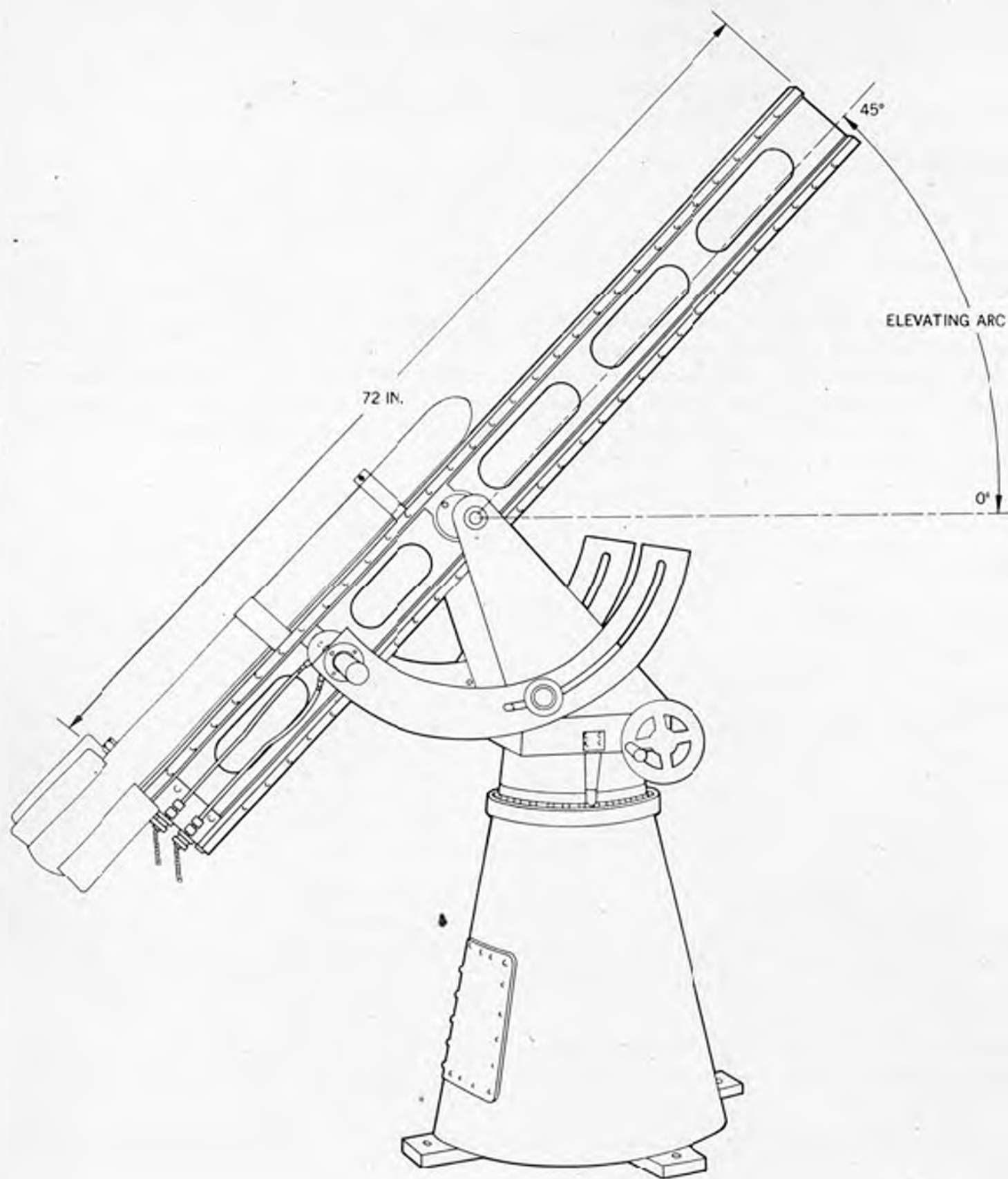
DATA

Number of guides 2
 Launcher ammunition:-
 Service
 3.5-inch Rocket Mk 4 Mods 0-5,8
 Weight:-
 Less ammunition, lb 335
 Loaded, lb 400
 Major dimensions:-
 Height at maximum elevation, in. *
 Width, in. *
 Length at minimum elevation, in. *
 Length of guides, in. 72
 Radius of clearance circle, in. *
 Radius of working circle, in. *
 Guide-laying movements:-
 Train, deg 0 to 360
 Elevation, deg 0 to 45
 Firing arcs:-
 Same as guide-laying movements
 Training speed manually trained
 Elevating speed manually elevated
 Firing data:-
 Type electric
 Voltage at firing pins, v DC 5**

Firing data (cont)
 Firing mechanism Firing Key Mk 21 Mod 4
 Launcher capacity, rounds 2
 Firing interval, sec 0.5**
 Ballistic data:-
 3.5-inch Rocket Mk 4 Mod 8
 Weight, lb 31.5
 Range at 40 degrees elevation, yd 2000
 Velocity (end of burning), fps 400
 Range table none
 Mount data:-
 Components
 Rocket Launcher Mk 33 Mod 0
 List of drawings Sk 109464 (unsigned)
 General arrangement Dr 438116 (unsigned)
 Adapters and attachments none
 Publication references:-
 Instruction handbook none
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 3.5-inch Rocket (Surface Window) OP 1469

*Design drawings not available

**Estimated



Rocket Launcher Mk 33 Mod 0

ROCKET LAUNCHER MARK 34 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Rocket Launcher Mk 34 Mod 0 is a design for a three-guide weapon capable of firing window rockets. This design, superseded by that for Rocket Launcher Mk 36 Mod 0, con-

sists of a guide assembly composed of three modified aircraft rocket launchers mounted on a steel framework with fixed elevation and train.

DATA

Number of guides 3
 Launcher ammunition:-
 Service
 3.5-inch Rocket Mk 4 Mods 0-5,8
 Weight:-
 Less ammunition, lb *
 Loaded, lb *
 Major dimensions:-
 Height, in. *
 Width, in. *
 Length, in. *
 Length of guides, in. *
 Radius of clearance circle, in. *
 Radius of working circle, in. *
 Guide-laying movements:-
 Train, deg *
 Elevation, deg *
 Firing arcs:-
 Train, deg *
 Elevation, deg *
 Training speed *
 Elevating speed *

Firing data:-

Type electric
 Voltage at firing pins *
 Firing mechanism *
 Launcher capacity, rounds 3
 Firing interval, sec *

Ballistic data:-

3.5-inch Rocket (Surface Window) Mk 4 Mod 8
 Weight, lb 31.5
 Range at 40 degrees elevation, yd 2000
 Velocity (end of burning), fps 400
 Range table none

Mount data:-

Components
 Rocket Launcher Mk 34 Mod 0
 List of drawings not assigned
 General arrangement not assigned
 Adapter and attachments none

Publication references:-

Instruction handbook none
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 3.5-inch Rocket (Surface Window) OP 1469

*Data not available

ROCKET LAUNCHER MARK 35 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 35 Mod 0 is an electrically fired weapon for laying ship-to-shore barrages from landing craft and torpedo boats.

The launcher consists of three I-beam-shaped guides with a T-slot type guide on the upper and lower surface. The guides are mounted parallel to each other on the horizontal leg of an inverted L-shaped assembly. The vertical leg of the supporting assembly fits into a pedestal-type

base that is bolted to the deck. The base is identical to that used with Rocket Launcher Mk 50 Mods 0 and 1, so that the guide assemblies of both launchers are interchangeable insofar as assembly to the base is concerned. The guide supporting assembly can be rotated in the base to train the mount; a manually driven worm gear varies elevation.

Electrical contact for firing is made by plug receptacles at the after end of the guides.

DATA

Number of guides 6

Launcher ammunition:-

Service

3.5-inch Rocket Mk 1 Mod 0; Mk 8 Mod 0

5.0-inch Rocket Mk 1 Mods 0-5; Mk 4 Mods 0 and 1

Drill

3.5-inch Rocket Mk 2 Mod 0

5.0-inch Rocket Mk 3 Mod 0; Mk 6 Mod 0

Smoke

3.5-inch Rocket Mk 3 Mods 0 and 1

Target

5.0-inch Rocket Mk 2 Mod 0; Mk 5 Mod 0

Illuminating

5.0-inch Rockets with button-type suspension lugs

Weight:-

Less ammunition, lb 628

Loaded, lb 1260

Major dimensions:-

Height at maximum elevation, in. 72

Width, in. 63

Length, in. 90

Length of guides, in. 90

Radius of clearance circle, in. 70

Radius of working circle, in. 98

Guide-laying movements:-

Train unlimited*

Elevation, deg 0 to 90

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed manually elevated

Firing data:-

Type electric

Voltage at firing pins, v AC or DC 6 to 24**

Firing mechanism Firing Panel Mk 13 Mod 1

Launcher capacity, rounds 6

Firing interval, sec 0.5***

Ballistic data:-

3.5-inch Rocket Mk 8 Mod 0

Weight, lb 55.2

Range at 17 degrees elevation, yd 5430

Velocity (end of burning), fps 1140

Range table none

5.0-inch Rocket Mk 4 Mod 0

Weight, lb 134

Range at 17 degrees elevation, yd 5550

Velocity (end of burning), fps 1540

Range table none

Mount data:-

Components

Rocket Launcher Mk 35 Mod 0

List of drawings Sk 166310

General arrangement Dr 425050, 1

Adapters and attachments none

Publication references:-

Instruction handbook OP 1244 (Second Revision)

Procurement specifications none

Installation instructions none

Spare parts list none

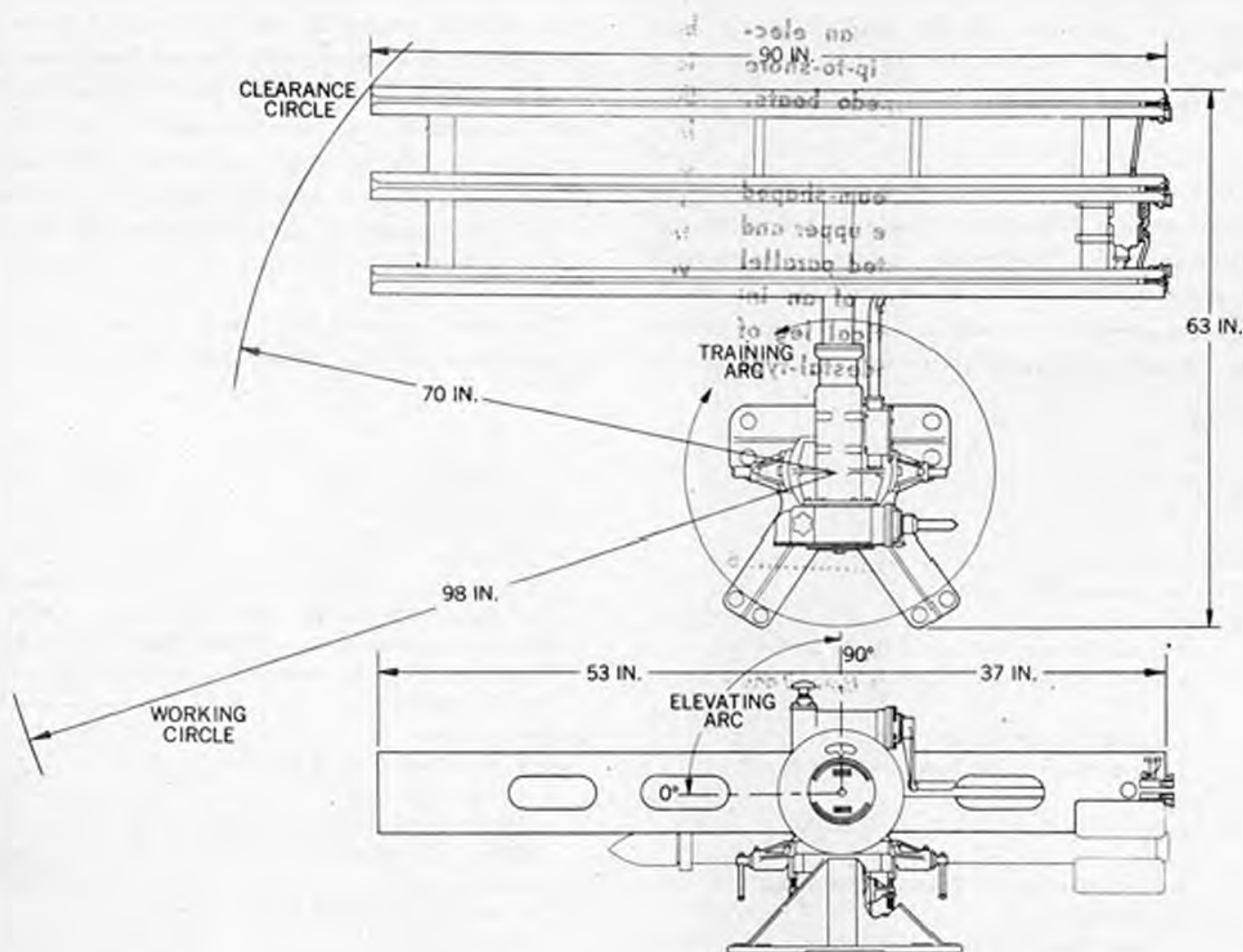
Catalog of Navy Material none

Aircraft Rockets OP 1157

*Train limited only by length of power lead

**Varies with installation

***Either single rounds or two-rocket salvos



Rocket Launcher Mk 35 Mod 0

ROCKET LAUNCHER MARK 36 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 36 Mod 0 is an electrically fired weapon for launching lug-band rockets in large numbers to lay intense ship-to-shore barrages. The launcher consists of a rail assembly of four modified Aircraft Rocket Launchers Mk 4 mounted at a fixed angle of elevation on a base frame assembly. A scoop-type blast de-

flector extends across the width of the launcher behind the guides.

Electrical firing current is transmitted from the firing panel to each guide through a plug receptacle.

DATA

Number of guides 4
Launcher ammunition:-

Service

- 3.5-inch Rocket Mk 1 Mod 0
- 3.5-inch Rocket Mk 8 Mod 0
- 5.0-inch Rocket Mk 1 Mods 0-5
- 5.0-inch Rocket Mk 4 Mod 0
- 5.0-inch Rocket Mk 4 Mod 1

Drill

- 3.5-inch Rocket Mk 2 Mod 0
- 5.0-inch Rocket Mk 3 Mod 0
- 5.0-inch Rocket Mk 6 Mod 0

Smoke

- 3.5-inch Rocket Mk 3 Mods 0,1

Target

- 5.0-inch Rocket Mk 2 Mod 0
- 5.0-inch Rocket Mk 5 Mod 0

Illuminating

- 5.0-inch rockets with button-type suspension lugs

Weight:-

- Less ammunition, lb 600
- Loaded, lb 920*

Major dimensions:-

- Height, in. 60
- Width, in. 32
- Length, in. 94
- Length of guides, in. 70
- Radius of clearance circle non-trainable
- Radius of working circle non-trainable

Guide-laying movements:-

- Train non-trainable
- Elevation (fixed angle), deg 45

Firing arcs:-

- Same as guide-laying movements

Training speed non-trainable
Elevating speed fixed elevation

Firing data:-

- Type electric
- Voltage at firing pins, v AC or DC 12 to 24*
- Firing mechanism Firing Panel Mk 17 Mod 0
- Launcher capacity, rounds 4
- Firing interval, sec 0.5**

Ballistic data:-

- 3.5-inch Rocket Mk 8 Mod 0
 - Weight, lb 55.2
 - Range at 17 degrees elevation, yd 5430
 - Velocity (end of burning), fps 1140
 - Range table none
- 5.0-inch Rocket Mk 4 Mod 0
 - Weight, lb 134
 - Range at 17 degrees elevation, yd 5550
 - Velocity (end of burning), fps 1540
 - Range table none

Mount data:-

- Components
 - Rocket Launcher Mk 36 Mod 0
 - List of drawings Sk 165065
 - General arrangement Dr 439789

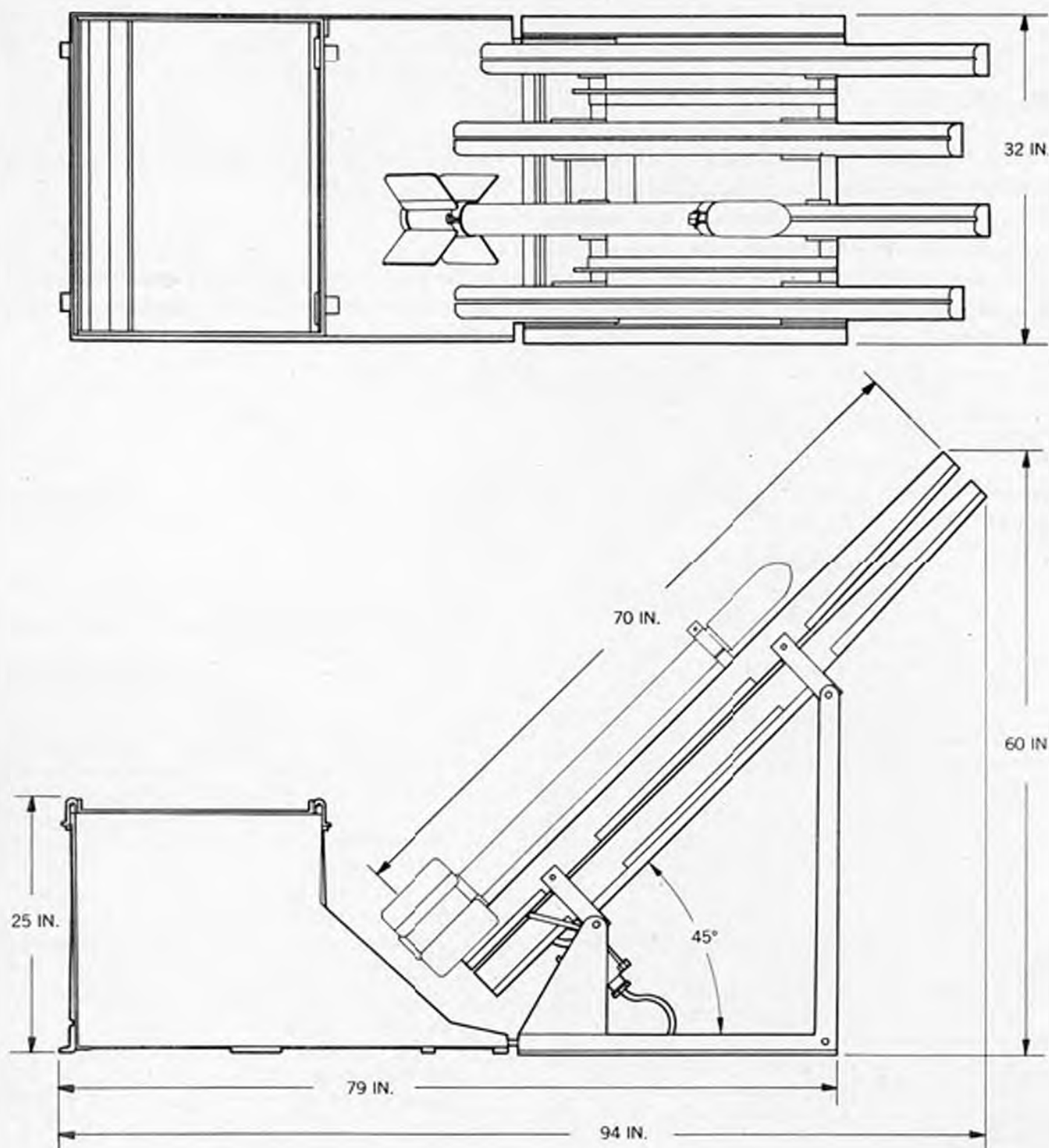
Adapters and attachments none

Publication references:-

- Instruction handbook OP 1318
- Procurement specifications OS 3565
- Installation instructions none
- Spare parts list none
- Catalog of Navy Material none
- 3.5-inch and 5.0-inch Aircraft Rockets OP 1157

*Varies with installation

**Estimated



Rocket Launcher Mk 36 Mod 0

ROCKET LAUNCHER MARK 40 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Rocket Launcher Mk 40 Mod 0 is an electrically fired weapon for launching rockets on shore in difficult terrain.

The single guide of this launcher consists of a steel tube with three internal stainless steel rails. The tube is designed to be mounted on an

Army M1917A1 .30-caliber machine gun tripod. The launcher is breech-loaded with the aid of a seating mechanism, except at extreme elevations.

Electrical contact for firing is made by a two-conductor rubber insulated firing line that is connected to the firing key. This line is permanently attached to the launcher firing contacts.

DATA

Number of guides 1

Launcher ammunition:-

Service

3.5-inch Rocket (Surface Spin-stabilized)

Weight:-

Less ammunition, lb 26

Loaded, lb *

Major dimensions:-

Height at maximum elevation, in. 45**

Width, in. 39**

Length, in. 49**

Length of guide, in. 35

Radius of clearance circle, in. 30

Radius of working circle, in. 50**

Guide-laying movements:-

Train unlimited

Elevation, deg -13 to 67

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed manually elevated

Firing data:-

Type electric

Firing data (cont)

Voltage at firing pins, v DC 5**

Firing mechanism Firing Key Mk 22 Mod 1

Launcher capacity, rounds 1

Firing interval, sec 0.5**

Ballistic data:-

3.5-inch Rocket (Surface Spin-stabilized)

Weight, lb *

Range, yd *

Velocity (end of burning), fps *

Range table *

Mount data:-

Components

Rocket Launcher Mk 40 Mod 0

List of drawings Sk 166317

General arrangement Dr 425071

Dr 425107

Adapters and attachments none

Publication references:-

Instruction handbook none

Procurement specifications none

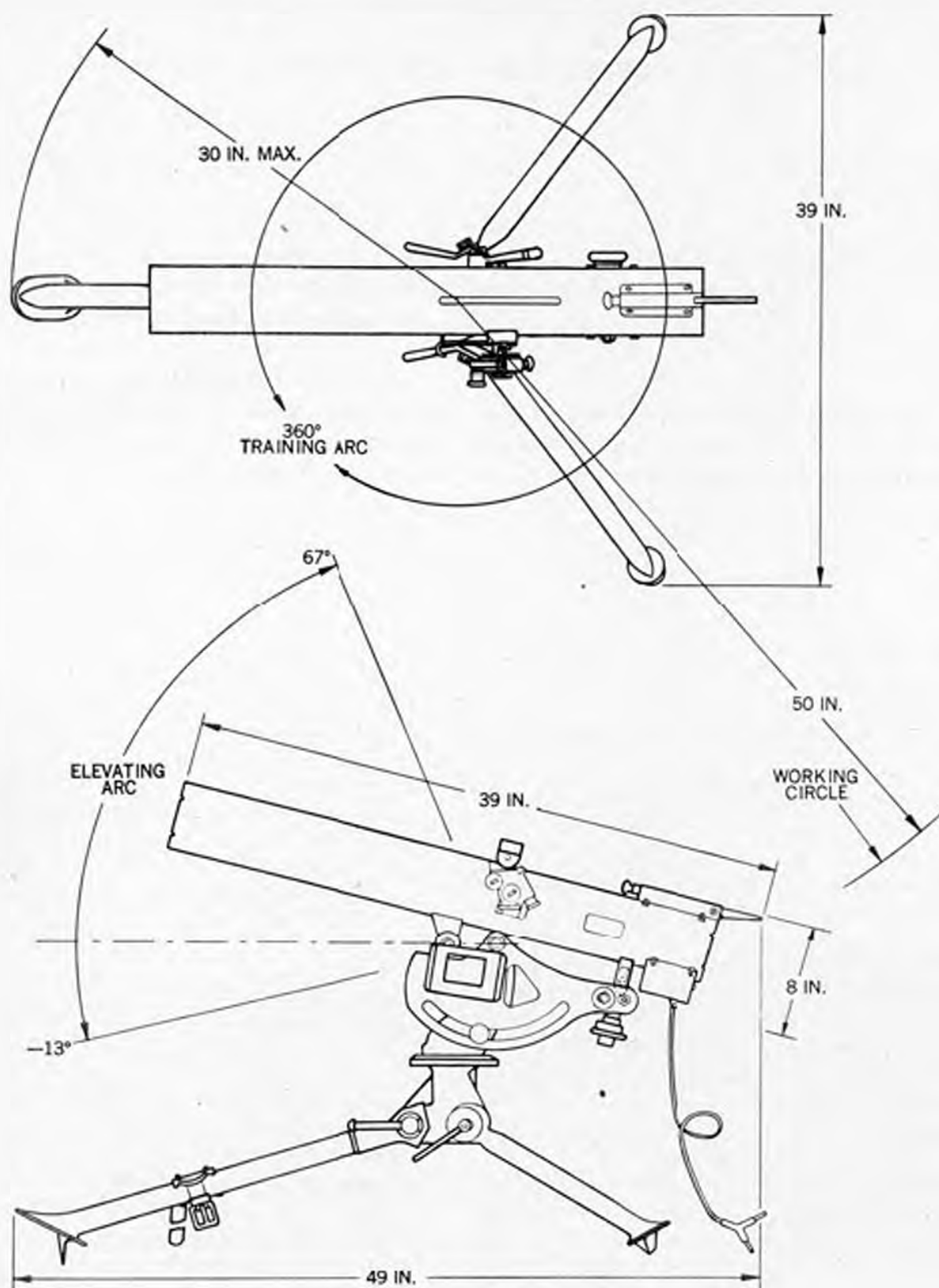
Installation instructions none

Spare parts list none

Catalog of Navy Material none

*Data not available

**Estimated



Rocket Launcher Mk 40 Mod 0

ROCKET LAUNCHER MARK 19 MOD 0

UNDER DEVELOPMENT

DESCRIPTION

Rocket Launcher Mk 19 Mod 0 is an electrically fired subcaliber attachment for Rocket Launcher Mk 108. The weapon is tubular and fits inside the guide of Rocket Launcher Mk 108. When Rocket Launcher Mk 19 is installed, Rocket Launcher Mk 108 is capable of firing six 4.0-inch rockets for antisubmarine target practice.

The launcher consists of a tube and a spacer. The spacer is a cylindrical weldment that is installed in the after section of the guide of Rocket

Launcher Mk 108; this spacer supports the tube and positions it so that the muzzle of the tube is even with the guide of Rocket Launcher Mk 108. The tube consists of six radially positioned guides separated by internal supports radiating from a central core. The core contains a sequential firing mechanism.

Electrical power for firing is transmitted from Rocket Launcher Mk 108 through the spacer to the tube core.

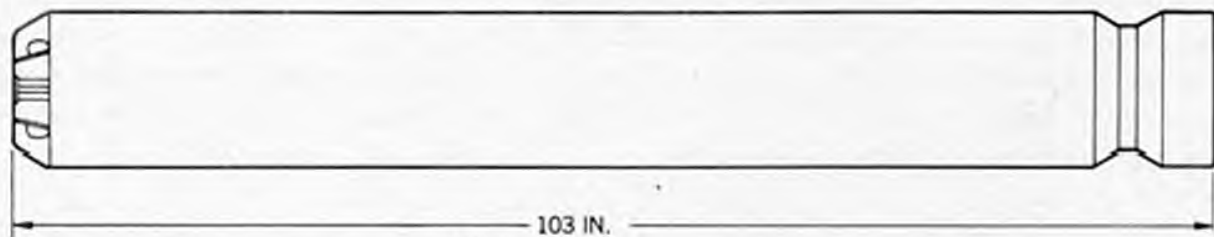
DATA

Number of guides 6
 Launcher ammunition:-
 Service
 4.0-inch Rocket Mk 1 Mod 0
 Weight:-
 Less ammunition, lb 673
 Loaded, lb 866
 Major dimensions:-
 Outside diameter, in. 12.75
 Length, in. 166
 Length of guides, in. 88
 Radius of clearance circle... same as parent launcher
 Radius of working circle... same as parent launcher
 Guide-laying movements:-
 Train..... same as parent launcher
 Elevation..... same as parent launcher
 Firing arcs:-
 Same as guide-laying movements
 Training speed..... same as parent launcher
 Elevating speed..... same as parent launcher
 Firing data:-
 Type..... electric

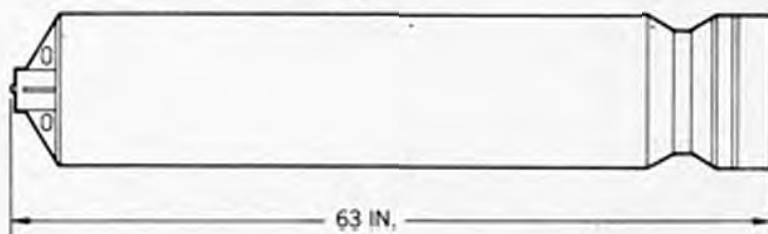
Firing data (cont)
 Voltage at firing pins, v AC 20
 Firing mechanism Firing Panel Mk 24 Mod 0
 Launcher capacity, rounds 6
 Firing interval..... manual firing
 Ballistic data:-
 4.0-inch Rocket Mk 1 Mod 0
 Weight, lb 32.12
 Range, yd 800
 Velocity (end of burning), fps 300*
 Range table..... none
 Mount data:-
 Components
 Rocket Launcher..... Mk 19 Mod 0
 List of drawings LD 261414
 General arrangement Dr 516222
 Adapters and attachments none
 Publication references:-
 Instruction handbook OP 1894
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none

* Estimated

SPACER



TUBE



Rocket Launcher Mk 19 Mod 0

ROCKET LAUNCHER MARK 1 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 1 Mod 0 is an electrically fired weapon for laying rocket barrages from the port side of landing craft.

The launcher consists of 12 sheet-metal guides welded together in four banks of three sets each. This guide assembly is supported by a trunnion frame that is welded or bolted to the deck of the

ship. The trunnions permit the guide assembly to be set at varying degrees of elevation. The trunnion arms can be tilted forward from the vertical position to stow the launcher.

Electrical contact for firing is made by two knife-edge contacts in each guide.

DATA

Number of guides 12

Launcher ammunition:-

Service

4.5-inch Rocket Mk 1 Mod 0

Practice

4.5-inch Rocket Mk 2 Mod 0

Drill

4.5-inch Rocket Mk 3 Mod 0

Smoke

4.5-inch Rocket Mk 4 Mod 0

4.5-inch Rocket Mk 4 Mod 1

4.5-inch Rocket Mk 4 Mod 2

Weight:-

Less ammunition, lb 315

Loaded, lb 675

Major dimensions:-

Height at maximum elevation, in. 61

Width, in. 24

Length at minimum elevation, in. 60

Length of guides, in. 60

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation, deg 0 to 47

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed manually elevated

Firing data:-

Type electric

Voltage at firing pins (varies with installation)

AC or DC 6 to 24

Firing mechanism (only one per launcher)

Firing Panel Mk 9

Firing Panel Mk 4

Launcher capacity, rounds 12

Firing interval (salvo)

With Firing Panel Mk 4, sec 0.6*

With Firing Panel Mk 9, sec 0.4*

Ballistic data:-

4.5-inch Rocket Mk 1 Mod 0

Weight, lb 28.7

Range at 45 degrees elevation, yd 1100

Velocity (end of burning), fps 355

Range table OP 1111

Mount data:-

Components

Rocket Launcher Mk 1 Mod 0

List of drawings LD 91300

General arrangement Dr 330032

Adapters and attachments none

Publication references:-

Instruction handbook OP 1003 (First Revision)

Procurement specifications OS 2814

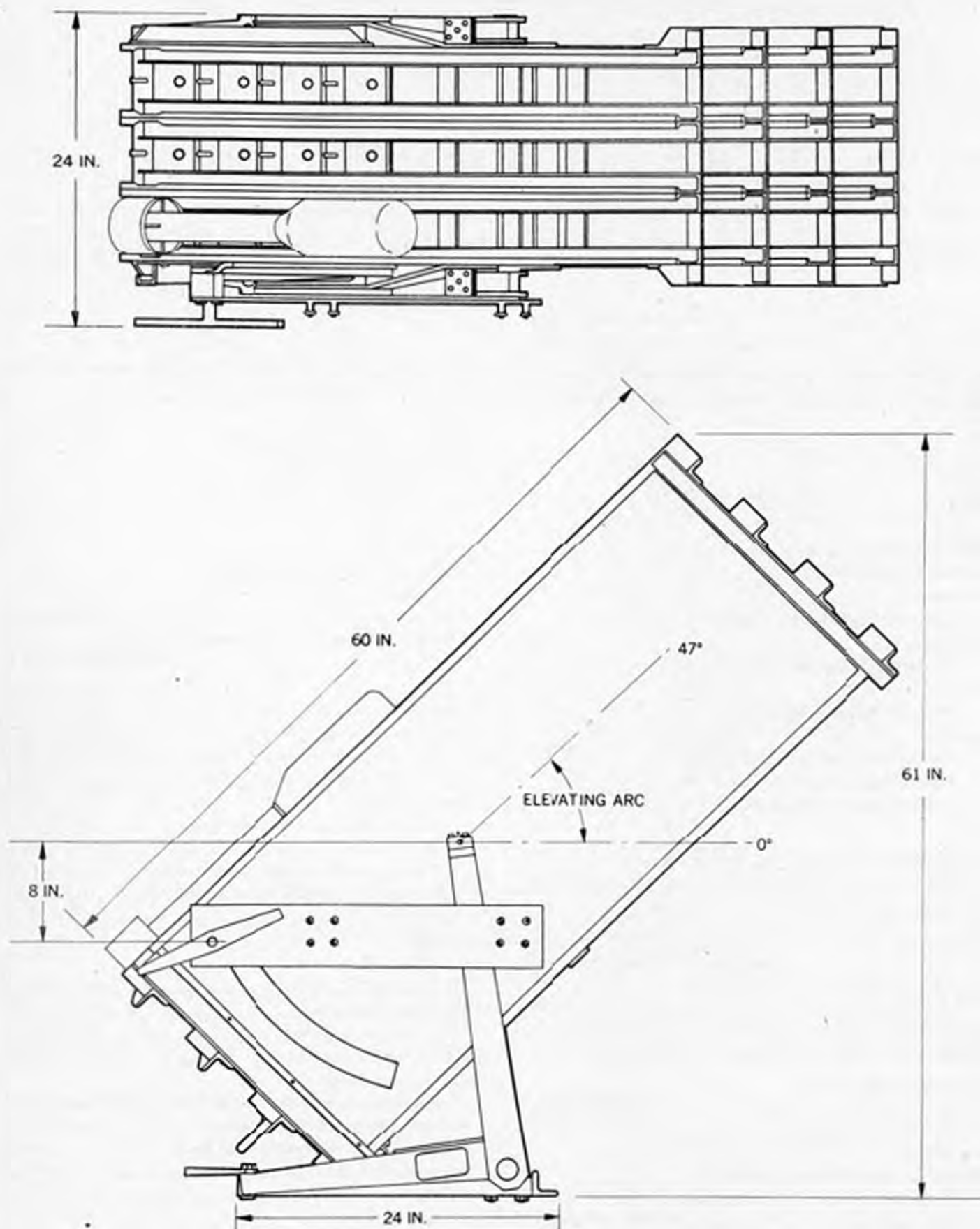
Installation instructions none

Spare parts list none

Catalog of Navy Material none

4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 1 Mod 0

ROCKET LAUNCHER MARK 1 MOD 1

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 1 Mod 1 is an electrically fired weapon for laying rocket barrages from landing craft. The launcher is identical to Rocket Launcher Mk 1 Mod 0 except that it is designed for starboard installation.

The launcher consists of 12 sheet-metal guides welded together in four banks of three sets each. The guide assembly is supported by a

trunnion frame that is welded or bolted to the deck of the ship. The trunnions permit the guide assembly to be set at varying degrees of elevation. The trunnion arms can be tilted forward from the vertical position to stow the launcher.

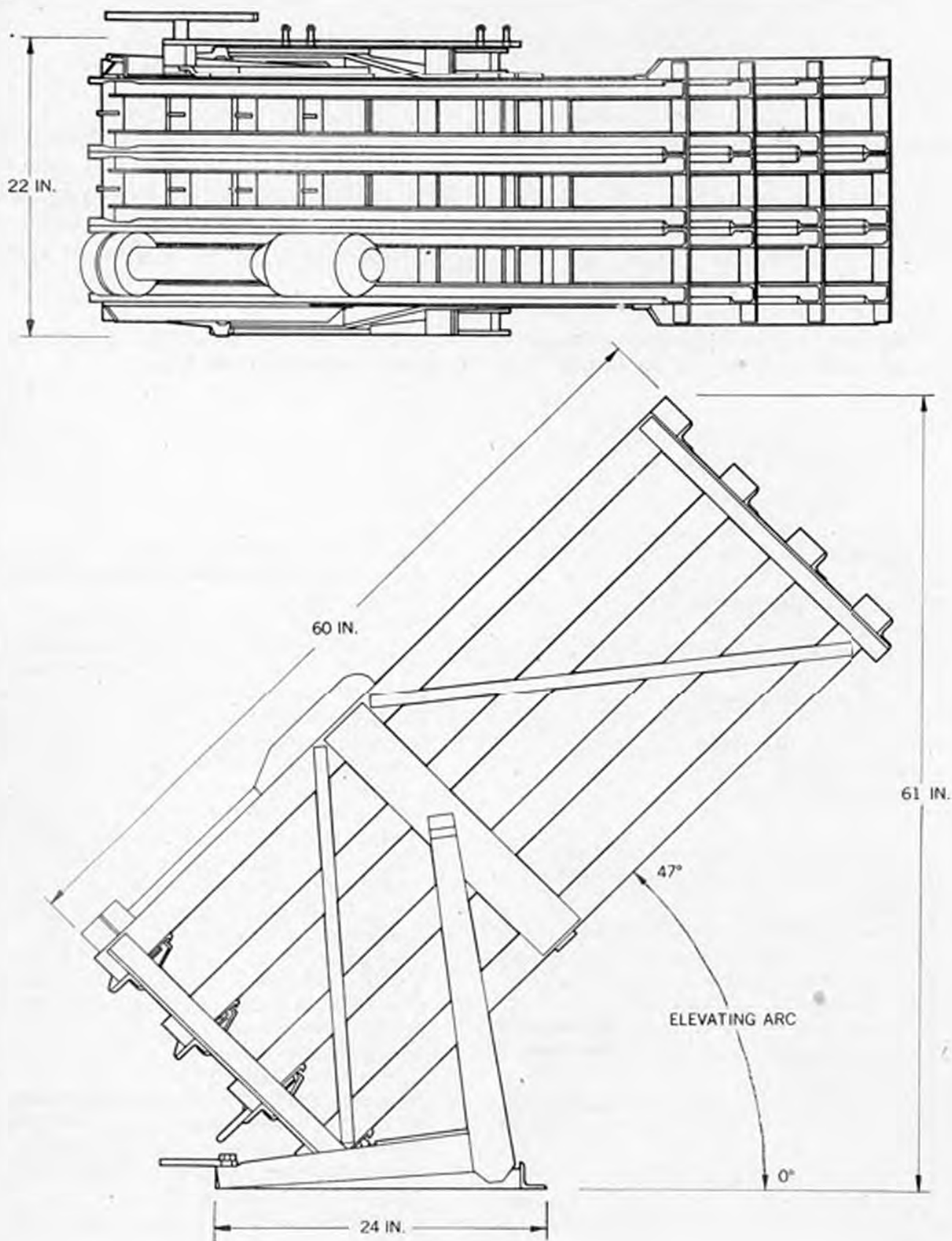
Electrical contact for firing is made by two knife-edge contacts in each guide.

DATA

Number of guides	12
Launcher ammunition:-	
Service	
4.5-inch Rocket Mk 1 Mod 0	
Practice	
4.5-inch Rocket Mk 2 Mod 0	
Drill	
4.5-inch Rocket Mk 3 Mod 0	
Smoke	
4.5-inch Rocket Mk 4 Mod 0	
4.5-inch Rocket Mk 4 Mod 1	
4.5-inch Rocket Mk 4 Mod 2	
Weight:-	
Less ammunition, lb	315
Loaded, lb	675
Major dimensions:-	
Height at maximum elevation, in.	61
Width, in.	24
Length at minimum elevation, in.	60
Length of guides, in.	60
Radius of clearance circle.....	non-trainable
Radius of working circle.....	non-trainable
Guide-laying movements:-	
Train.....	non-trainable
Elevation, deg	0 to 47
Firing arcs:-	
Same as guide-laying movements	
Training speed	non-trainable
Elevating speed.....	manually elevated

Firing data:-	
Type	electric
Voltage at firing pins (varies with installation)	
v AC or DC	6 to 24
Firing mechanism (only one per launcher)	
Firing Panel Mk 9	
Firing Panel Mk 4	
Launcher capacity, rounds	12
Firing interval (salvo)	
With Firing Panel Mk 4, sec	0.6*
With Firing Panel Mk 9, sec	0.4*
Ballistic data:-	
4.5-inch Rocket Mk 1 Mod 0	
Weight, lb	28.7
Range at 45 degrees elevation, yd	1100
Velocity (end of burning), fps	355
Range table	OP 1111
Mount data:-	
Components	
Rocket Launcher.....	Mk 1 Mod 1
List of drawings	LD 91301
General arrangement	Dr 330033
Adapters and attachments	none
Publication references:-	
Instruction handbook.....	OP 1003 (First Revision)
Procurement specifications	OS 2814
Installation instructions	none
Spare parts list.....	none
Catalog of Navy Material	none
4.5-inch Rockets	OP 1111

*Estimated



Rocket Launcher Mk 1 Mod 1

ROCKET LAUNCHER MARK 2 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 2 Mod 0 is a portable, expendable, electrically fired weapon for laying a rocket barrage from shipboard or land.

The launcher frame is constructed of plywood and supports three hardwood launching guides.

The cover folds under the launcher to form a support for the forward end. The guides are hinged at the after end to permit adjustment of the firing angle.

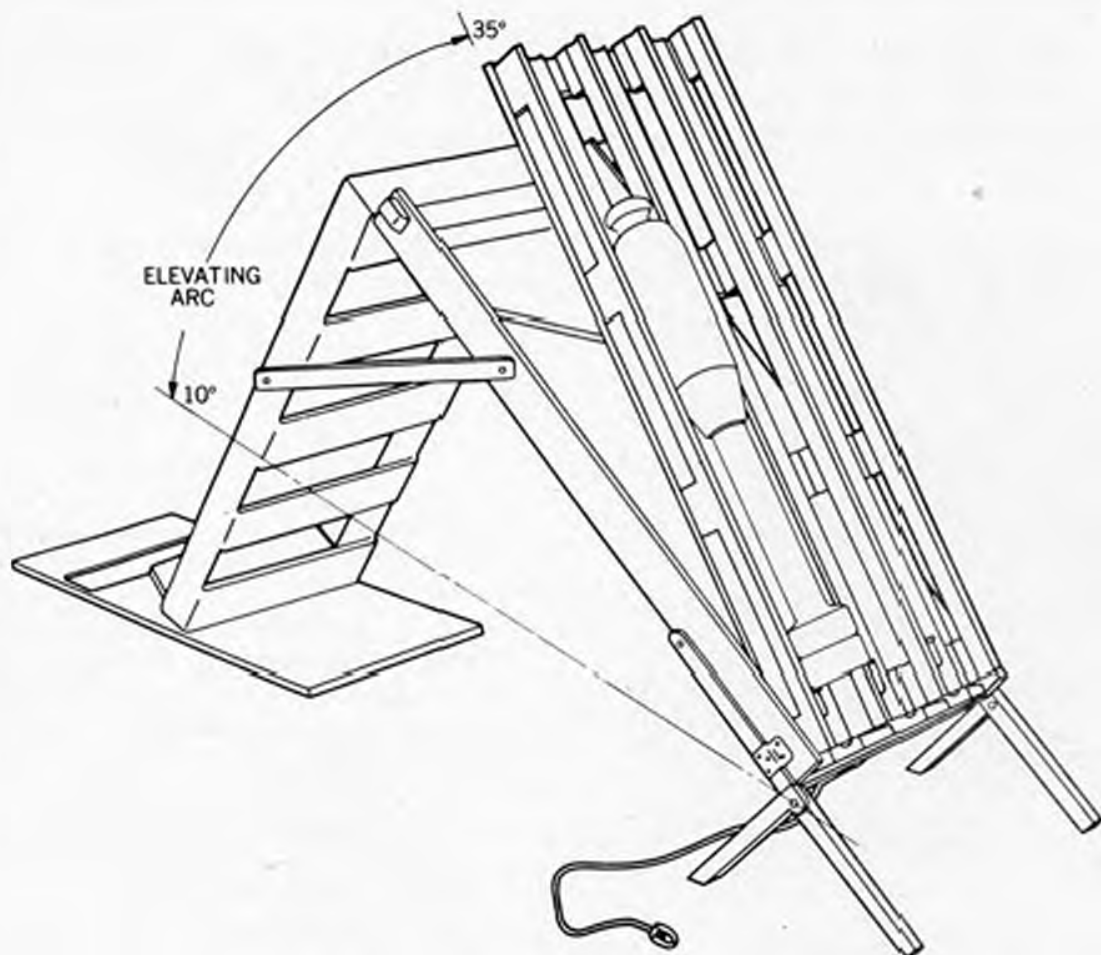
Electrical contact for firing is made by two knife-edge contacts in the guide.

DATA

Number of guides 3
 Launcher ammunition:-
 Service
 4.5-inch Rocket Mk 1 Mod 0
 Practice
 4.5-inch Rocket Mk 2 Mod 0
 Drill
 4.5-inch Rocket Mk 3 Mod 0
 Smoke
 4.5-inch Rocket Mk 4 Mod 0
 4.5-inch Rocket Mk 4 Mod 1
 4.5-inch Rocket Mk 4 Mod 2
 Weight:-
 Less ammunition, lb 47
 Loaded, lb 137
 Major dimensions:-
 Height at maximum elevation, in. 35*
 Width, in. 18*
 Length, in. 72*
 Length of guide, in. 48*
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation, deg 10 to 35
 Firing arcs:-
 Same as guide-laying movements

Training speed non-trainable
 Elevating speed manually elevated
 Firing data:-
 Type electric
 Voltage at firing pins, v DC 5*
 Firing mechanism Firing Key (Magneto) Mk 21
 Launcher capacity, rounds 3
 Firing interval, sec 0.5*
 Ballistic data:-
 4.5-inch Rocket Mk 1 Mod 0
 Weight, lb 28.7
 Range at 45 degrees elevation, yd 1100
 Velocity (end of burning), fps 355
 Range table OP 1111
 Mount data:-
 Components
 Rocket Launcher Mk 2 Mod 0
 List of drawings not assigned
 General arrangement not assigned
 Adapters and attachments none
 Publication references:-
 Instruction handbook none
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 2 Mod 0

ROCKET LAUNCHER MARK 2 MOD 1

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 2 Mod 1 is a portable, expendable, electrically fired weapon for laying a rocket barrage from a flat surface on shipboard or land.

The launcher consists of a removable plywood cover equipped with rope handles, and a set of three

hardwood guides hinged to a plywood base. The launcher can be stowed in a loaded condition, and can be carried by two men. At least 25 to 30 rounds can be fired from the launcher before it is expended.

Electrical contact for firing is made by two knife-edge contacts in each guide.

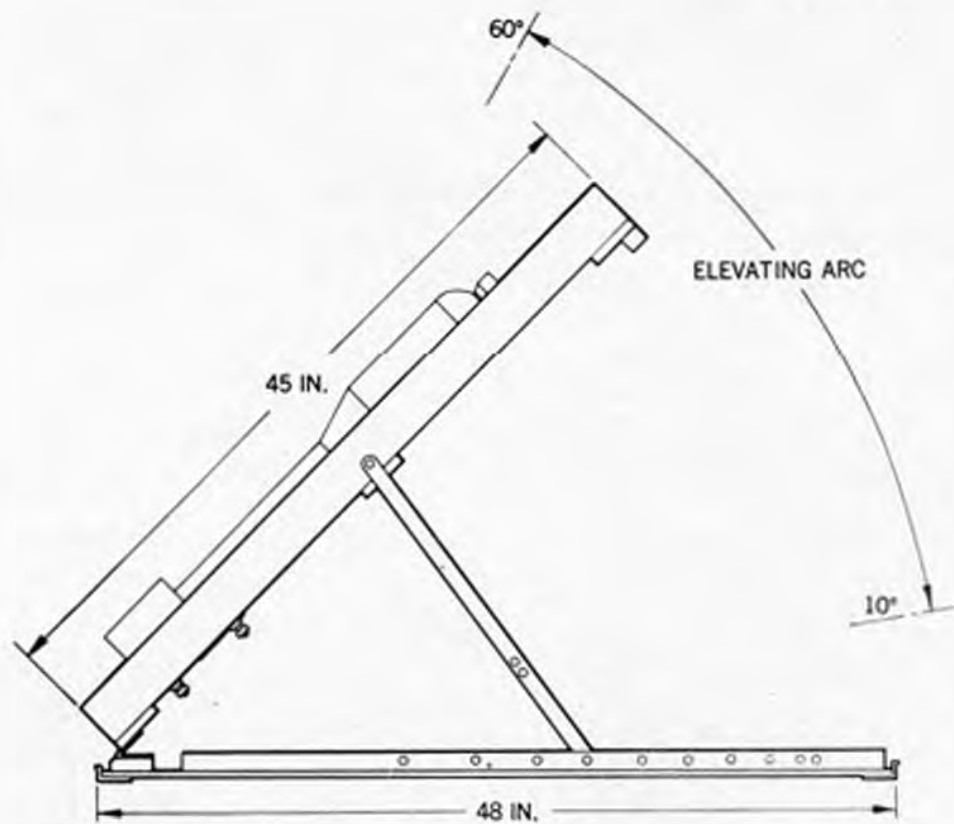
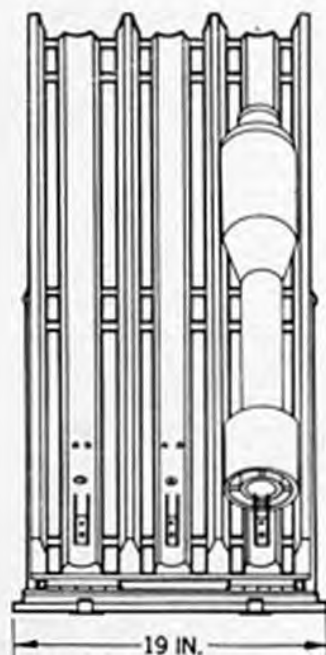
DATA

Number of guides	3
Launcher ammunition:-	
Service	
4.5-inch Rocket Mk 1 Mod 0	
Practice	
4.5-inch Rocket Mk 2 Mod 0	
Drill	
4.5-inch Rocket Mk 3 Mod 0	
Smoke	
4.5-inch Rocket Mk 4 Mod 0	
4.5-inch Rocket Mk 4 Mod 1	
4.5-inch Rocket Mk 4 Mod 2	
Weight:-	
Less ammunition, lb	45
Loaded, lb	135
Major dimensions:-	
Height at maximum elevation, in.	39
Width, in.	19
Length in stowed position, in.	48
Length of guide, in.	45
Radius of clearance circle	non-trainable
Radius of working circle	non-trainable
Guide-laying movements:-	
Train	non-trainable
Elevation, deg	17.5 to 60
Firing arcs:-	
Same as guide-laying movements	
Training speed	non-trainable

Elevating speed	manually elevated
Firing data:-	
Type	electric
Voltage at firing pins, v DC	5*
Firing mechanism (only one per launcher)	
Firing Key Mk 25 Mod 1	
Firing Key Mk 21 Mod 1**	
Launcher capacity, rounds	3
Firing interval, sec	6*
Ballistic data:-	
4.5-inch Rocket Mk 1 Mod 0	
Weight, lb	28.7
Range at 45 degrees elevation, yd	1100
Velocity (end of burning), fps	355
Range table	OP 1111
Mount data:-	
Components	
Rocket Launcher	Mk 2 Mod 1
List of drawings	Sk 108992
General arrangement	Dr 394789
Adapters and attachments	none
Publication references:-	
Instruction handbook	OP 1127
Procurement specifications	OS 2998
Installation instructions	none
Spare parts list	none
Catalog of Navy Material	none
4.5-inch Rockets	OP 1111

*Estimated

**Obsolete



Rocket Launcher Mk 2 Mod 1

ROCKET LAUNCHER MARK 3 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 3 Mod 0 is a portable, expendable, electrically fired weapon for laying a rocket barrage from advanced positions on land.

The major components of the launcher are constructed of wood, and it consists of a single guide supported by two sets of legs. The forward

legs are hinged to the guide; the after legs are attached to the rear of the launcher and have secondary supports. Straps are attached to the launcher to facilitate carrying the weapon in the stowed position.

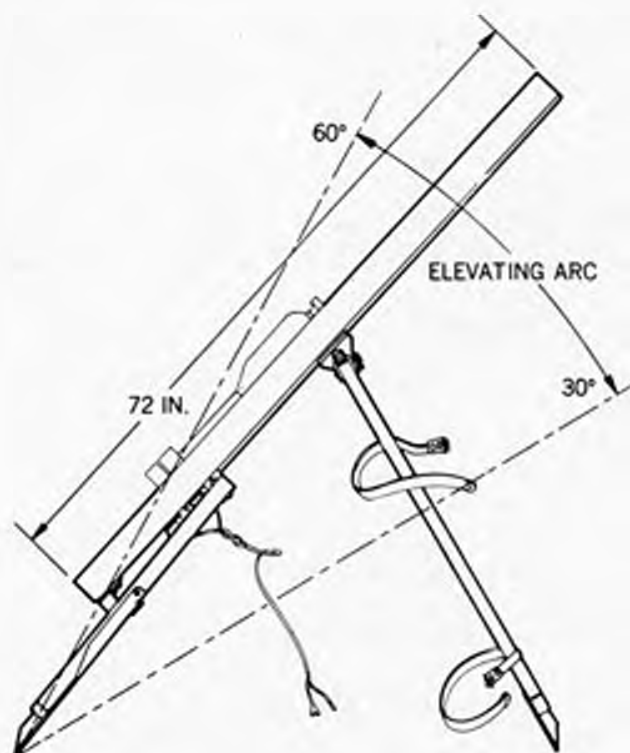
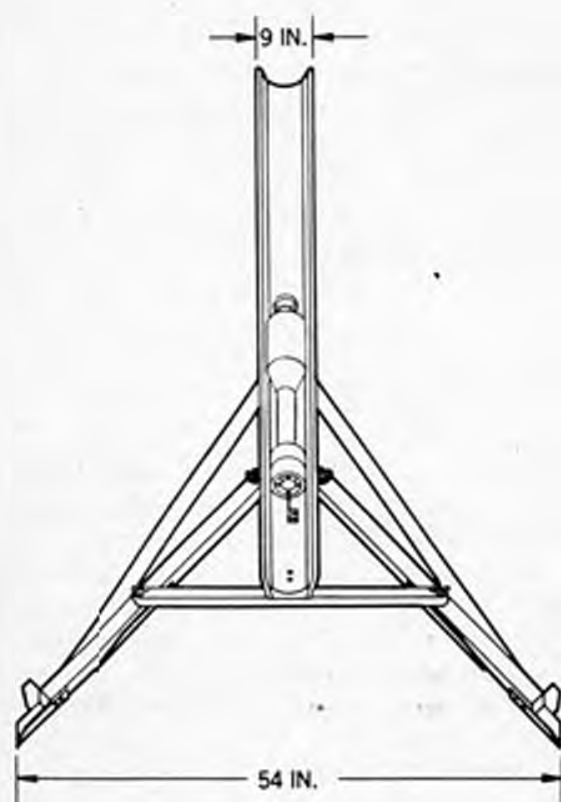
Electrical contact for firing is made by two knife-edge contacts in the guide.

DATA

Number of guides 1
 Launcher ammunition:-
 Service
 4.5-inch Rocket Mk 1 Mod 0
 Practice
 4.5-inch Rocket Mk 2 Mod 0
 Drill
 4.5-inch Rocket Mk 3 Mod 0
 Smoke
 4.5-inch Rocket Mk 4 Mod 0
 4.5-inch Rocket Mk 4 Mod 1
 4.5-inch Rocket Mk 4 Mod 2
 Weight:-
 Less ammunition, lb 28
 Loaded, lb 58
 Major dimensions:-
 Height at maximum elevation, in. 78*
 Width, in. 54*
 Length at minimum elevation, in. 75*
 Length of guide, in. 72
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation, deg 30 to 60*
 Firing arcs:-
 Same as guide-laying movements

Training speed non-trainable
 Elevating speed manually elevated
 Firing data:-
 Type electric
 Voltage at firing pins, v DC 5*
 Firing mechanism Firing Key (Magneto) Mk 22
 Launcher capacity, rounds 1
 Firing interval manually reloaded
 Ballistic data:-
 4.5-inch Rocket Mk 1 Mod 0
 Weight, lb 28.7
 Range at 45 degrees elevation, yd 1100
 Velocity (end of burning), fps 355
 Range table OP 1111
 Mount data:-
 Components
 Rocket Launcher Mk 3 Mod 0
 List of drawings Sk 133150
 General arrangement Dr 424876
 Adapters and attachments none
 Publication references:-
 Instruction handbook none
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 3 Mod 0

ROCKET LAUNCHER MARK 3 MOD 1

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 3 Mod 1 is a portable, expendable, electrically fired weapon for laying a rocket barrage from advanced positions on land.

The major components of the launcher are a wooden guide and two sets of legs. The forward legs are hinged to the guide; the after legs are attached to the rear of the launcher and have secondary supports. Straps are attached to the

launcher to facilitate carrying the weapon in the stowed position.

Electrical contact for firing is made by two knife-edge contacts in the guide.

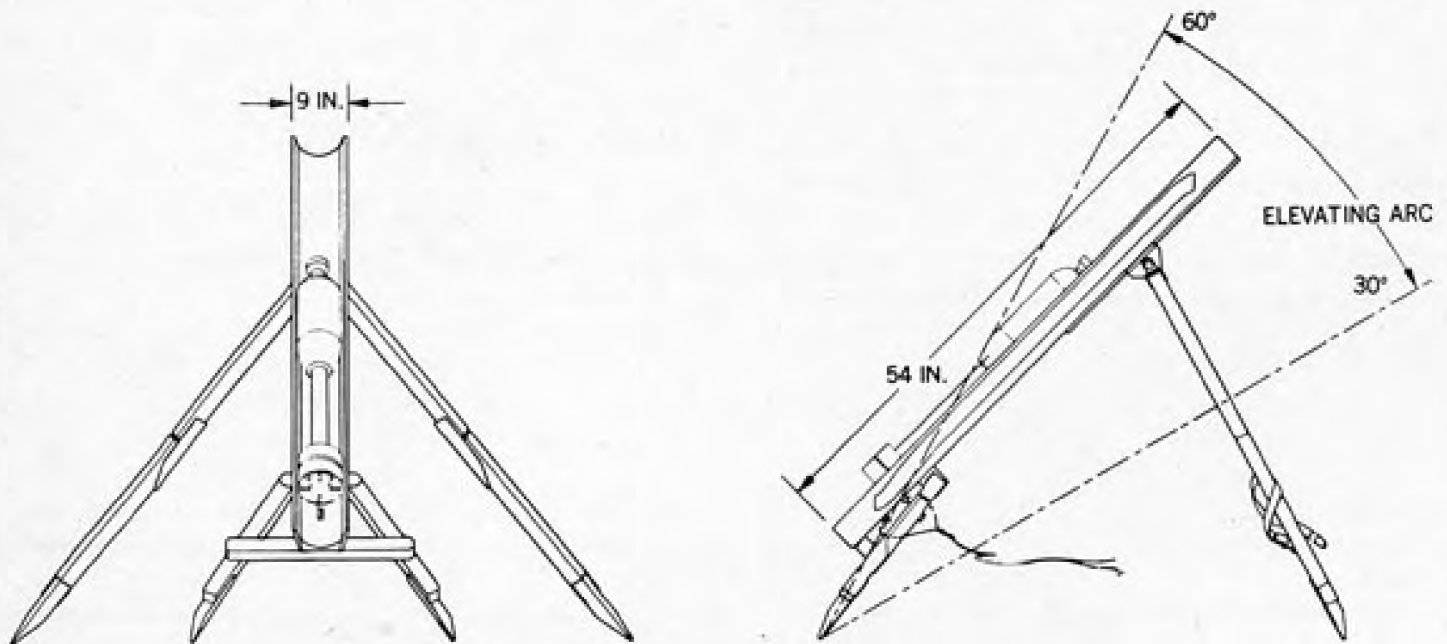
Rocket Launcher Mk 3 Mod 1 is similar to Rocket Launcher Mk 3 Mod 0 except that it is smaller and lighter.

DATA

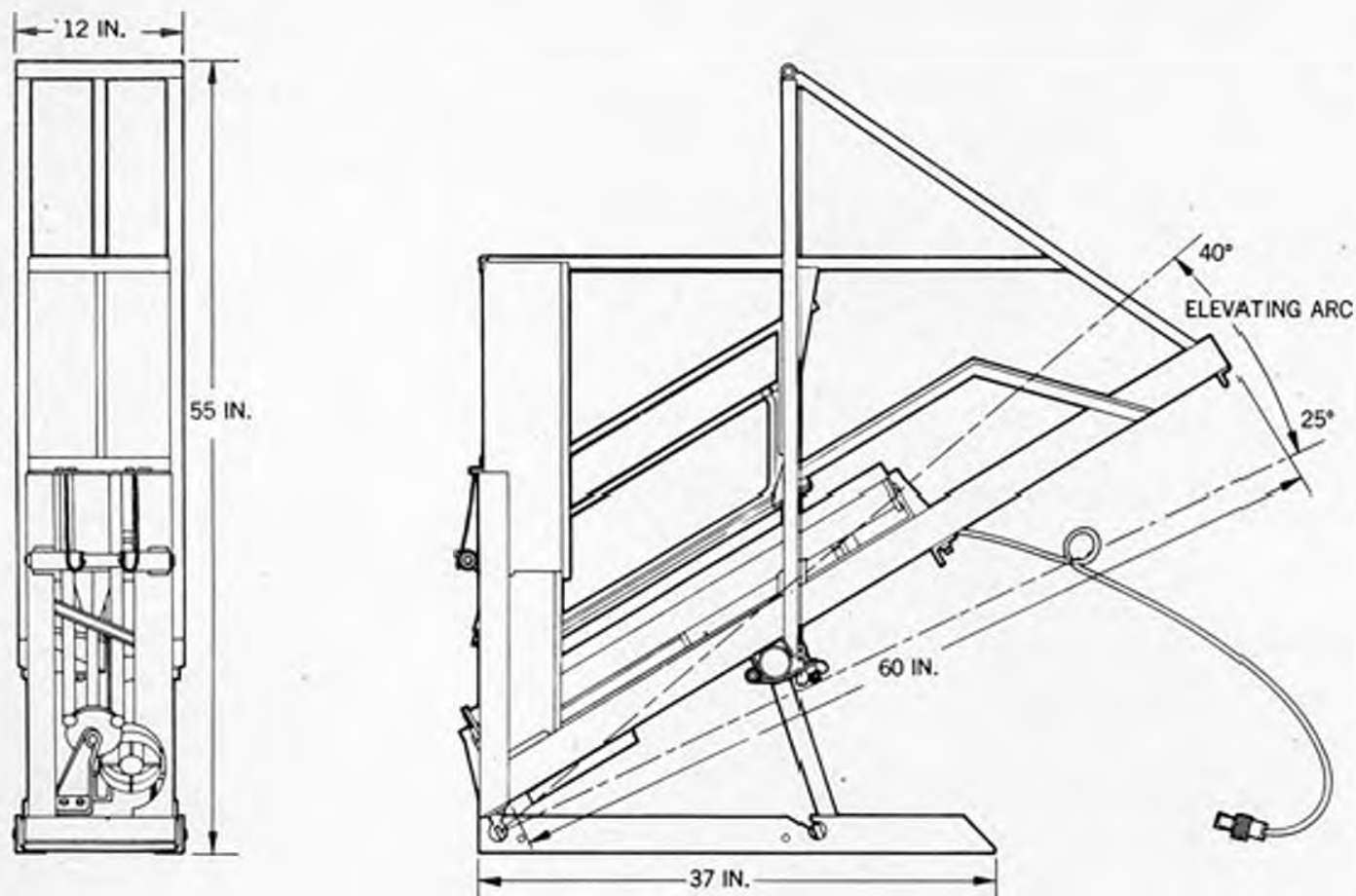
Number of guides 1
 Launcher ammunition:-
 Service
 4.5-inch Rocket Mk 1 Mod 0
 Practice
 4.5-inch Rocket Mk 2 Mod 0
 Drill
 4.5-inch Rocket Mk 3 Mod 0
 Smoke
 4.5-inch Rocket Mk 4 Mod 0
 4.5-inch Rocket Mk 4 Mod 1
 4.5-inch Rocket Mk 4 Mod 2
 Weight:-
 Less ammunition, lb 20
 Loaded, lb 50
 Major dimensions:-
 Height at maximum elevation, in. 56*
 Width, in. 9*
 Length at minimum elevation, in. 55*
 Length of guide, in. 54
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation, deg 30 to 60
 Firing arcs:-
 Same as guide-laying movements

Training speed non-trainable
 Elevating speed manually elevated
 Firing data:-
 Type electric
 Voltage at firing pins, v DC 5*
 Firing mechanism Firing Key Mk 22
 Launcher capacity, rounds 1
 Firing interval manually reloaded
 Ballistic data:-
 4.5-inch Rocket Mk 1 Mod 0
 Weight, lb 28.7
 Range at 45 degrees elevation, yd 1100
 Velocity (end of burning), fps 355
 Range table OP 1111
 Mount data:-
 Components
 Rocket Launcher Mk 3 Mod 1
 List of drawings Sk 133145
 General arrangement Dr 424825,6
 Adapters and attachments none
 Publication references:-
 Instruction handbook none
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 3 Mod 1



Rocket Launcher Mk 7 (Experimental)

ROCKET LAUNCHER MARK 7 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 7 Mod 0 is an electrically fired, automatic gravity-fed weapon for laying intense rocket barrages from amphibious craft, landing craft, vehicles, and land installations.

The launcher consists of a double magazine, reel, guide, and frame. The magazine holds the rockets and feeds them into the reel, which separates the rockets and permits them to drop into the guide, one at a time. The guide consists of two formed steel sections. The launcher

is identical to Rocket Launcher Mk 7 (Experimental) except that the crutch and deck frame for deck mounting is supplied in an adapter kit, and is not an integral part of the launcher. The crutch of the adapter can be adjusted to vary the elevation of the launcher. Other attachments and adapters are provided for other types of installations.

Electrical contact for firing is made by two knife-edge contacts in the guides.

DATA

Number of guides 1

Launcher ammunition:-

Service

4.5-inch Rocket Mk 1 Mod 0

Practice

4.5-inch Rocket Mk 2 Mod 0

Drill

4.5-inch Rocket Mk 3 Mod 0

Smoke

4.5-inch Rocket Mk 4 Mod 0

4.5-inch Rocket Mk 4 Mod 1

4.5-inch Rocket Mk 4 Mod 2

Weight:-

Less ammunition, lb 115

Loaded, lb 460

Major dimensions:-

Height at maximum elevation, in. 58

Width, in. 12

Length at minimum elevation, in. 56

Length of guide, in. 60

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation, deg 25 to 40

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed manually elevated

Firing data:-

Type electric

Voltage at firing pins (varies with installation)

v AC or DC 6 to 24

Firing mechanism (only one per launcher)

Firing Panel Mk 9 Mod 0

Firing Panel Mk 11 Mod 0

Firing Panel Mk 11 Mod 1

Firing Panel Mk 16 Mod 1

Launcher capacity, rounds 12

Firing interval (ripple salvo), sec 0.3*

Ballistic data:-

4.5-inch Rocket Mk 1 Mod 0

Weight, lb 28.7

Range at 45 degrees elevation, yd 1100

Velocity (end of burning), fps 355

Range table OP 1111

Mount data:-

Components

Rocket Launcher Mk 7 Mod 0

List of drawings Sk 133157

General arrangement Dr 424920

Adapters and attachments Adapter Kit Mk 1 Mod 0

Adapter Kit Mk 1 Mod 1

Publication references:-

Instruction handbook OP 1131

Procurement specifications OS 3072

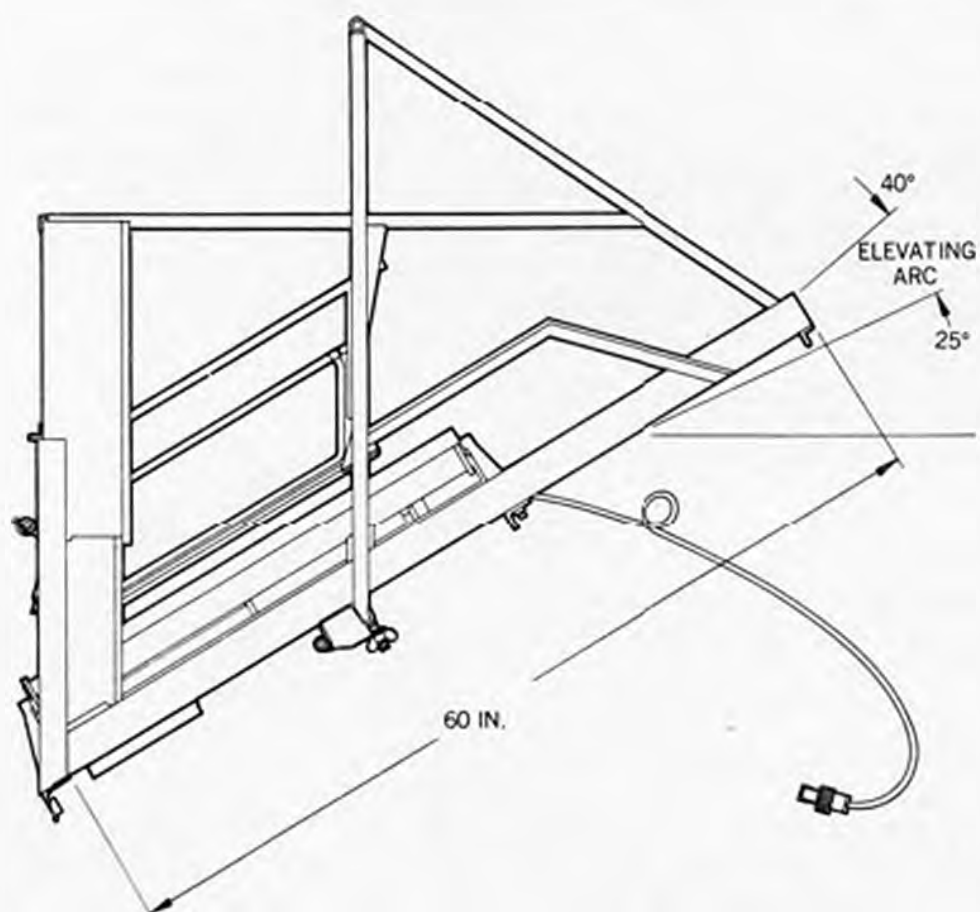
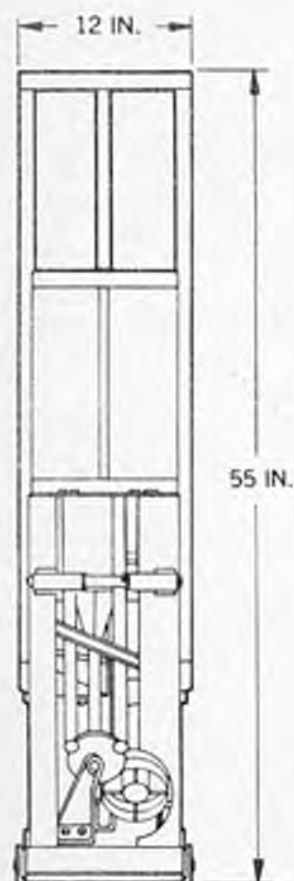
Installation instructions OS 3073

Spare parts list none

Catalog of Navy Material Section 3550

4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 7 Mod 0

ROCKET LAUNCHER MARK 8 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 8 Mod 0 is an electrically fired weapon for laying intense rocket barrages from supporting craft and landing craft. Usually, two identical launchers are mounted on a vessel, one on each side.

Rocket Launcher Mk 8 Mod 0 consists of 12 sheet-metal guides welded or bolted together in four banks of three guides each. Top guides retain the rockets while lower guides support their weight. The launcher has a fixed angle

of elevation, and is loaded from the forward end.

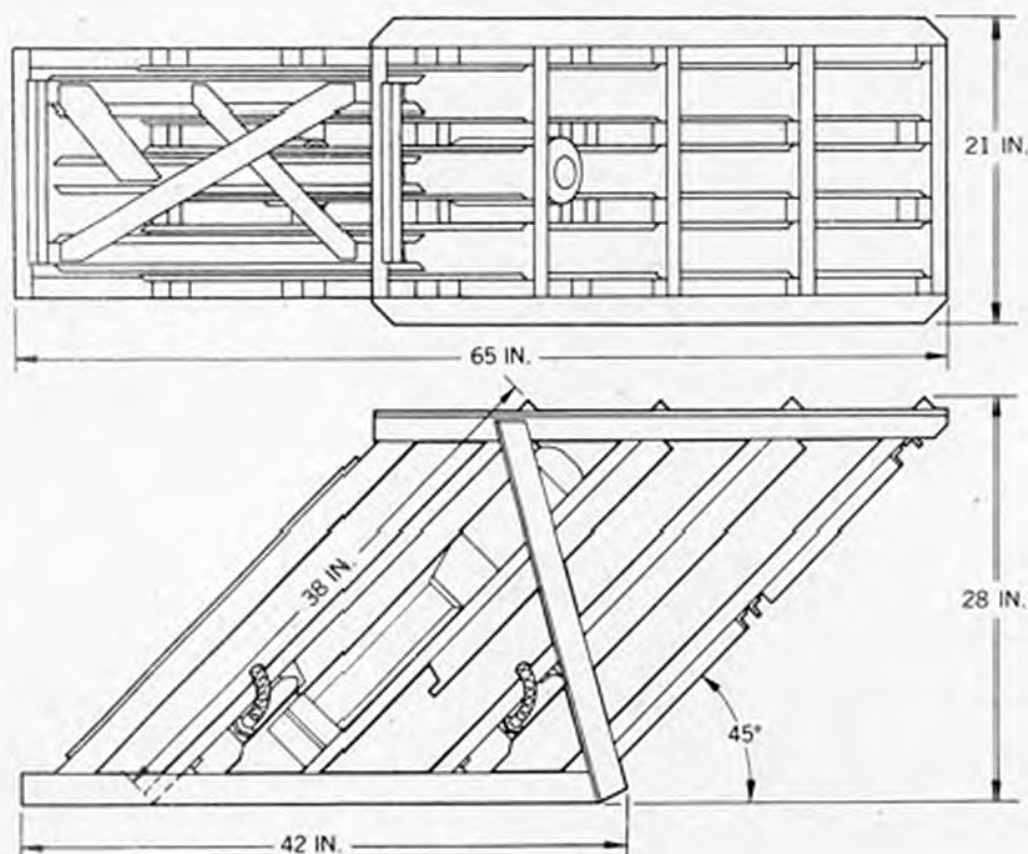
Electrical contact for firing is made by two knife-edge contacts. One knife-edge contact is spring-loaded and bears against the underside of the forward rocket shroud. This contact is connected to the firing panel. The other contact grips the rear edge of the after rocket shroud, and acts as a stop for the rocket as well as the grounded contact.

DATA

Number of guides 12
Launcher ammunition:-
 Service
 4.5-inch Rocket Mk 1 Mod 0
 Practice
 4.5-inch Rocket Mk 2 Mod 0
 Drill
 4.5-inch Rocket Mk 3 Mod 0
 Smoke
 4.5-inch Rocket Mk 4 Mod 0
 4.5-inch Rocket Mk 4 Mod 1
 4.5-inch Rocket Mk 4 Mod 2
Weight:-
 Less ammunition, lb 220
 Loaded, lb 580
Major dimensions:-
 Height, in. 28
 Width, in. 21
 Length, in. 65
 Length of guides, in. 38
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
Guide-laying movements:-
 Train non-trainable
 Elevation (fixed angle), deg 45
Firing arcs:-
 Same as guide-laying movements
Training speed non-trainable

Elevating speed fixed elevation
Firing data:-
 Type electric
 Voltage at firing pins (varies with installation)
 v AC or DC 6 to 24
 Firing mechanism Firing Panel Mk 9 Mod 0
 Launcher capacity, rounds 12
 Firing interval, sec 0.4*
Ballistic data:-
 4.5-inch Rocket Mk 1 Mod 0
 Weight, lb 28.7
 Range at 45 degrees elevation, yd 1100
 Velocity (end of burning), fps 355
 Range table OP 1111
Mount data:-
 Components
 Rocket Launcher Mk 8 Mod 0
 List of drawings Sk 108861
 General arrangement Dr 393951
Adapters and attachments none
Publication references:-
 Instruction handbook OP 1003 (First Revision)
 Procurement specifications OS 3000
 Installation instructions OS 3029
 Spare parts list none
 Catalog of Navy Material Section 3550
 4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 8 Mod 0

ROCKET LAUNCHER MARK 8 MOD-1

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 8 Mod 1 is an electrically fired weapon for laying intense rocket barrages from supporting craft and landing craft. Usually, two identical launchers are mounted on a vessel, one on each side.

Rocket Launcher Mk 8 Mod 1 consists of 12 sheet-metal guides welded and bolted together in four banks of three guides each. Top guides retain the rockets while lower guides support their weight. The launcher has a fixed angle of elevation, and is loaded from the forward end.

Electrical contact for firing is made by two knife-edge contacts. One knife-edge contact is spring-loaded and bears against the underside of the forward rocket shroud. This contact is connected to the firing panel. The other contact grips the rear edge of the after rocket shroud, and acts as a stop for the rocket as well as the grounded contact.

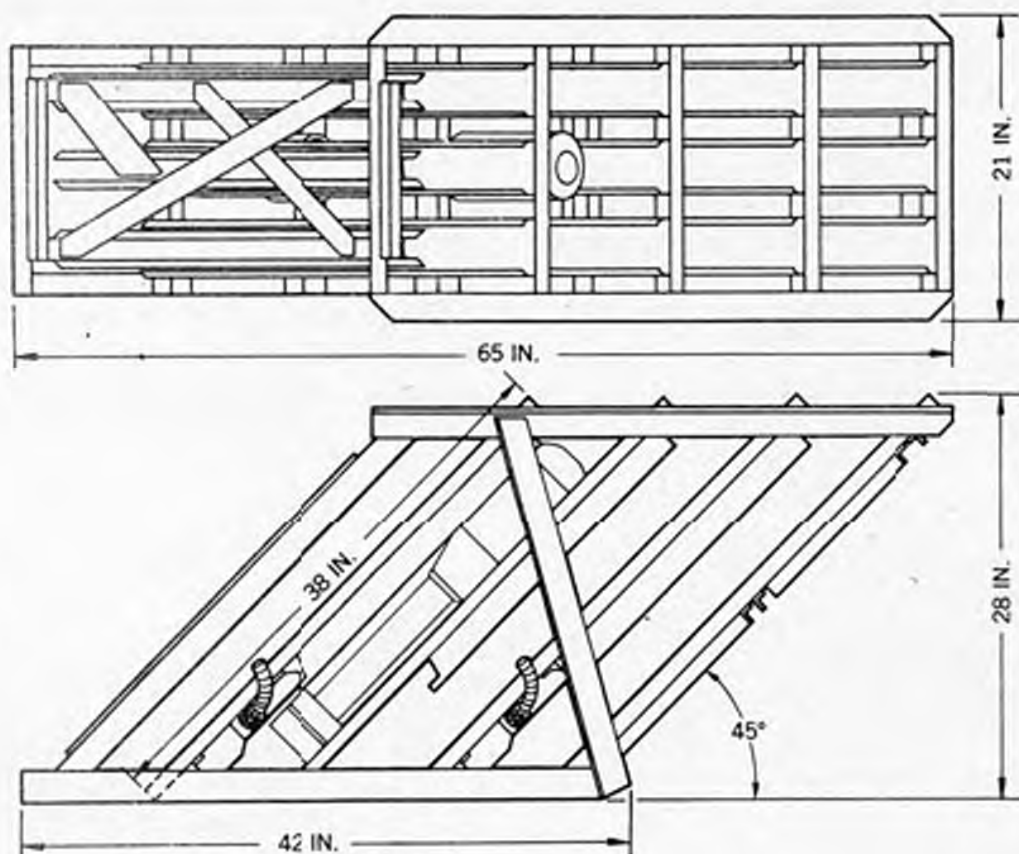
Rocket Launcher Mk 8 Mod 1 is identical to Rocket Launcher Mk 8 Mod 0 except that the contact box has been redesigned to incorporate electrical improvements.

DATA

Number of guides	12
Launcher ammunition:-	
Service	
4.5-inch Rocket Mk 1 Mod 0	
Practice	
4.5-inch Rocket Mk 2 Mod 0	
Drill	
4.5-inch Rocket Mk 3 Mod 0	
Smoke	
4.5-inch Rocket Mk 4 Mod 0	
4.5-inch Rocket Mk 4 Mod 1	
4.5-inch Rocket Mk 4 Mod 2	
Weight:-	
Less ammunition, lb	220
Loaded, lb	580
Major dimensions:-	
Height, in.	28
Width, in.	21
Length, in.	65
Length of guides, in.	38
Radius of clearance circle	non-trainable
Radius of working circle	non-trainable
Guide-laying movements:-	
Train	non-trainable
Elevation (fixed angle), deg	45
Firing arcs:-	
Same as guide-laying movements	

Training speed	non-trainable
Elevating speed	fixed elevation
Firing data:-	
Type	electric
Voltage at firing pins (varies with installation)	
w AC or DC	6 to 24
Firing mechanism	Firing Panel Mk 9 Mod 0
Launcher capacity, rounds	12
Firing interval, sec	0.4*
Ballistic data:-	
4.5-inch Rocket Mk 1 Mod 0	
Weight, lb	28.7
Range at 45 degrees elevation, yd	1100
Velocity (end of burning), fps	355
Range table	OP 1111
Mount data:-	
Components	
Rocket Launcher	Mk 8 Mod 1
List of drawings	Sk 109176
General arrangement	Dr 422811
Publication references:-	
Instruction handbook	OP 1003 (First Revision)
Procurement specifications	OS 3000
Installation instructions	OS 3029
Spare parts list	none
Catalog of Navy Material	Section 3550
4.5-inch Rockets	OP 1111

* Estimated



Rocket Launcher Mk 8 Mod 1

ROCKET LAUNCHER MARK 9 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 9 Mod 0 is an electrically fired weapon for laying rocket barrages from supporting and landing craft. Usually, two identical launchers are mounted on a vessel, one on each side.

Rocket Launcher Mk 9 Mod 0 consists of eight sheet-steel guides welded and bolted together in four banks of two guides each. Top guides retain the rockets while lower guides support their weight. The launcher has a fixed angle of elevation and is loaded from the forward end.

Electrical contact for firing is made by two

knife-edge contacts. One knife-edge contact is spring-loaded, and bears against the underside of the forward rocket shroud. This contact is connected to the firing panel. The other contact grips the rear edge of the after rocket shroud, and acts as a stop for the rocket as well as the grounded contact.

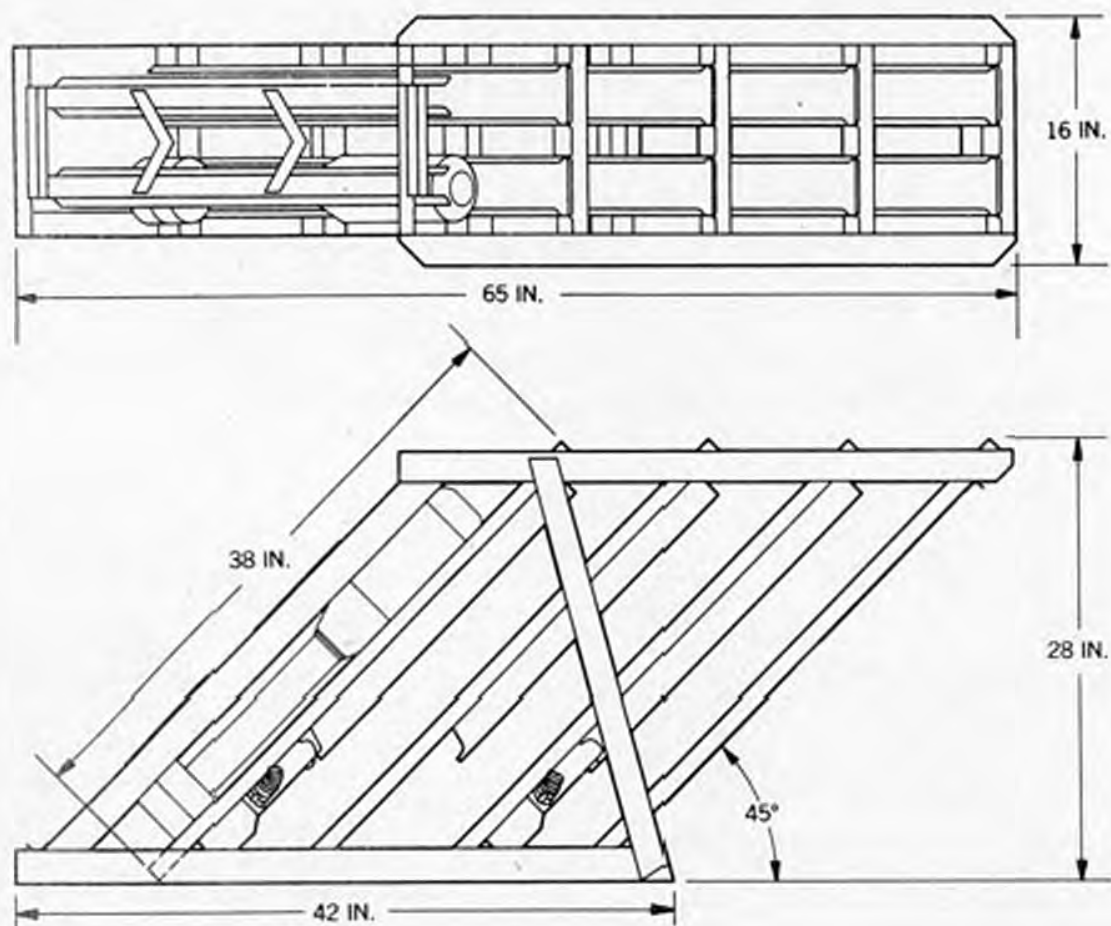
Rocket Launcher Mk 9 Mod 0 is similar to Rocket Launcher Mk 8 Mod 0 except that it has eight guides. The launcher is designed to be mounted on landing craft for which Rocket Launcher Mk 8 Mod 0 is too wide.

DATA

Number of guides 8
 Launcher ammunition:-
 Service
 4.5-inch Rocket Mk 1 Mod 0
 Practice
 4.5-inch Rocket Mk 2 Mod 0
 Drill
 4.5-inch Rocket Mk 3 Mod 0
 Smoke
 4.5-inch Rocket Mk 4 Mod 0
 4.5-inch Rocket Mk 4 Mod 1
 4.5-inch Rocket Mk 4 Mod 2
 Weight:-
 Less ammunition, lb 155
 Loaded, lb 395
 Major dimensions:-
 Height, in. 28
 Width, in. 16
 Length, in. 65
 Length of guides, in. 38
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation (fixed angle), deg 45
 Firing arcs:-
 Same as guide-laying movements
 Training speed non-trainable

Elevating speed fixed elevation
 Firing data:-
 Type electric
 Voltage at firing pins (varies with installation)
 v AC or DC 6 to 24
 Firing mechanism Firing Panel Mk 9 Mod 2
 Launcher capacity, rounds 8
 Firing interval, sec 0.4*
 Ballistic data:-
 4.5-inch Rocket Mk 1 Mod 0
 Weight, lb 28.7
 Range at 45 degrees elevation, yd 1100
 Velocity (end of burning), fps 355
 Range table OP 1111
 Mount data:-
 Components
 Rocket Launcher Mk 9 Mod 0
 List of drawings Sk 109097
 General arrangement Dr 422564
 Adapters and attachments none
 Publication references:-
 Instruction handbook none
 Procurement specifications OS 3035
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 4.5-inch Rockets OP 1111

* Estimated



Rocket Launcher Mk 9 Mod 0

ROCKET LAUNCHER MARK 10 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 10 Mod 0 is a portable electrically fired weapon for laying rocket barges from advanced positions in hilly terrain. It can be adapted to being dropped by parachute.

The launcher has a single metal guide that is supported by a detachable rear support and a forward leg. The length of the guide and the length of the forward leg can be adjusted; the latter adjustment varies the elevation of the launcher.

The rear support is a transverse bar that is supported at each end by cleated plates. A gravity quadrant, which has range settings, is attached to the underside of the guide. The entire unit, including the electrical wiring and firing key, can be folded and stowed in a tube 5-1/4 inches in diameter and 43 inches in length.

Electrical contact for firing is made by two knife-edge contacts in the guide.

DATA

Number of guides 1
Launcher ammunition:-

Service

4.5-inch Rocket Mk 1 Mod 0

Practice

4.5-inch Rocket Mk 2 Mod 0

Drill

4.5-inch Rocket Mk 3 Mod 0

Smoke

4.5-inch Rocket Mk 4 Mod 0

4.5-inch Rocket Mk 4 Mod 1

4.5-inch Rocket Mk 4 Mod 2

Weight:-

Less ammunition, lb 32.25

Loaded, lb 61

Major dimensions:-

Height at maximum elevation, in. 64

Width, in. 39

Length at minimum elevation, in. 58

Length of guide (extended), in. 66

Radius of clearance circle, in. 58

Radius of working circle, in. 58

Guide-laying movements:-

Train, right, deg 0 to 15

Train, left, deg 0 to 15

Elevation, deg 28.5 to 60

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed manually elevated

Firing data:-

Type electric

Voltage at firing pins, v DC 5*

Firing mechanism Firing Key Mk 22 Mod 1

Launcher capacity, rounds 1

Firing interval manually reloaded

Ballistic data:-

4.5-inch Rocket Mk 1 Mod 0

Weight, lb 28.7

Range at 45 degrees elevation, yd 1100

Velocity (end of burning), fps 355

Range table OP 1111

Mount data:-

Components

Rocket Launcher Mk 10 Mod 0

List of drawings Sk 133170

General arrangement Dr 425001

Adapters and attachments none

Publication references:-

Instruction handbook none

Procurement specifications OS 3407

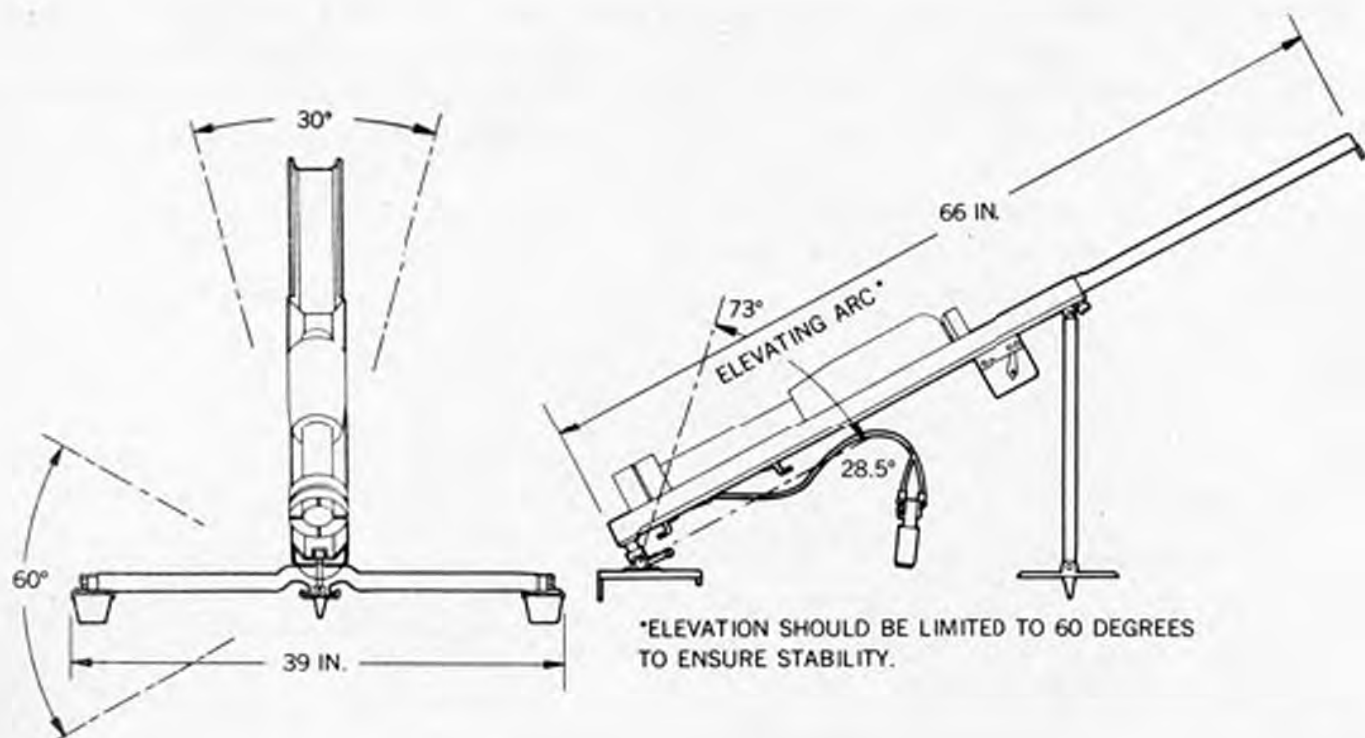
Installation instructions none

Spare parts list none

Catalog of Navy Material none

4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 10 Mod 0

ROCKET LAUNCHER MARK 11 MOD 0
DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 11 Mod 0 is an electrically fired weapon for laying intense rocket barrages from landing craft. The launcher can be reloaded during operation, and is designed to be mounted on either gunwale of a landing barge.

The launcher consists of a single guide, a lightweight metal magazine, indexing and firing mechanisms, and an elevation control. The magazine frame is tilted upward, and inboard at an

angle of 30 degrees to form an incline. In operation, the rockets roll down the incline and are indexed into the firing position. The position of the frame facilitates reloading as rockets in the guide are fired. A perforated metal rocket guide cover bolted to the top of the magazine frame prevents movement of the rockets with the motion of the craft.

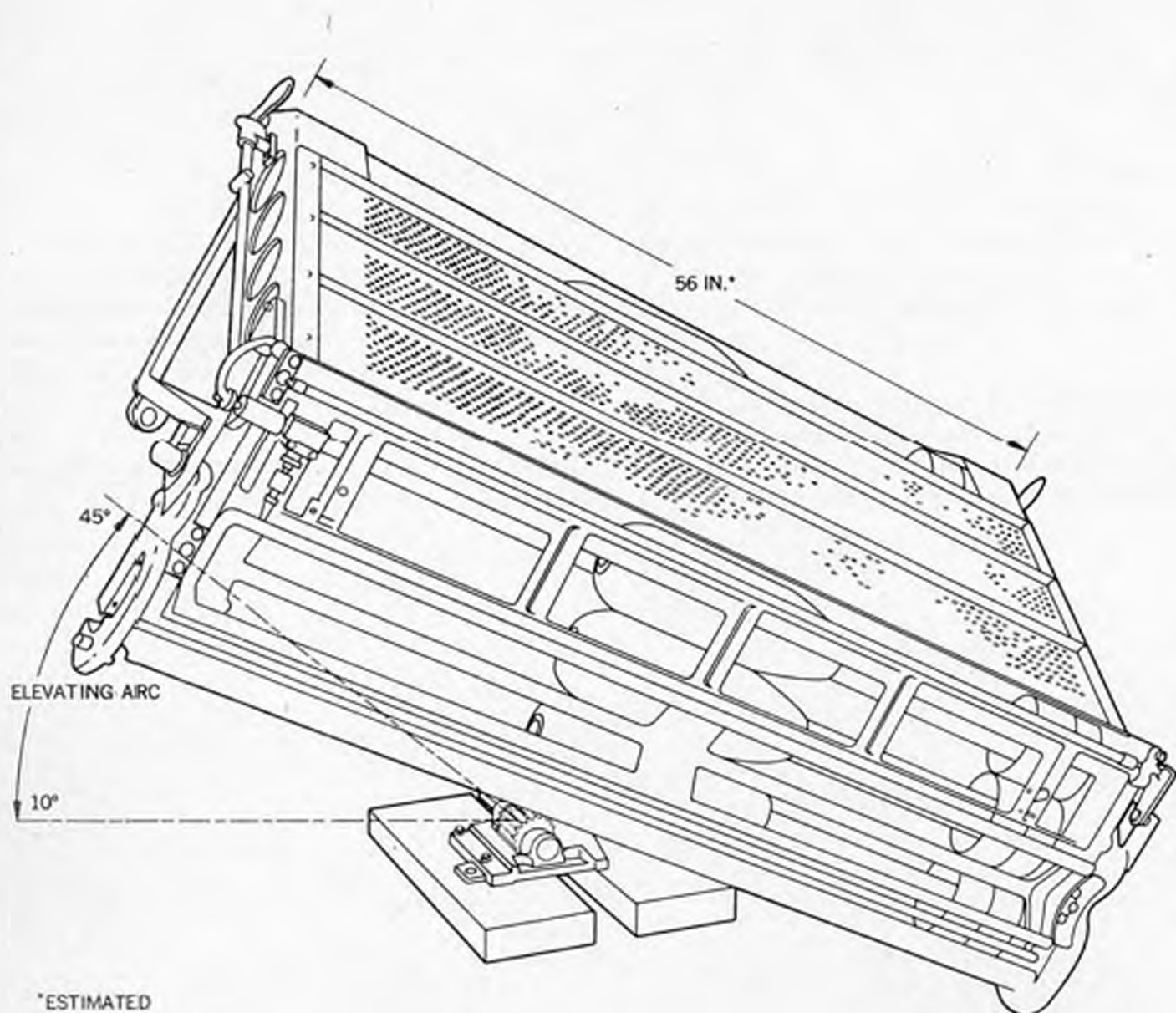
Electrical contact for firing is made by two knife-edge contacts in the guide.

DATA

Number of guides 1
Launcher ammunition:-
Service
4.5-inch Rocket Mk 1 Mod 0
Practice
4.5-inch Rocket Mk 2 Mod 0
Drill
4.5-inch Rocket Mk 3 Mod 0
Smoke
4.5-inch Rocket Mk 4 Mod 0
4.5-inch Rocket Mk 4 Mod 1
4.5-inch Rocket Mk 4 Mod 2
Weight:-
Less ammunition, lb 234
Loaded, lb 594
Major dimensions:-
Height at maximum elevation, in. 53*
Width, in. 28*
Length, in. 56*
Length of guide, in. 56*
Radius of clearance circle non-trainable
Radius of working circle non-trainable
Guide-laying movements:-
Train non-trainable
Elevation, deg 10 to 45
Firing arcs:-
Same as guide-laying movements

Training speed non-trainable
Elevating speed manually elevated
Firing data:-
Type electric
Voltage at firing pins, v DC 20*
Firing mechanism not designated
Launcher capacity, rounds 12
Firing interval, sec 0.3*
Ballistic data:-
4.5-inch Rocket Mk 1 Mod 0
Weight, lb 28.7
Range at 45 degrees elevation, yd 1100
Velocity (end of burning), fps 355
Range table OP 1111
Mount data:-
Components
Rocket Launcher Mk 11 Mod 0
List of drawings not assigned
General arrangement not assigned
Adapters and attachments none
Publication references:-
Instruction handbook none
Procurement specifications none
Installation instructions none
Spare parts list none
Catalog of Navy Material none
4.5-inch Rockets OP 1111

*Estimated



Rocket Launcher Mk 11 Mod 0

ROCKET LAUNCHER MARK 101 MOD 2

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 101 Mod 2 is a director-controlled, electrically fired weapon for laying barrages of 4.5-inch Army rockets.

The launcher consists of a stand, cradle, carriage, and four Army T66 guides. Each guide consists of three rows of eight tubes each. The

carriage is a modified 40mm Carriage Mk 1 Mod 0 that supports the cradle in which the guides are mounted. The launcher is trained and elevated as a unit. Rocket Launcher Mk 101 Mod 2 differs from Rocket Launcher Mk 101 Mod 1 in that it has Army-design rocket guides and a modified cradle.

DATA

Number of guides..... 96

Launcher ammunition:-

Service

4.5-inch Rocket, M16 (Army)

Weight:-

Less ammunition, lb..... 14,500

Loaded, lb..... 18,532

Major dimensions:-

Height, in. 110*

Width, in. 165*

Length, in. 90*

Length of guides, in. 47*

Radius of clearance circle, in. 94*

Radius of working circle, in. 110*

Guide-laying movements:-

Train, right, deg..... 0 to 360

Train, left, deg..... 0 to 360

Elevation, deg..... 23 to 68

Firing arcs:-

Same as guide-laying movements

Training speed, deg per sec..... 30

Elevating speed, deg per sec..... 20

Firing data:-

Type..... electric

Voltage at firing pins..... **

Firing mechanism..... **

Firing data (cont)

Launcher capacity, rounds..... 96

Firing interval, sec..... **

Ballistic data:-

4.5-inch Rocket, M16 (Army)

Weight, lb..... 42.5

Range, yd..... 5210

Velocity (end of burning), fps..... 840

Range table..... none

Mount data:-

Components

Rocket Launcher Guide (4)..... Army T66

Rocket Launcher Cradle..... Mk 101 Mod 1

Rocket Launcher Carriage..... Mk 101 Mod 1

40mm Stand..... Mk 1 Mod 0

Train Power Drive..... Mk 5 Mod 21

Elevation Power Drive..... Mk 5 Mod 18

List of drawings..... Sk 167524

General arrangement..... not assigned

Adapters and attachments..... none

Publication references:-

Instruction handbook..... none

Procurement specifications..... none

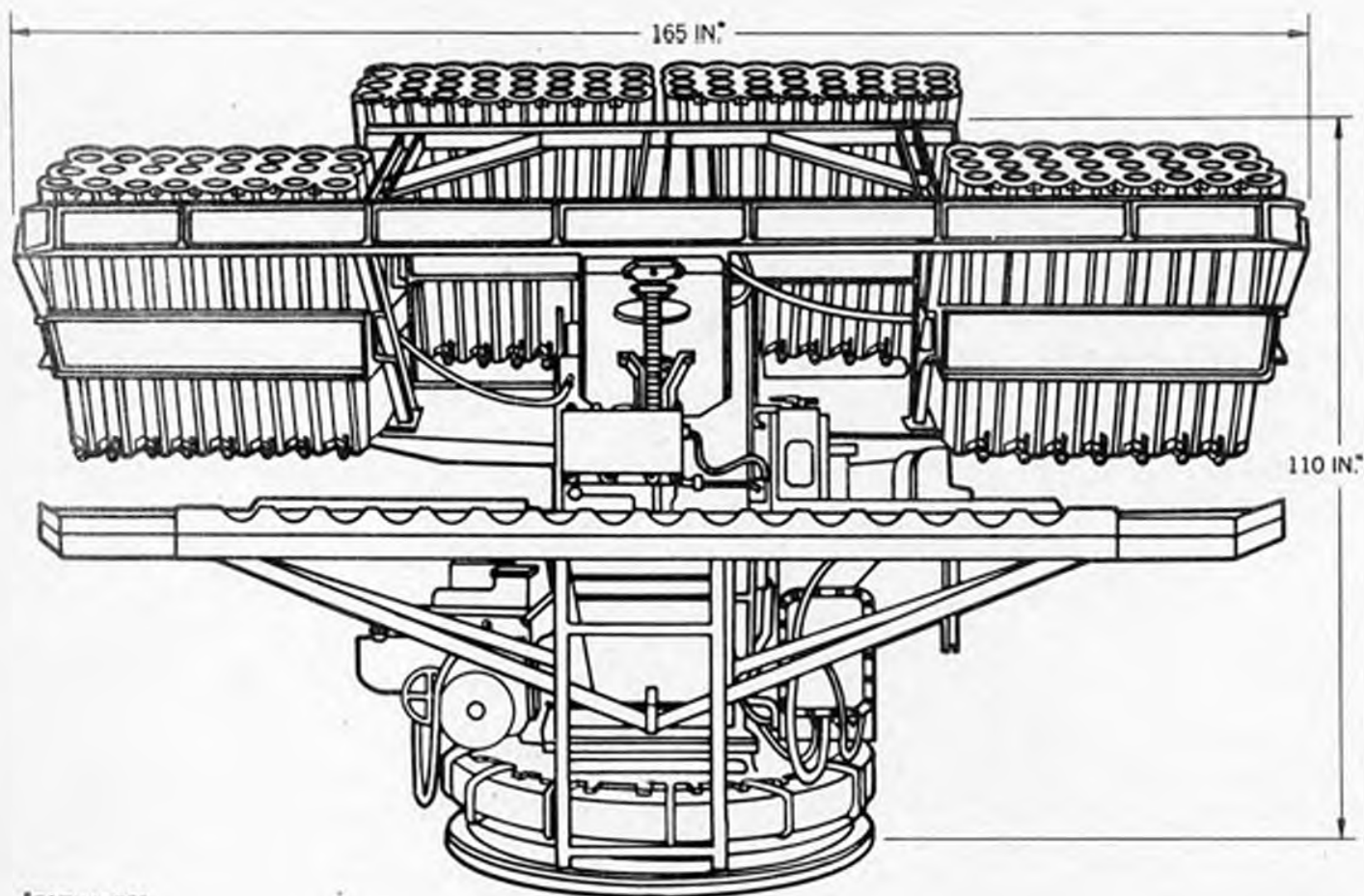
Installation instructions..... none

Spare parts list..... none

Catalog of Navy Material..... none

*Estimated

**Firing mechanism not designated.



*ESTIMATED

Rocket Launcher Mk 101 Mod 2

ROCKET LAUNCHER MARK 50 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 50 Mod 0 is a manually loaded, electrically fired weapon for launching rockets from motor torpedo boats. It is used for starboard installation.

The launcher consists of a launching assembly, an L-shaped trunnion, and a pedestal-type base. The eight guides of the launching assembly are mounted on the horizontal member of the trunnion. The trunnion is supported by the base, which is bolted to the deck of the vessel. Each guide is a tube with three stainless steel rails and a spring-loaded retaining pawl. This pawl positions and secures the rocket in place; it is manually lifted to insert or remove rounds from

the guide. Locking rods prevent movement of the pawls and secure the rounds when the launcher is fully loaded; these rods must be removed before the launcher can be fired. The trunnion on which the guide assembly is mounted is free to rotate in the base to train the mount; a manually driven worm gear elevates the mount. The launcher is loaded in the inboard position and then swung outboard for firing.

Electrical contact for firing is made between the rocket and guides, and between the rocket contact band and a spring-loaded stainless steel contact point at the breech end of each guide.

DATA

Number of guides 8
Launcher ammunition:-

Service

5.0-inch Rockets Mk 7 Mods 0,1,2, and 3; Mk 10
Mod 0; Mk 13 Mod 0; and Mk 16 Mod 0

Drill

5.0-inch Rockets Mk 9 Mods 0 and 1; Mk 12 Mod 0;
Mk 15 Mod 0; and Mk 18 Mod 0

Smoke

5.0-inch Rocket Mk 19 Mod 0

Practice

5.0-inch Rockets Mk 8 Mods 0 and 1; Mk 11 Mod 0;
Mk 14 Mod 0; and Mk 17 Mod 0

Weight:-

Less ammunition, lb 940
Loaded, lb 1333

Major dimensions:-

Height at maximum elevation, in. 48
Width, in. 62
Length, in. 51
Length of guides, in. 48
Radius of clearance circle, in. 50
Radius of working circle, in. 74

Guide-laying movements:-

Train unlimited*
Elevation unlimited

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

*Train will be limited only by length of power lead

**Single rounds or two-rocket salvos

Elevating speed manually elevated
Firing data:-

Type electric

Voltage at firing pins (varies with installation)

✓ AC or DC 6 to 24

Firing mechanism (only one per launcher)

Firing Panel Mk 13 Mod 1

Firing Panel Mk 13 Mod 2

Launcher capacity, rounds 8

Firing interval, sec 0.5*

Ballistic data:-

5.0-inch Rocket Mk 7 Mod 2

Weight, lb 49.8

Range at 45 degrees elevation, yd 10,000

Velocity (end of burning), fps 1540

Range table OP 1244 (Second Revision)

Mount data:-

Components

Rocket Launcher Mk 50 Mod 0

List of drawings Sk 166311

General arrangement Dr 425020, 1

Adapters and attachments none

Publication references:-

Instruction handbook OP 1244 (Second Revision)

Procurement specifications OS 3567

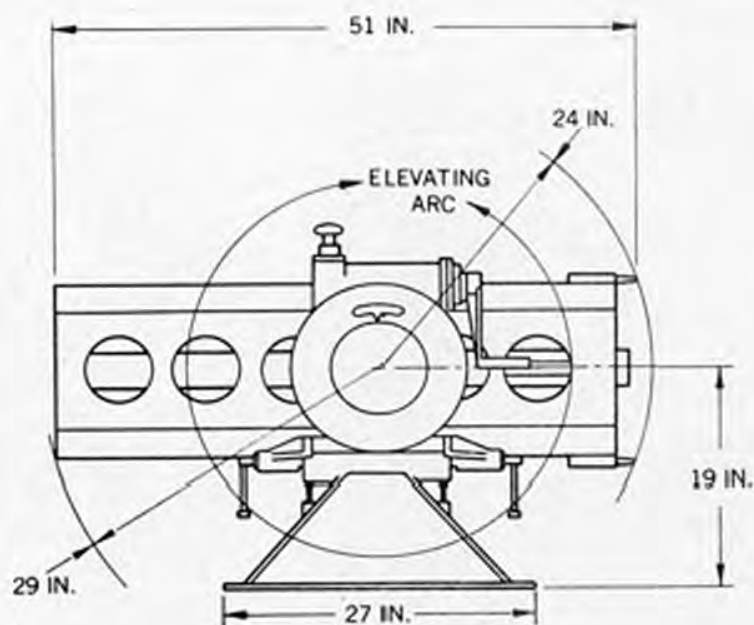
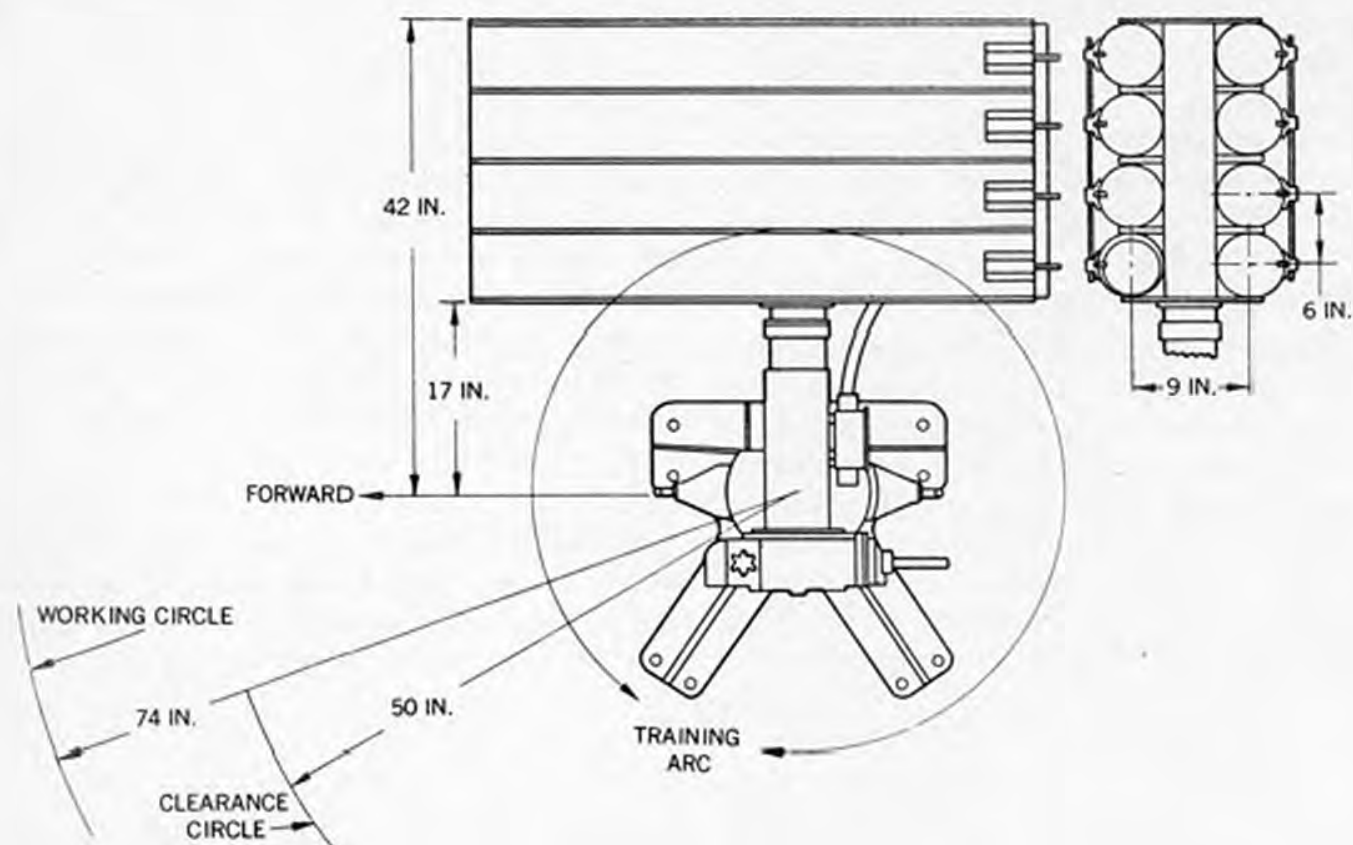
Installation instructions none

Spare parts list NAVCRD 21440

Catalog of Navy Material Section 3550

5.0-inch Rockets OP 1260

Applicable Ordnals Ordalt 2412



Rocket Launcher Mk 50 Mod 0

ROCKET LAUNCHER MARK 50 MOD 1

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 50 Mod 1 is a manually loaded, electrically fired weapon for launching rockets from motor torpedo boats. It is used for port installation.

The launcher consists of a launching assembly, an L-shaped trunnion, and a pedestal-type base. The eight guides of the launching assembly are mounted on the horizontal member of the trunnion. The trunnion is supported by the base, which is bolted to the deck of the vessel. Each guide is a tube with three stainless steel rails and a spring-loaded retaining pawl. This pawl positions and secures the rocket in place; it is manually lifted to insert or remove rounds from

the guide. Locking rods prevent movement of the pawls and secure the rounds when the launcher is fully loaded; these rods must be removed before the launcher can be fired. The trunnion on which the guide assembly is mounted is free to rotate in the base to train the mount; a manually driven worm gear elevates the mount. The launcher is loaded in the inboard position and then swung outboard for firing.

Electrical contact for firing is made between the rocket and guides, and between the rocket contact band and a spring-loaded stainless steel contact point at the breech end of each guide.

DATA

Number of guides 8

Launcher ammunition:-

Service

5.0-inch Rocket Mk 7 Mods 0, 2, and 3; Mk 10 Mod 0; Mk 13 Mod 0; Mk 16 Mod 0; and Mk 7 Mod 1

Drill

5.0-inch Rocket Mk 9 Mods 0, 1; Mk 12 Mod 0; Mk 15 Mod 0; and Mk 18 Mod 0

Smoke

5.0-inch Rocket Mk 19 Mod 0

Practice

5.0-inch Rocket Mk 8 Mods 0, 1; Mk 11 Mod 0; Mk 14 Mod 0; and Mk 17 Mod 0

Weight:-

Less ammunition, lb 940

Loaded, lb 1333

Major dimensions:-

Height at maximum elevation, in. 48

Width, in. 62

Length, in. 51

Length of guides, in. 48

Radius of clearance circle, in. 50

Radius of working circle, in. 74

Guide-laying movements:-

Train unlimited*

Elevation unlimited

Firing data:-

Type electric

Voltage at firing pins (varies with installation)

v AC or DC 6 to 24

Firing data (cont)

Firing mechanism (only one per launcher)

Firing Panel Mk 13 Mod 1

Firing Panel Mk 13 Mod 2

Launcher capacity, rounds 8

Firing interval, sec 0.5**

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed manually elevated

Ballistic data:-

5.0-inch Rocket Mk 7 Mod 2

Weight, lb 49.8

Range at 45 degrees elevation, yd 10,000

Velocity (end of burning), fps 1540

Range table OP 1244 (Second Revision)

Mount data:-

Components

Rocket Launcher Mk 50 Mod 1

List of drawings Sk 166344

General arrangement Dr 425130, 1

Adapters and attachments none

Publication references:-

Instruction handbook OP 1244 (Second Revision)

Procurement specifications OS 3567

Installation instructions none

Spare parts list NAVORD 21440

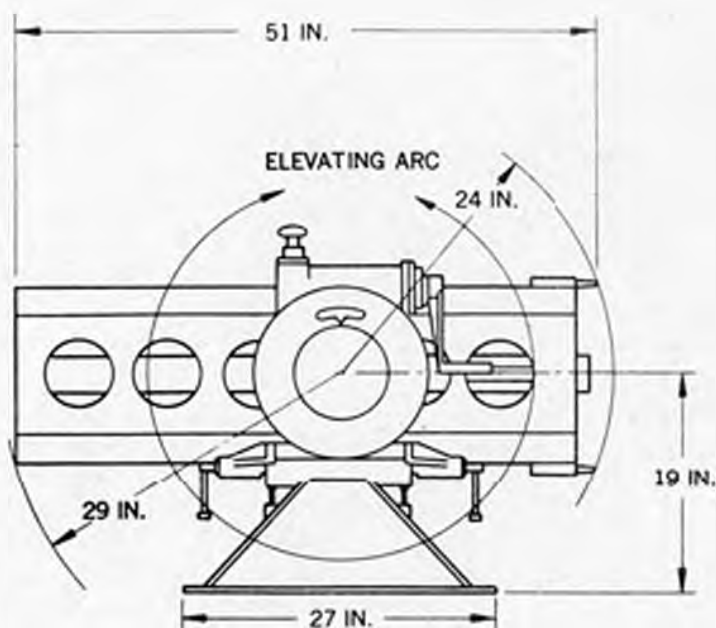
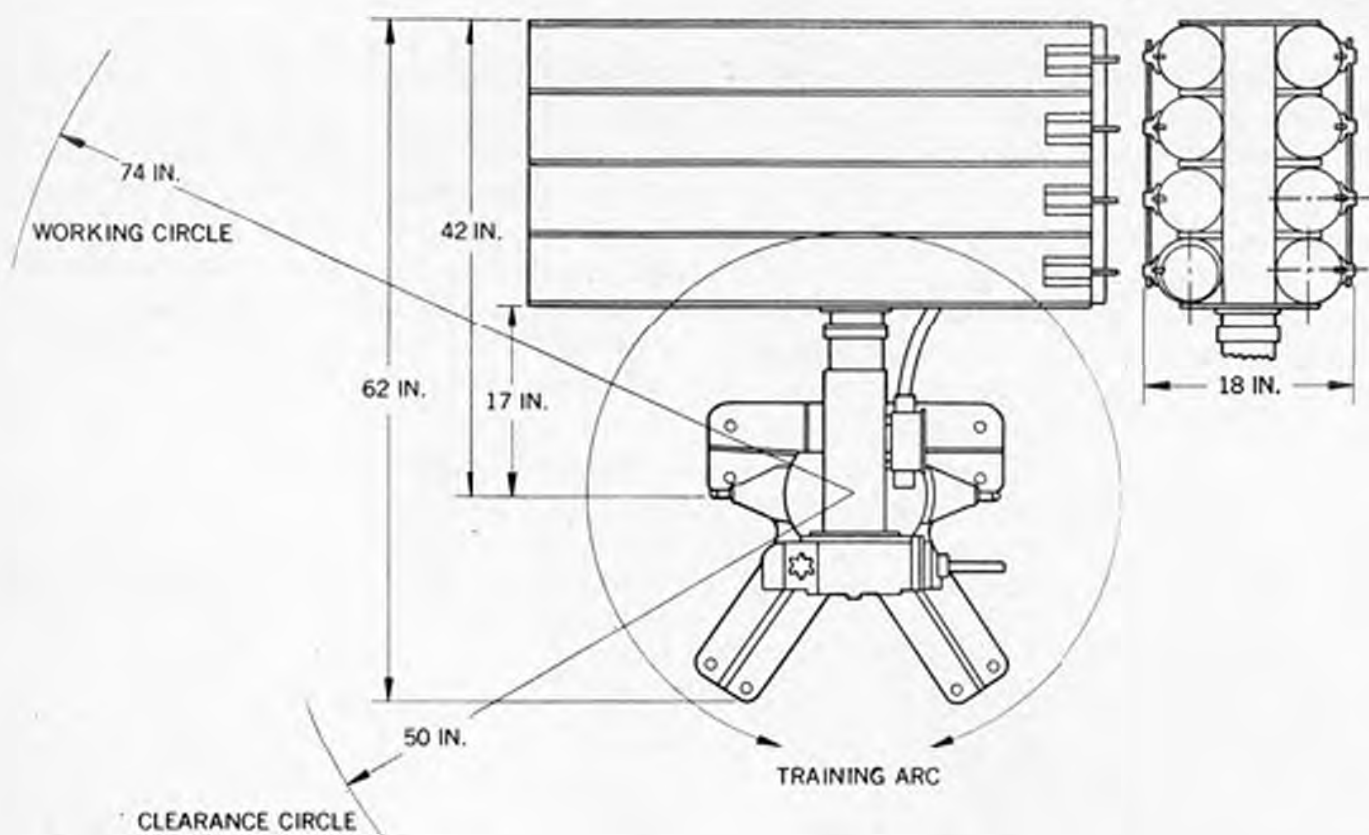
Catalog of Navy Material Section 3550

5.0-inch Rockets OP 1260

Applicable Ordalts Ordalt 2412

*Train will be limited only by length of power lead

**Single rounds or two-rocket salvos



Rocket Launcher Mk 50 Mod 1

ROCKET LAUNCHER MARK 51 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 51 Mod 0 is an electrically fired, automatic gravity-fed weapon for laying intense rocket barrages from amphibious and landing craft, vehicles, and land installations.

The launcher consists of a guide and a deck frame. The guide consists of a supply magazine, firing magazine, reel, and a pair of launching rails. The magazines hold the rockets and feed them into the reel, which separates the rockets and permits them to drop onto the guides one at

a time. The rockets are fed from the firing magazine first and then from the supply magazine. The deck frame consists of an elevating crutch and a frame with a scoop-like blast deflector at the after end. The length of the crutch can be adjusted to vary the elevation of the launcher.

Electrical contact for firing is made by a spring-loaded contact that bears on the rocket contact band. The circuit is completed through the rocket body to the guide rails.

DATA

Number of guides 1
Launcher ammunition:-

Service

- *5.0-inch Rockets Mk 7 Mods 0, 1, 2, and 3
- *5.0-inch Rocket Mk 10 Mod 0
- 5.0-inch Rockets Mk 13 Mod 0; Mk 16 Mod 0

Drill

- 5.0-inch Rockets Mk 9 Mods 0 and 1; Mk 12 Mod 0; Mk 15 Mod 0; and Mk 18 Mod 0

Smoke

- 5.0-inch Rocket Mk 19 Mod 0

Target

- 5.0-inch Rockets Mk 8 Mods 0 and 1; Mk 11 Mod 0; Mk 14 Mod 0; and Mk 17 Mod 0

Weight:-

- Less ammunition, lb 233
- Loaded, lb 833

Major dimensions:-

- Height at maximum elevation, in. 62**
- Width, in. 14
- Length, in. 60
- Length of guide, in. 43**
- Radius of clearance circle non-trainable
- Radius of working circle non-trainable

Guide-laying movements:-

- Train non-trainable
- Elevation, deg 30 to 45

Firing data:-

- Type electric
- Voltage at firing pins, v AC or DC 6 to 24***

Firing data (cont)

Firing mechanism (only one per launcher)

- Firing Panel Mk 9 Mod 1
- Firing Panel Mk 11 Mod 1
- Firing Panel Mk 12 Mod 1
- Firing Panel Mk 16 Mod 1
- Firing Panel Mk 18 Mod 1
- Firing Panel Mk 19 Mod 0

Launcher capacity, rounds 12

Firing interval, sec 0.3***

Ballistic data:-

5.0-inch Rocket Mk 7 Mod 2

- Weight, lb 49.8
- Range at 45 degrees elevation, yd 10,000
- Velocity (end of burning), fps 1540
- Range table OP 1244 (2nd Revision)

Mount data:-

Components

- Rocket Launcher Mk 51 Mod 0
- List of drawings Sk 165493
- General arrangement Dr 500996

Adapters and attachments none

Publication references:-

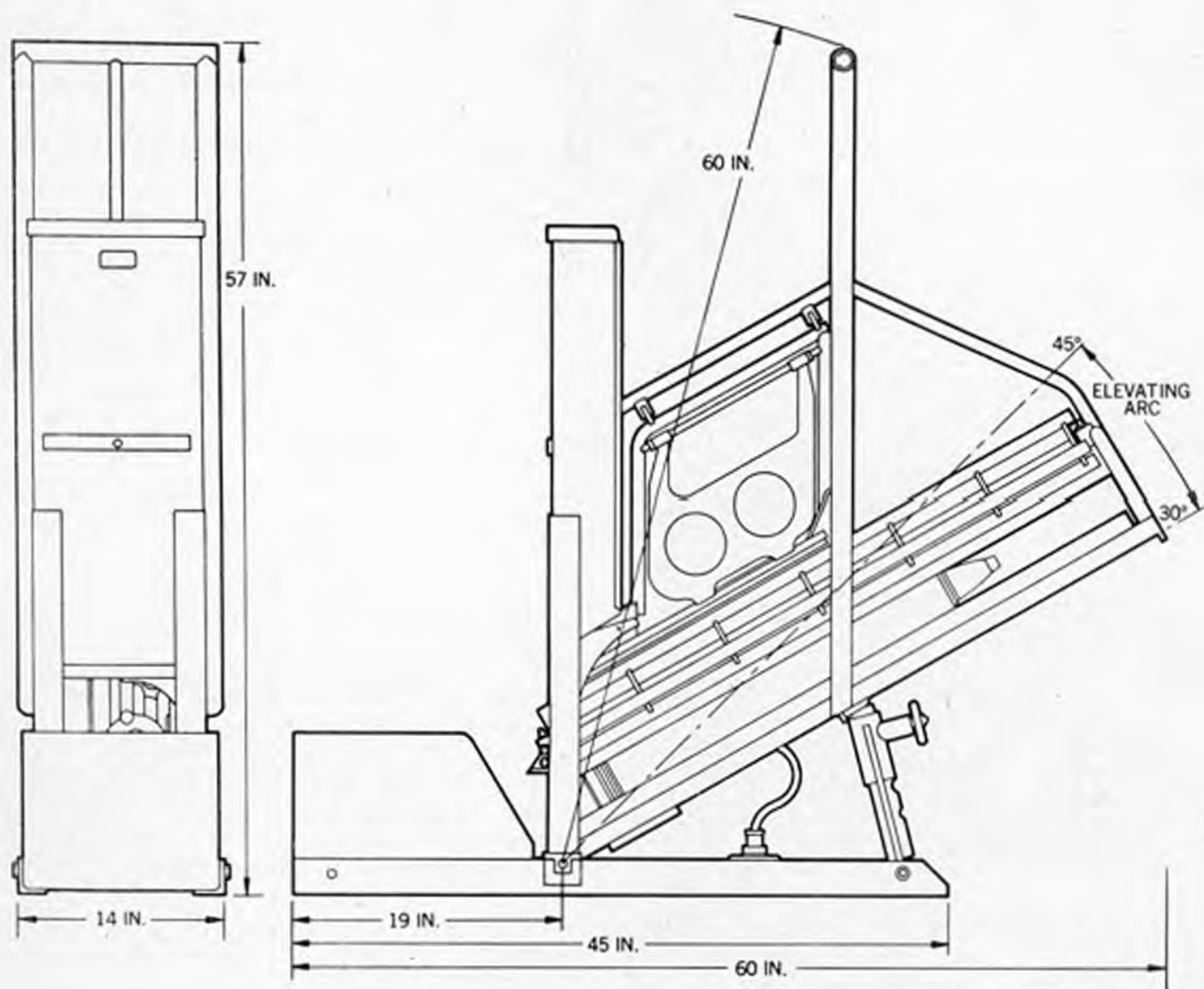
- Instruction handbook OP 1246
- Procurement specifications none
- Installation instructions none
- Spare parts list none
- Catalog of Navy Material none
- Applicable Ordalts Ordalt 2377
- 5.0-inch Spin-stabilized Rockets OP 1260

*Accomplishment of Ordalt 2377 required

**Estimated

***Varies with installation

****Estimated - varies with firing panel used



Rocket Launcher Mk 51 Mod 0

ROCKET LAUNCHER MARK 51 MOD 1

DESCRIPTION

Rocket Launcher Mk 51 Mod 1 is an electrically fired, automatic gravity-fed weapon for laying intense rocket barrages from amphibious and landing craft, vehicles, and land installations.

The launcher consists of a guide and a deck frame. The guide consists of a supply magazine, firing magazine, reel, and a pair of launching rails. The magazines hold the rockets and feed them into the reel, which separates the rockets and permits them to drop onto the guides one at a time. The rockets are fed from the firing magazine first, and then from the supply magazine. The deck frame consists of an elevating crutch

and a frame with a scoop-like blast deflector at the after end. The length of the crutch can be adjusted to vary the elevation of the launcher.

Electrical contact for firing is made by a spring-loaded contact that bears on the rocket contact band. The circuit is completed through the rocket body to the guide rails.

This launcher is identical to Rocket Launcher Mk 51 Mod 0 except that the blast shield added to Rocket Launcher Mk 51 Mod 0 by Ordalt 2377 is incorporated into the design of the guide assembly.

DATA

Number of guides1

Launcher ammunition:-

Service

*5.0-inch Rockets Mk 7 Mods 0,1,2, and 3

*5.0-inch Rocket Mk 10 Mod 0

5.0-inch Rockets Mk 13 Mod 0; Mk 16 Mod 0

Drill

5.0-inch Rockets Mk 9 Mods 0 and 1; Mk 12 Mod 0;
Mk 15 Mod 0; and Mk 18 Mod 0

Smoke

5.0-inch Rocket Mk 19 Mod 0

Target

5.0-inch Rockets Mk 8 Mods 0 and 1; Mk 11 Mod 0;
Mk 14 Mod 0; and Mk 17 Mod 0

Weight:-

Less ammunition, lb230

Loaded, lb830

Major dimensions:-

Height at maximum elevation, in.62**

Width, in.14

Length, in.60

Length of guide, in.43**

Radius of clearance circle.....non-trainable

Radius of working circle.....non-trainable

Guide-laying movements:-

Trainnon-trainable

Elevation, deg30 to 45

Firing arcs:-

Same as guide-laying movements

Training speednon-trainable

Elevating speed...5-deg increments, manually elevated

Firing arcs:-

Same as guide-laying movements

Training speed..... non-trainable

Elevating speed... 5-deg increments, manually elevated

Firing data:-

Type electric

Voltage at firing pins, v AC or DC 6 to 24***

Firing mechanism (only one per launcher)

Firing Panel Mk 9 Mod 1

Firing Panel Mk 11 Mod 1

Firing Panel Mk 12 Mod 1

Firing Panel Mk 16 Mod 1

Firing Panel Mk 18 Mod 1

Firing Panel Mk 19 Mod 0

Launcher capacity, rounds12

Firing interval, sec0.3***

Ballistic data:-

5.0-inch Rocket Mk 7 Mod 2

Weight, lb49.8

Range at 45 degrees elevation, yd10,000

Velocity (end of burning), fps1540

Range table.....OP 1244 (2nd Revision)

Mount data:-

Components

Rocket Launcher..... Mk 51 Mod 1

List of drawings..... Sk 166329

General arrangement..... Dr 425100

Adapters and attachments..... none

Publication references:-

Instruction handbook OP 1246

Procurement specifications..... none

Installation instructions..... none

Spare parts list..... none

Catalog of Navy Material Section 3550

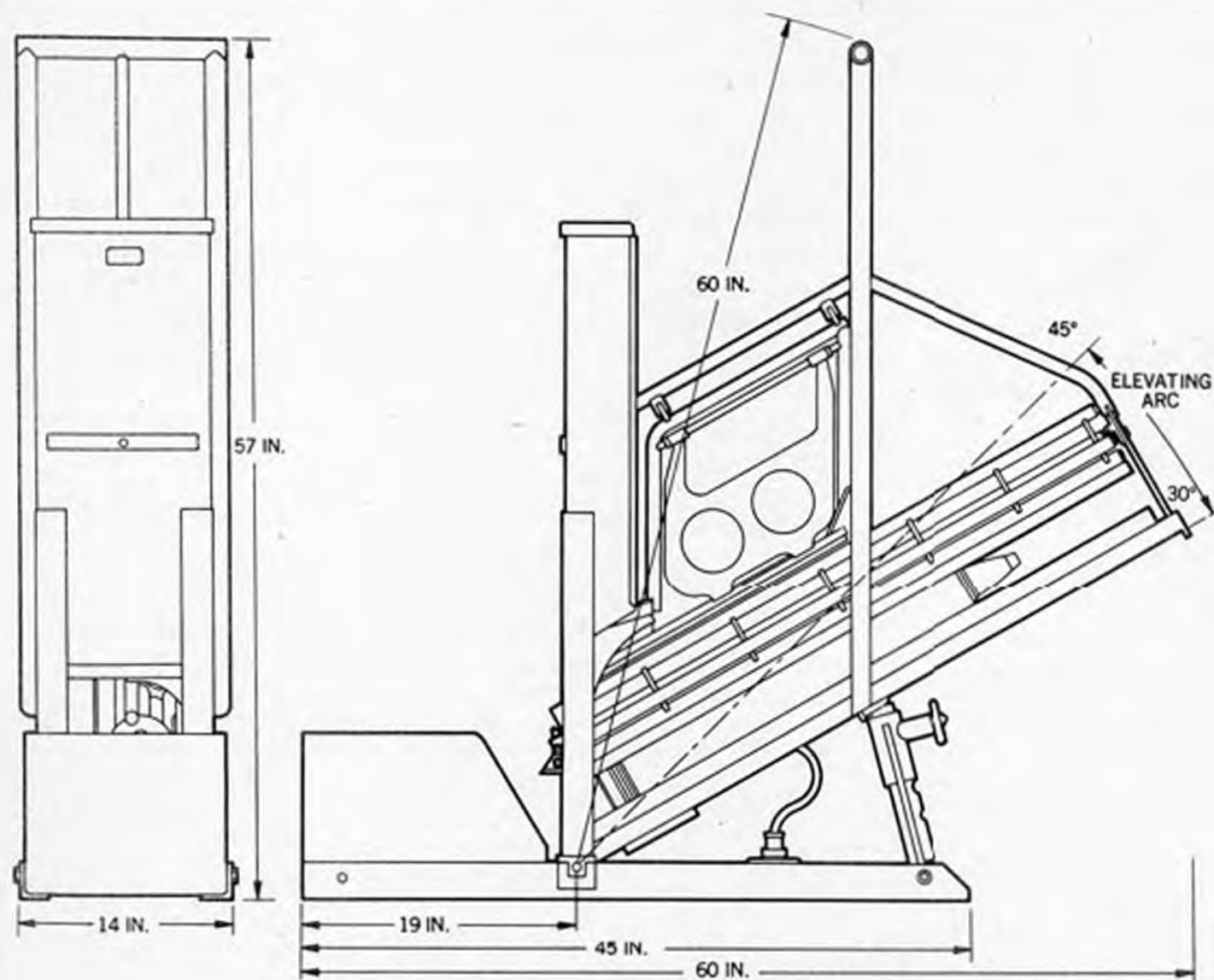
5.0-inch Spin-stabilized Rockets OP 1260

*Accomplishment of Ordalt 2377 required

**Estimated

***Varies with installation

****Estimated - varies with firing panel used



Rocket Launcher Mk 51 Mod 1

ROCKET LAUNCHER MARK 52 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 52 Mod 0 is an electrically fired weapon for laying rocket barrages from vessels, landing craft, amphibious vehicles, and land vehicles. The launcher may be reloaded during operation and is designed to be mounted on either gunwale of landing craft.

The launcher consists of a single guide, a lightweight metal magazine frame, indexing and firing mechanisms, and an elevation control. The guide from which the rocket is fired consists

of two rails, one stationary and one movable. The movable guide is swung inward by an operating handle to remove a misfired round. The magazine frame extends upward and is tilted to form an inclined rocket feeder. In operation, the rockets roll down the incline and are indexed into the firing position. The position of the frame facilitates reloading as rockets in the magazine are fired. Rockets may be fired singly, or if the magazine is continuously reloaded and contains not less than six rockets, the firing is automatic and continuous.

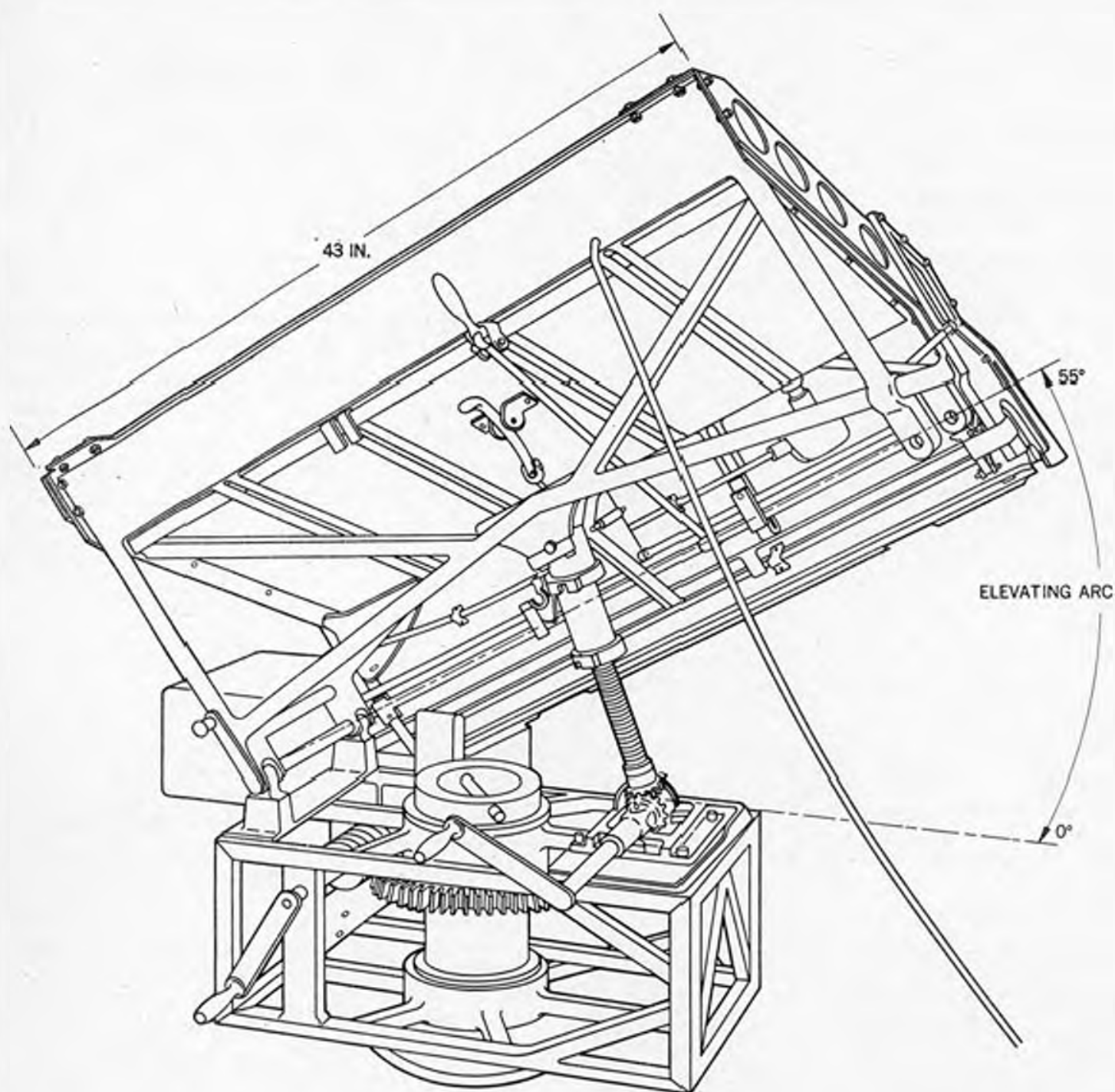
DATA

Number of guides.....1
 Launcher ammunition:-
 Service
 5.0-inch Rocket Mk 10 Mod 0
 Drill
 5.0-inch Rocket Mk 12 Mod 0
 Practice
 5.0-inch Rocket Mk 11 Mod 0
 Weight:-
 Less ammunition, lb.....264
 Loaded, lb.....615
 Major dimensions:-
 Height, in.*
 Width, in.28
 Length, in.43
 Length of guide, in.*
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation, deg0 to 55
 Firing arcs:-
 Same as guide-laying movements
 Training speed..... non-trainable
 Elevating speed..... manually elevated

Firing data:-
 Type.....electric
 Voltage at firing pins**
 Firing mechanism**
 Launcher capacity, rounds.....7
 Firing interval.....manually reloaded
 Ballistic data:-
 5.0-inch Rocket Mk 10 Mod 0
 Weight, lb.....49.8
 Range at 45 degrees elevation, yd.....5000
 Velocity (end of burning), fps.....830
 Range tableOP 1244 (Second Revision)
 Mount data:-
 Components
 Rocket Launcher.....Mk 52 Mod 0
 List of drawings.....not assigned
 General arrangement.....not assigned
 Adapters and attachments.....none
 Publication references:-
 Instruction handbook.....none
 Procurement specifications.....none
 Installation instructions.....none
 Spare parts list.....none
 Catalog of Navy Material.....none
 5.0-inch Spin-stabilized Rockets.....OP 1260

*Design drawings not available

**Firing mechanism not designated



Rocket Launcher Mk 52 Mod 0

ROCKET LAUNCHER MARK 101 MOD 0
DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 101 Mod 0 is a director-controlled, electrically fired weapon for laying ship-to-shore rocket barrages.

The launcher, which is power-driven in train and elevation, consists of a stand, a carriage, a cradle, and eight rocket-launching guides. The carriage is a modified 40mm Carriage Mk 1 Mod 2 that supports the cradle in which the guides are mounted. The guide assemblies are similar to the one used in Rocket Launcher Mk 51 Mod 0. Each assembly holds 12 rockets and consists of a supply magazine, a firing magazine, a reel, and a

pair of launching rails. The magazines hold the rockets and feed them into the reel, which separates the rockets and permits them to drop onto the guides, one at a time. The rockets are fed from the firing magazine first, and then from the supply magazine. The launcher is trained and elevated as a unit.

Electrical contact for firing is made by a spring-loaded contact that bears on the rocket contact band. The circuit is completed through the rocket body to the guide rails.

DATA

Number of guides 8

Launcher ammunition:-

Service

5.0-inch Rocket Mk 7 Mods 0-3; Mk 10 Mod 0

5.0-inch Rocket Mk 13 Mod 0; Mk 16 Mod 0

Drill

5.0-inch Rocket Mk 9 Mods 0 and 1; Mk 12 Mod 0

5.0-inch Rocket Mk 15 Mod 0; Mk 18 Mod 0

Smoke

5.0-inch Rocket Mk 19 Mod 0

Target

5.0-inch Rocket Mk 8 Mods 0 and 1; Mk 11 Mod 0

5.0-inch Rocket Mk 14 Mod 0; Mk 17 Mod 0

Weight:-

Less ammunition, lb 12,750

Loaded, lb 17,550

Major dimensions:-

Height, in. 116

Width, in. 165

Length, in. 95*

Length of guides, in. 43*

Radius of clearance circle, in. 94

Radius of working circle, in. 119

Guide-laying movements:-

Train, right, deg 0 to 360**

Train, left, deg 0 to 360**

Elevation, deg 15 to 65

Firing arcs:-

Same as guide-laying movements

Training speed, deg per sec 30

Elevating speed, deg per sec 20

Firing data:-

Type electric

Voltage at firing pins, v AC 20

Firing data (cont)

Firing mechanism Firing Panel Mk 20 Mod 1
with Intervalometer Mk 6 Mod 0
or Mk 6 Mod 1

Launcher capacity, rounds 96

Firing interval, sec 0.3***

Ballistic data:-

5.0-inch Rocket Mk 7 Mod 2

Weight, lb 49.8

Range at 45 degrees elevation, yd 10,000

Velocity (end of burning), fps 1540

Range table CP 1244 (Second Revision)

Mount data:-

Components

Rocket Launcher Guides (8) Mk 51 Mod 2

Rocket Launcher Cradle Mk 101 Mod 0

Rocket Launcher Carriage Mk 101 Mod 0

Electric Circuit Mk 101 Mod 0

40mm Stand Mk 1 Mod 0

Train Power Drive Mk 4 Mod 2

Elevation Power Drive Mk 4 Mod 2

List of drawings Sk 167501

General arrangement Dr 258370, 1, 2

Adapters and attachments none

Publication references:-

Instruction handbook none

Procurement specifications none

Installation instructions none

Spare parts list none

Catalog of Navy Material none

5.0-inch Rockets CP 1260

Rocket Launcher Mk 101 (initial tests) OD 4779

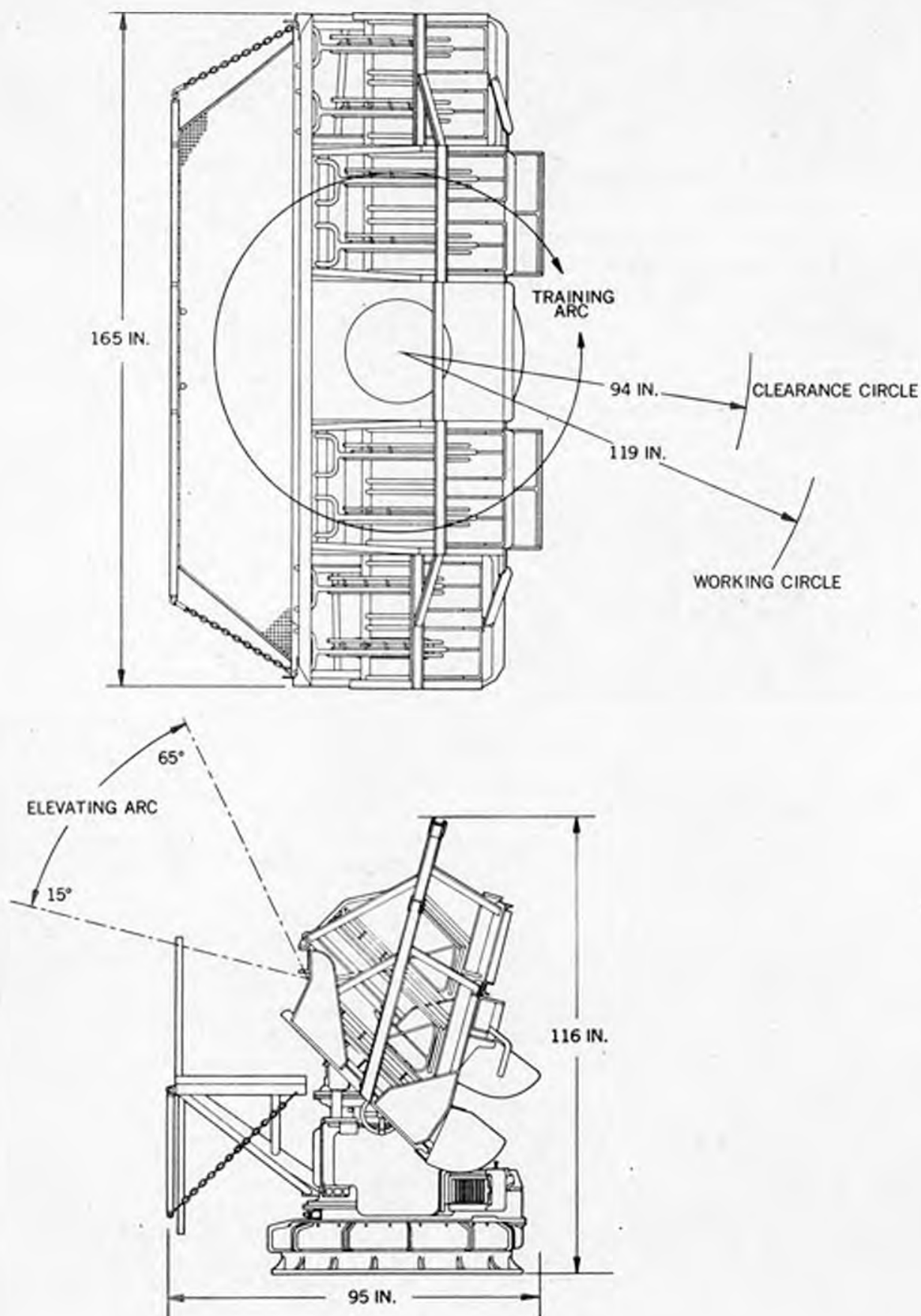
OD 4797

Applicable Ordalts Ordalt 2377

*Estimated

**May be limited by firing stop mechanism

***Guides are ripple-fired in pairs



Rocket Launcher Mk 101 Mod 0

ROCKET LAUNCHER MARK 101 MOD 1

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 101 Mod 1 is a director-controlled, electrically fired weapon for laying ship-to-shore rocket barrages.

The launcher consists of a stand, a carriage, a cradle, and eight rocket-launching guides. The carriage is a 40mm Carriage Mk 1 Mod 2 modified to support the cradle in which the guides are mounted. The guide assemblies are similar to the one used in Rocket Launcher Mk 51 Mod 0. Each assembly holds 12 rockets and consists of a supply magazine, firing magazine, reel, and a pair of launching rails. The magazines hold the

rockets and feed them into the reel, which separates the rockets and permits them to drop onto the guides, one at a time. The rockets are fed from the firing magazine first, and then from the supply magazine. The launcher is trained and elevated as a unit. Rocket Launcher Mk 101 Mod 1 is identical to Rocket Launcher Mk 101 Mod 0 except that it has hydraulic power drives instead of amplidyne power drives, and the carriage is modified.

Electrical contact for firing is made by a spring-loaded contact that bears on the rocket contact band. The circuit is completed through the rocket body to the guide rails.

DATA

Number of guides8

Launcher ammunition:-

Service

5.0-inch Rocket Mk 7 Mods 0-3; Mk 10 Mod 0

5.0-inch Rocket Mk 13 Mod 0; Mk 16 Mod 0

Drill

5.0-inch Rocket Mk 9 Mods 0 and 1; Mk 12 Mod 0

5.0-inch Rocket Mk 15 Mod 0; Mk 18 Mod 0

Smoke

5.0-inch Rocket Mk 19 Mod 0

Target

5.0-inch Rocket Mk 8 Mods 0 and 1; Mk 11 Mod 0

5.0-inch Rocket Mk 14 Mod 0; Mk 17 Mod 0

Weight:-

Less ammunition, lb13,680

Loaded, lb18,400

Major dimensions:-

Height, in. 116

Width, in. 165

Length, in. 95

Length of guides, in. 43

Radius of clearance circle, in. 94

Radius of working circle, in. 119

Guide-laying movements:-

Train, right (max), deg 0 to 360

Train, left (max), deg 0 to 360

Elevation, deg 15 to 65

Firing arcs:-

Same as guide-laying movements

Training speed, deg per sec 30

Elevating speed, deg per sec 20

Firing data:-

Type electric

Voltage at firing pins, v AC 20

Firing data (cont)

Firing mechanism.....Firing Panel Mk 20 Mod 1
with Intervalometer Mk 6 Mod 0
or Mk 6 Mod 1

Launcher capacity, rounds 96

Firing interval, sec 0.3

Ballistic data:-

5.0-inch Rocket Mk 7 Mod 2

Weight, lb49.8

Range at 45 degrees elevation, yd10,000

Velocity (end of burning), fps1540

Range tableOP 1244 (Second Revision)

Mount data:-

Components

Rocket Launcher Guides (8)..... Mk 51 Mod 2

Rocket Launcher CradleMk 101 Mod 0

Rocket Launcher CarriageMk 101 Mod 1

Electric Circuit.....Mk 101 Mod 0

40mm StandMk 1 Mod 0

Train Power Drive..... Mk 5 Mod 21

Elevation Power Drive Mk 5 Mod 18

List of drawings Sk 167502

General arrangement.....not assigned

Adapters and attachments none

Publication references:-

Instruction handbook..... none

Procurement specifications none

Installation instructions none

Spare parts list none

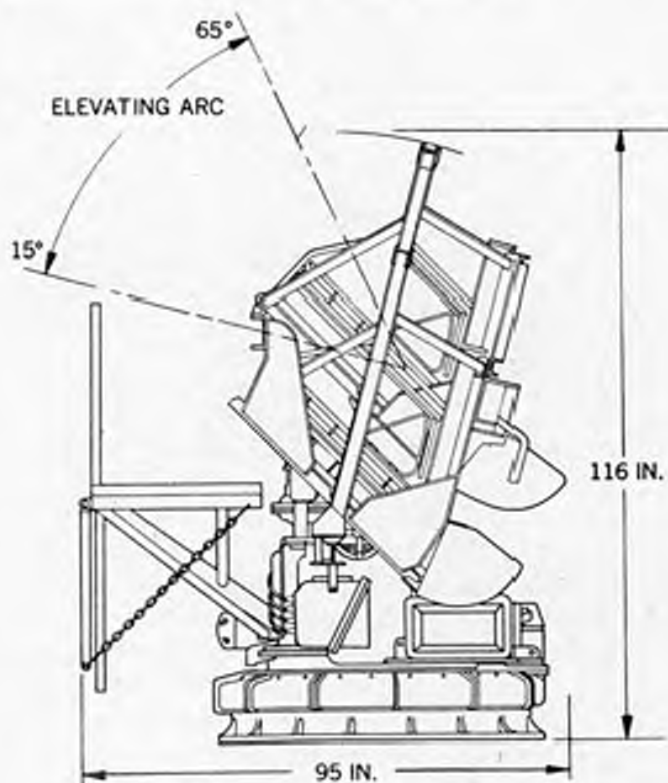
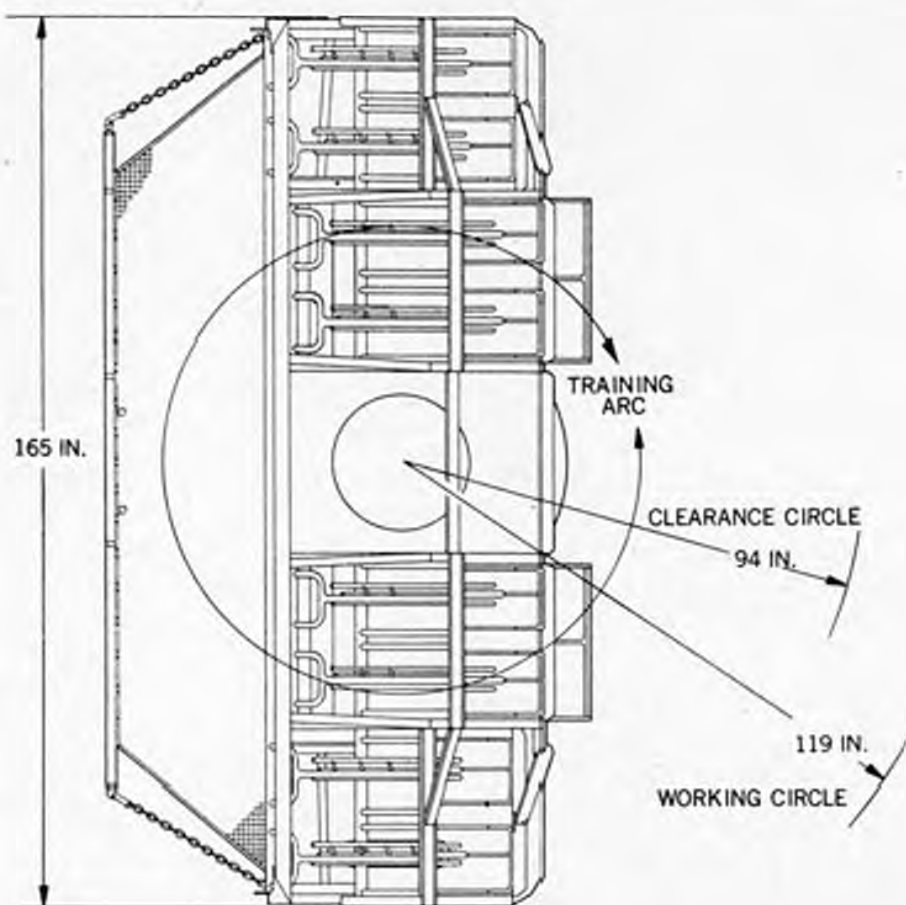
Catalog of Navy Material none

5.0-inch Rockets OP 1260

Rocket Launcher Mk 101 (initial tests).... OD 4779

OD 4797

Applicable Ordalts Ordalt 2377



Rocket Launcher Mk 101 Mod 1

ROCKET LAUNCHER MARK 102 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 102 Mod 0 is an electrically fired, director-controlled weapon for laying continuous rocket barrages from a Landing Ship Medium, Rocket (LSMR).

The launcher, which is power-driven in train and elevation, consists of an above-deck mount and a below-deck ammunition hoist. The mount has two trunnion-supported guides, a rocket launcher cradle, and a rocket launcher carriage. The carriage is supported by a 40mm stand. The rockets are manually loaded into the ammunition

hoist below deck and raised to the mount. Both guides swing to the vertical position to receive rockets from the hoist, and then return to the firing position. The elevation of the launcher guides is determined by the position of the elevation shoulder. When the elevation shoulder stops the guides, the rockets are automatically fired by firing pins that pass through holes in the guides. The position of the elevation shoulder is determined by the director. The after end of the guide assembly is provided with a scoop-type blast deflector.

DATA

Number of guides2
Launcher ammunition:-

Service

5.0-inch Rocket Mk 7 Mods 0-3

5.0-inch Rocket Mk 10 Mod 0

Drill

5.0-inch Rocket Mk 9 Mods 0 and 1; Mk 12 Mod 0

Target

5.0-inch Rocket Mk 8 Mods 0 and 1; Mk 11 Mod 0

Weight:-

Less ammunition, lb11,000

Loaded, lb11,100

Major dimensions:-

Height

Above deck at maximum elevation, in.94

Below deck, in.84

Width, in.75

Length at 0 degrees elevation, in.80

Length of guides, in.52

Radius of clearance circle, in.49

Radius of working circle, in.73

Guide-laying movements:-

Train, right, deg0 to 180

Train, left, deg0 to 180

Elevation, deg0 to 90

Firing arcs:-

Train, right (max), deg0 to 180

Train, left (max), deg0 to 180

Elevation, deg0 to 66

Training speed, deg per sec33

Elevating speed, deg per sec27

Firing data:-

Typeelectric

Voltage at firing pins, v AC20

Firing mechanism.....Firing Panel Mk 20 Mod 0

with Intervalometer Mk 6 Mod 0

or Intervalometer Mk 6 Mod 1

Firing data (cont)

Launcher capacity, rounds4

Firing interval (fired in pairs), sec4.2

Ballistic data:-

5.0-inch Rocket Mk 7 Mod 2

Weight, lb49.8

Range at 45 degrees elevation, yd10,000

Velocity (end of burning), fps1540

Range tableOP 1244 (Second Revision)

Mount data:-

Components

Rocket Launcher Guide (r. h.).....Mk 102 Mod 0

Rocket Launcher Guide (l. h.).....Mk 102 Mod 1

Rocket Launcher CradleMk 102 Mod 0

Rocket Launcher SightMk 102 Mod 0

Rocket Launcher CarriageMk 102 Mod 0

40mm StandMk 1 Mod 0

Ammunition HoistMk 102 Mod 0

Train Power Drive.....Mk 4 Mod 3

Elevation Power DriveMk 4 Mod 3

Electric Circuit.....Mk 102 Mod 0

List of drawingsSk 167503

General arrangementDr 507050

Dr 506674,5,6

Adapters and attachmentsnone

Publication references:-

Instruction handbook....OP 1424 (Second Revision)

Procurement specificationsnone

Installation instructionsnone

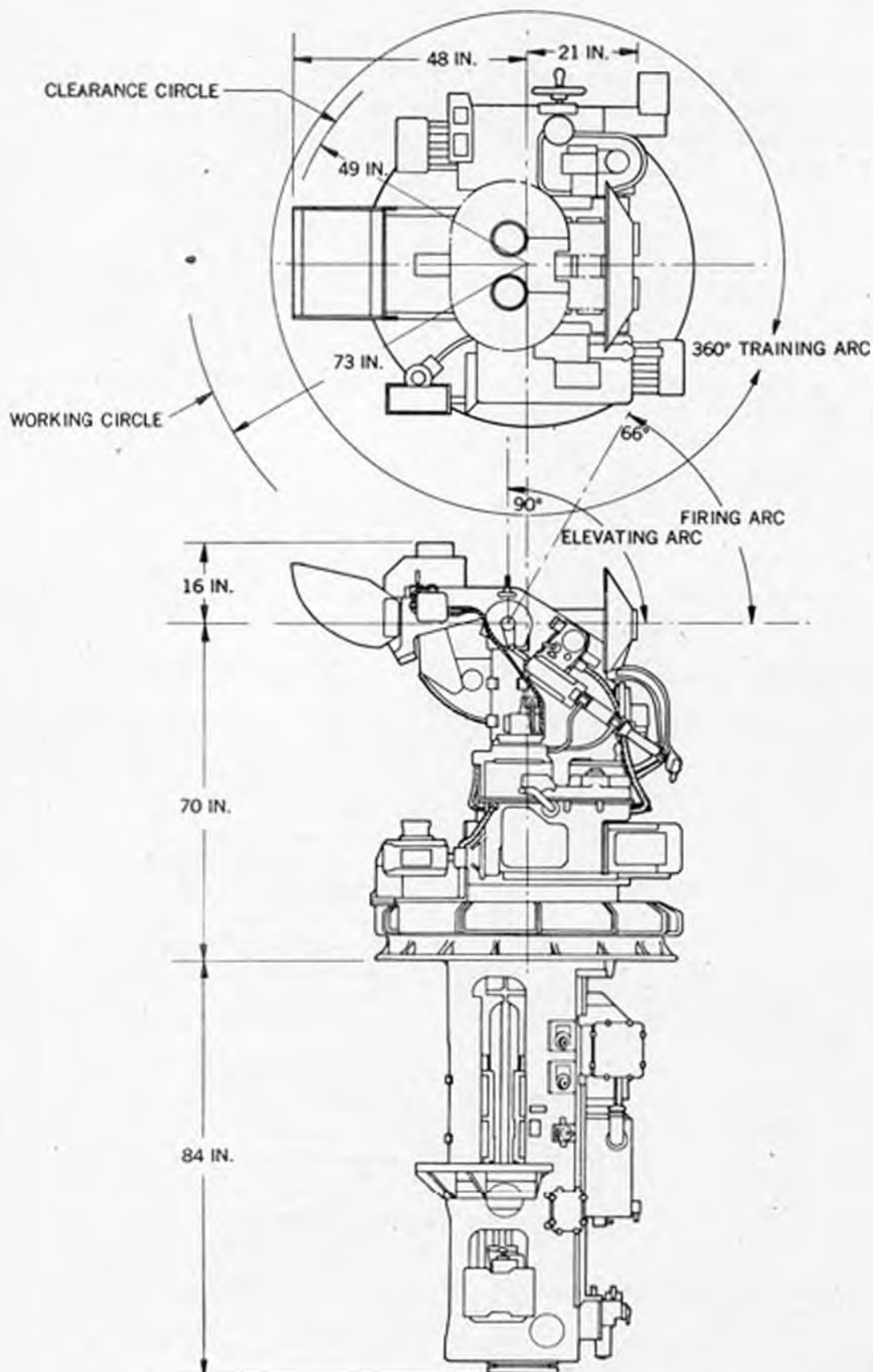
Spare parts listNAVORD 21348

Catalog of Navy MaterialSection 5726

5.0-inch Spin-stabilized RocketsOP 1260

Applicable Ordalts...Ordalts 1422,1424,1471,1503,

1819,1841,1997,2059,2522



Rocket Launcher Mk 102 Mod 0

ROCKET LAUNCHER MARK 105 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 105 Mod 0 is an electrically fired, director-controlled weapon for laying continuous rocket barrages from a Landing Ship Medium, Rocket (LSMR). This launcher is an improved development of Rocket Launcher Mk 102 Mod 0.

The launcher consists of an above-deck mount and a below-deck ammunition hoist. The mount has two trunnion-supported guides, an elevation shoulder, a cradle, and a carriage. The carriage is supported on the stand by three sets of roller bearings and is free to rotate in train. The elevating mechanism of the launcher is similar to

that of Rocket Launcher Mk 102 Mod 0 except that this launcher is capable of firing at a higher angle of elevation. The rockets are manually loaded into the ammunition hoist below deck and then raised to the mount. Both guides swing to the vertical position to receive rockets from the hoist, and then return to the firing position. The elevation of the launcher guides is determined by the position of the elevation shoulder. When the elevation shoulder stops the guides, the rockets are automatically fired. The position of the elevation shoulder is determined by the director. A scoop-type blast deflector is mounted on the after end of the guide assembly.

DATA

Number of guides 2

Launcher ammunition:-

5.0-inch Rocket (Spin-stabilized)*

Weight:-

Less ammunition, lb 6800

Loaded, lb 6900

Major dimensions:-

Height

Above deck at maximum elevation, in. 58**

Below deck, in. 84

Width, in. 55**

Length (maximum), in. 64**

Length of guides, in. 37**

Radius of clearance circle (above deck), in. ... 37

Radius of working circle (below deck), in. 72**

Guide-laying movements:-

Train, right, deg 0 to 180

Train, left, deg 0 to 180

Elevation, deg 0 to 90

Firing arcs varies with installation

Training speed, deg per sec 15

Elevating speed, deg per sec 15

Firing data:-

Type electric

Voltage at firing pins, v AC 20

Firing mechanism.....Firing Panel Mk 20 Mod 0
with Intervalometer Mk 8 Mod 1

Firing data (cont)

Launcher capacity, rounds 4***

Firing interval, sec 2.5***

Ballistic dataammunition not designated

Mount data:-

Components

Guide (2)Mk 105 Mod 0

Elevation Shoulder.....Mk 104 Mod 0

CarriageMk 105 Mod 0

StandMk 104 Mod 0

Hoist.....Mk 105 Mod 0

Train Power Drive.....Mk 10 Mod 13

Elevation Power Drive.....Mk 10 Mod 13

List of drawings LD 258259

General arrangement Dr 513522

Dr 604164,5

Dr 604317,8

Dr 878984,5

Adapters and attachments none

Publication references:-

Instruction handbook OP 1915

Procurement specifications none

Installation instructions none

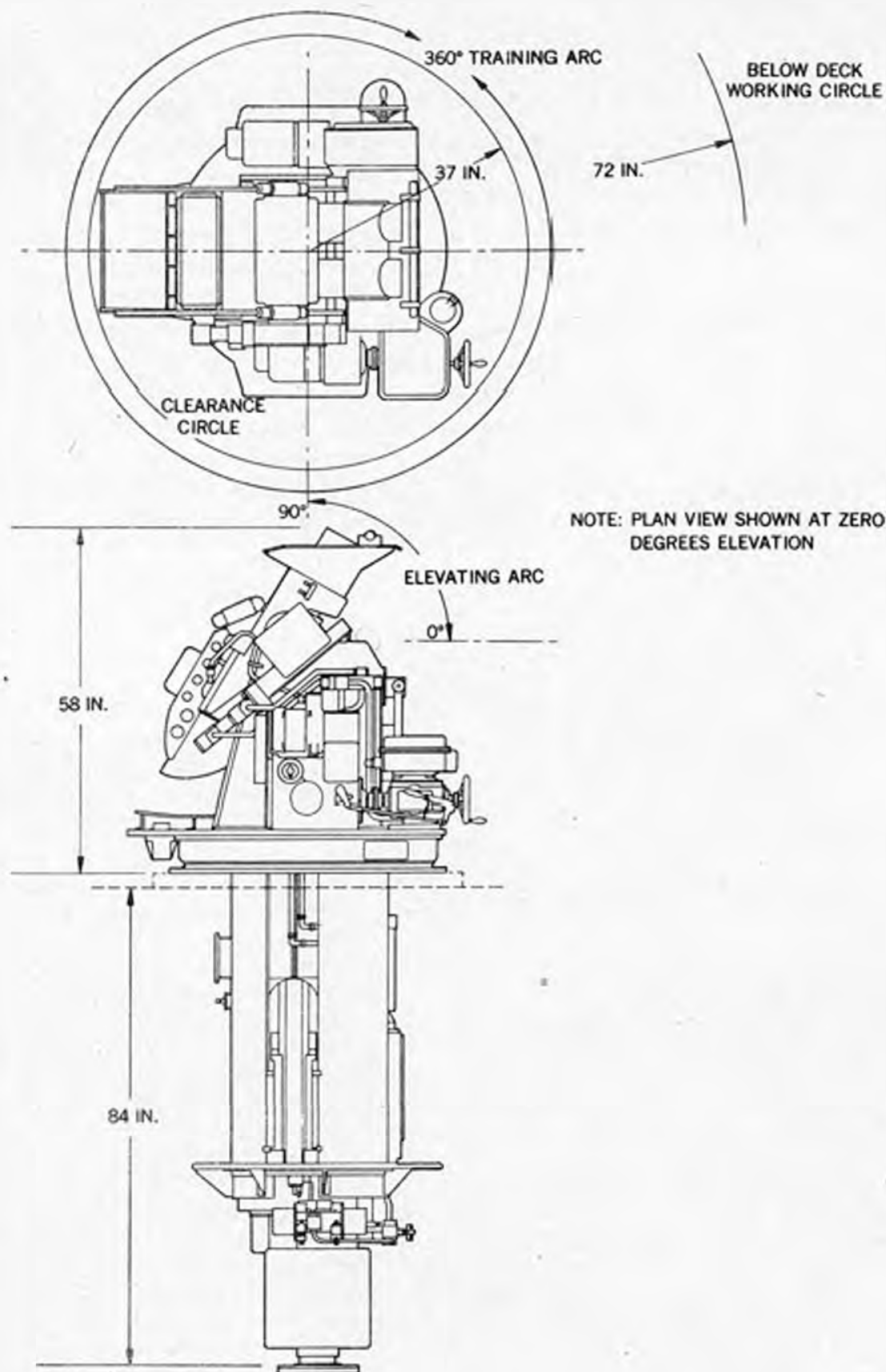
Spare parts list none

Catalog of Navy MaterialSection 5728

*Mk not designated

**Estimated

***Two rockets in hoists and two in guides;
guides are fired simultaneously.



Rocket Launcher Mk 105 Mod 0

ROCKET LAUNCHER MARK 106 MOD 0

DEVELOPMENT COMPLETE: NOT MANUFACTURED

DESCRIPTION

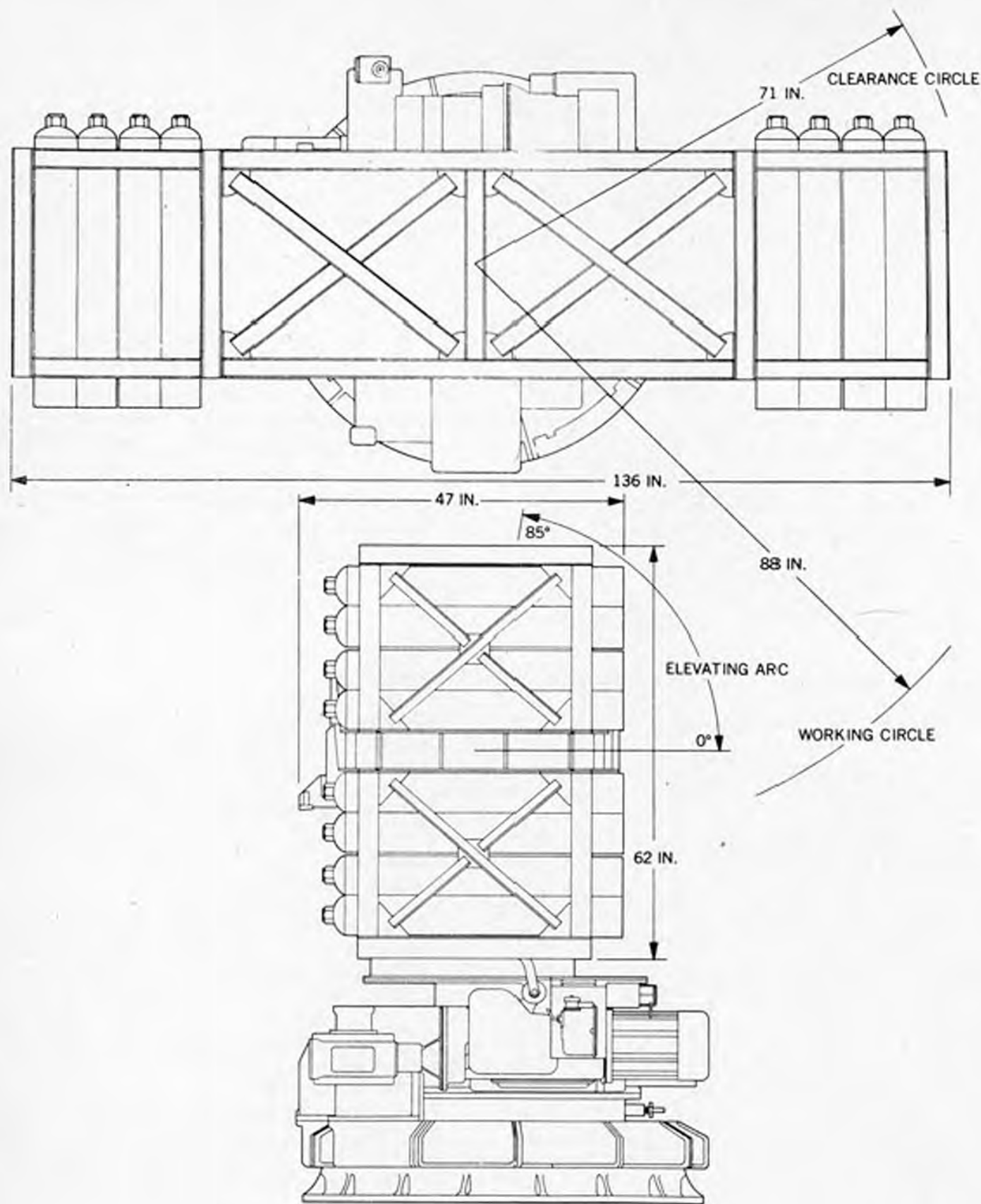
Rocket Launcher Mk 106 Mod 0 is an electrically fired, manually driven weapon for laying barrages of antiaircraft rockets.

The launcher consists of a stand, carriage, cradles, and 16 guides of four tubes each. Eight

guides are mounted on each side of the cradle: four above the center beam of the cradle, and four below. The guide tubes are of the closed-breech type. The cradle and carriage of Rocket Launcher Mk 106 Mod 0 are identical to those used on Rocket Launcher Mk 101 Mod 0.

DATA

Number of guides.....	64	Firing data (cont)	
Launcher ammunition:-		Voltage at firing pins.....	*
5.0-inch Rocket (Spin-stabilized)		Firing mechanism.....	*
Weight:-		Launcher capacity, rounds.....	64
Less ammunition, lb.....	*	Firing interval, sec.....	*
Loaded, lb.....	*	Ballistic data:-	
Major dimensions:-		Ammunition not designated	
Height (maximum), in.....	90**	Mount data:-	
Width, in.....	136	Components	
Length, in.....	45**	Rocket Launcher Guides.....	*
Length of guides, in.....	45**	Rocket Launcher Cradle.....	*
Radius of clearance circle, in.....	71**	Rocket Launcher Carriage.....	*
Radius of working circle, in.....	88**	40mm Stand.....	Mk 1 Mod 0
Guide-laying movements:-		List of drawings.....	Sk 107745
Train, right, deg.....	0 to 360	General arrangement.....	Sk 143498
Train, left, deg.....	0 to 360		Sk 143499
Elevation, deg.....	0 to 85	Adapters and attachments.....	none
Firing arcs:-		Publication references:-	
Same as guide-laying movements		Instruction handbook.....	none
Training speed.....	manually trained	Procurement specifications.....	none
Elevating speed.....	manually elevated	Installation instructions.....	none
Firing data:-		Spare parts list.....	none
Type.....	electric	Catalog of Navy Material.....	none



Rocket Launcher Mk 106 Mod 0

ROCKET LAUNCHER MARK 107 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 107 Mod 0 is a lightweight, power-driven mount for use on motor torpedo boats and patrol vessels. The launcher is manually loaded and fires 5-inch spin-stabilized rockets from a closed-breech type multiple-guide cradle. The power drives of the mount are arranged for manual control.

Three parallel rows of three tubular guides are

mounted on the trunnion-supported cradle. All the guides are fitted with identical closed breeches and electrical firing facilities. The entire breech group is enclosed within a cover that is hinged at the rear of the housing. Elevation and train gear mechanisms are mounted at the right forward side of the carriage. The cockpit-type blast shield on the left of the mount encloses tandem control stations for the launcher operator and sight-setter.

DATA

Number of guides 9

Launcher ammunition:-

5.0-inch Rocket (Spin-stabilized)*

Weight:-

Less ammunition, lb 4408

Loaded, lb 4858**

Major dimensions:-

Height at maximum elevation, in. 92

Width, in. 84

Length, in. 70

Length of guides, in. 44

Radius of clearance circle, in. 53

Radius of working circle, in. 72

Guide-laying movements:-

Train, right, deg 0 to 160

Train, left, deg 0 to 160

Elevation, deg -10 to 85

Firing arcs:-

Same as guide-laying movements

Training speed, deg per sec 50

Elevating speed, deg per sec 50

Firing data:-

Type electric

Voltage at firing pins, v DC 24

Firing mechanism firing selector panel

Launcher capacity, rounds 9

Firing interval (AUTO fire), sec 0.5

Ballistic data ammunition not designated

Mount data:-

Components

Rocket Launcher Guide Mk 107 Mod 0

Rocket Launcher Carriage Mk 107 Mod 0

Rocket Launcher Stand Mk 103 Mod 0

Rocket Launcher Shield Mk 102 Mod 0

List of drawings LD 257036

General arrangement Dr 716274, 5, 6

Publication references:-

Instruction handbook OP 1744

Procurement specifications none

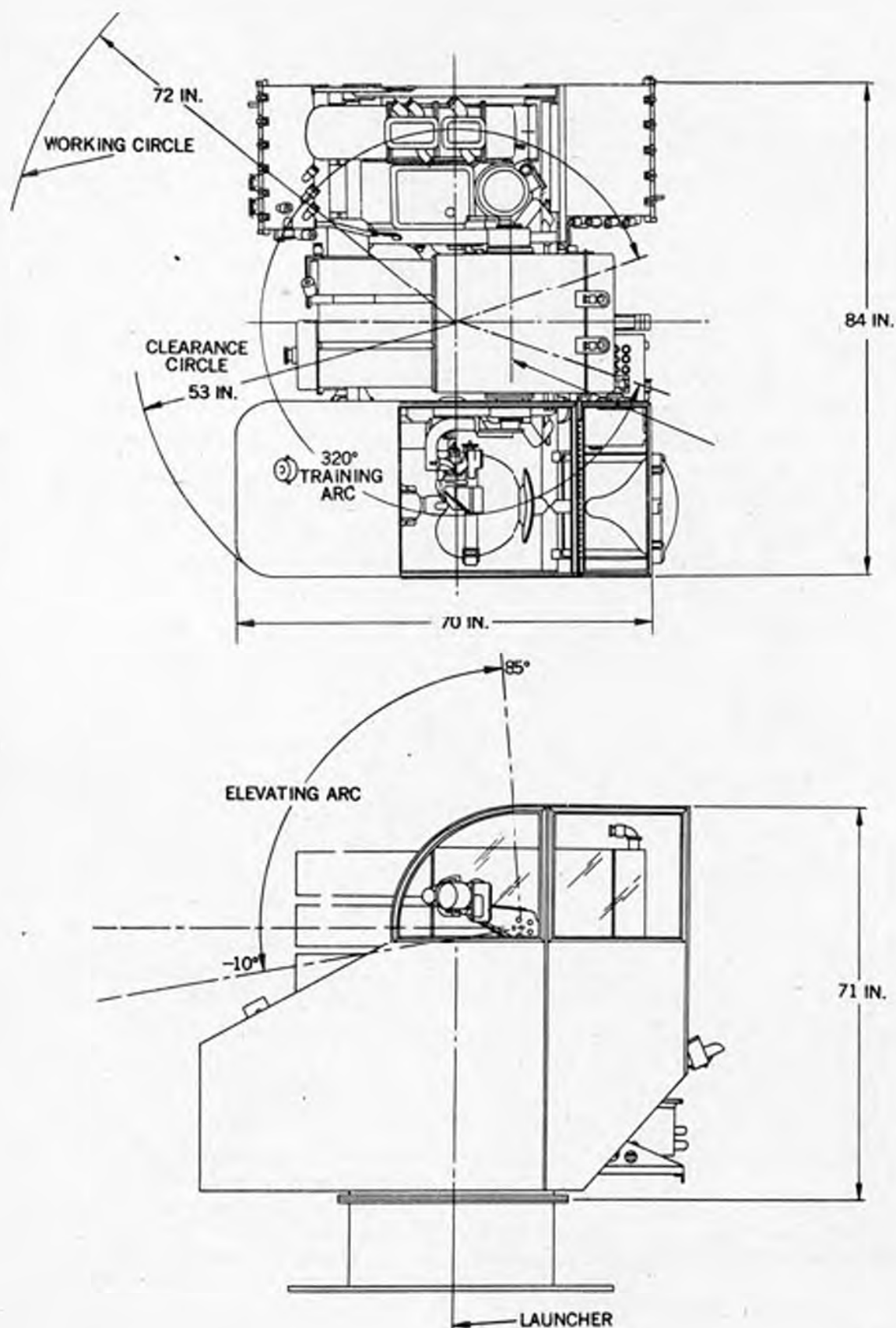
Installation instructions none

Spare parts list none

Catalog of Navy Material none

*Identity not designated

**Estimated



Rocket Launcher Mk 107 Mod 0

ROCKET LAUNCHER MARK 20 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 20 Mod 0 is an electrically fired antisubmarine weapon designed for use on patrol craft. There are usually two launchers mounted on the foredeck of a ship, one port and one starboard. Each launcher is capable of firing four rockets, in two-rocket salvos.

Rocket Launcher Mk 20 Mod 0 consists of four launching guides welded together as a unit. The unit, which is hinged to a base that is fastened to the deck foundation, is elevated and supported by a crutch that is also hinged to the base. The launcher guides have a slight spread to space the pattern. Each guide is

equipped with blast deflectors and retractable retainers. These retainers prevent the rockets from being dislodged in heavy seas. As an additional protection against blast action, a steel deck plate extends 2 feet behind the launcher. When not in use, the launchers are collapsed and lashed to the deck. In the collapsed position the steel deck plate is folded over the rails.

Electrical contact for firing is made by two knife-edge contacts, one mounted on the forward end of the deflector and the other on a phosphor bronze spring.

DATA

Number of guides 4

Launcher ammunition:-

Service

7.2-inch Rocket Mk 1 Mod 0

Practice

7.2-inch Rocket Mk 2 Mod 0

Drill

7.2-inch Rocket Mk 3 Mod 0

Weight:-

Less ammunition, lb 400

Loaded, lb 640

Major dimensions:-

Height in erected position, in 62

Width, in 38

Length in collapsed position, in 84

Length of guide, in 84

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation (fixed angle), deg 45

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

Type electric

Voltage at firing pins, v DC 7.5 or 45

Firing data (cont)

Firing mechanism (only one per launcher)

Firing Panel Mk 2 Mod 2

Firing Panel Mk 3 Mod 0

Firing Panel Mk 3 Mod 2

Launcher capacity, rounds 4

Firing interval (salvo), sec 0.14

Ballistic data:-

7.2-inch Rocket Mk 1 Mod 0

Weight, lb 60

Range at 45 degrees elevation, yd 293

Velocity (end of burning), fps 175

Range table OP 1437

Mount data:-

Components

Rocket Launcher Mk 20 Mod 0

List of drawings Sk 91106

General arrangement Dr 328872

Adapters and attachments Rocket Launcher Mk 14

Publication references:-

Instruction handbook OP 1002 (First Revision)

Procurement specifications OS 2759

Installation instructions none

Spare parts list NAYORD List 23050

Catalog of Navy Material Section 3350

7.2-inch Rockets OP 1002 (First Revision)

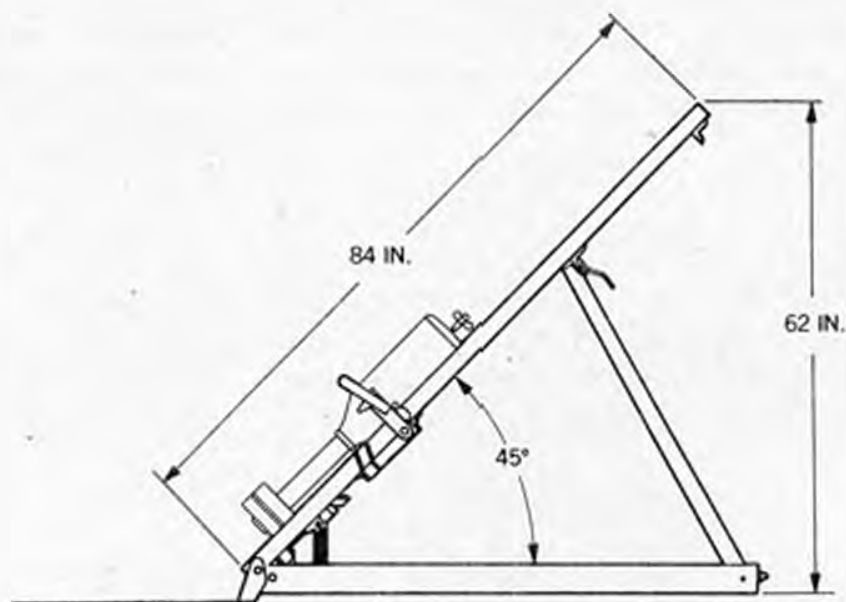
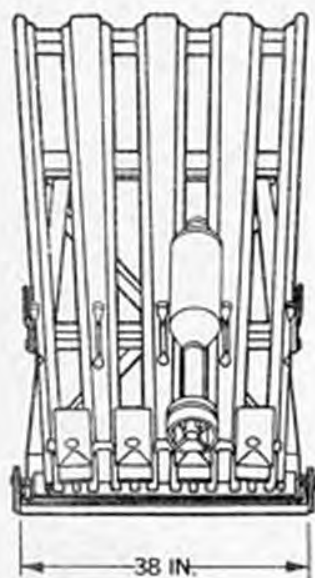
Applicable Ordalts Ordalt 1383

Ordalt 1435

Ordalt 1803

Ordalt 1836

Ordalt 1952



Rocket Launcher Mk 20 Mod 0

ROCKET LAUNCHER MARK 21 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 21 Mod 0 is a design for an electrically fired antisubmarine weapon. Each launcher is capable of firing four rockets, in two-rocket salvos.

Rocket Launcher Mk 21 Mod 0 consists of four launching guides welded together as a unit. The unit, which is hinged to a base that is fastened to the deck foundation, is elevated and supported by a crutch that is also hinged to the base. The launcher guides have a slight spread to space the pattern. Each guide is equipped

with retractable retainers that prevent the rockets from being dislodged in heavy seas. The after end of each guide also contains a blast deflector.

Electrical contact for firing is made by watertight plug receptacles. Rocket Launcher Mk 21 Mod 0 differs from Rocket Launcher Mk 20 Mod 0 in that it has no deck plate, has guides that are constructed of commercial steel shapes, and has different electrical contacts.

DATA

Number of guides 4

Launcher ammunition:-

Ammunition not manufactured

Weight:-

Less ammunition, lb 460

Loaded, lb *

Major dimensions:-

Height in erected position, in. 62

Width, in. 37

Length in collapsed position, in. 86

Length of guide, in. 84

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation (fixed angle), deg 45

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

Type electric

Voltage at firing pins, v DC 7½ or 45

Firing mechanism (only one per launcher)

Firing Panel Mk 2 Mod 2

Firing Panel Mk 3 Mod 0

Firing Panel Mk 3 Mod 2

Launcher capacity, rounds 4

Firing interval (salvo), sec 0.14

Ballistic data:-

Ammunition not manufactured

Mount data:-

Components

Rocket Launcher Mk 21 Mod 0

List of drawings Sk 91206

General arrangement Dr 375590

Publication references:-

Instruction handbook none

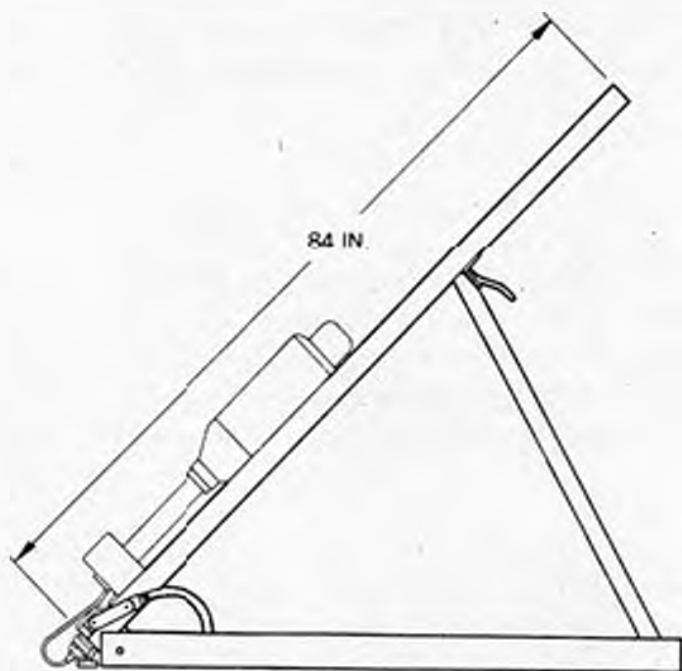
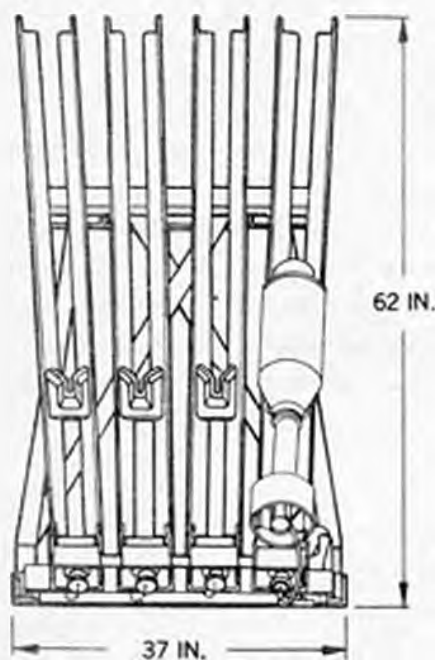
Procurement specifications OS 2936

Installation instructions none

Spare parts list none

Catalog of Navy Material none

*Data not available



Rocket Launcher Mk 21 Mod 0

ROCKET LAUNCHER MARK 22 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 22 Mod 0 is an electrically fired antisubmarine weapon that is capable of firing eight rockets in four-rocket salvos. Usually two launchers of this type are mounted on the foredeck of a ship, one port and one starboard.

The launcher consists of two guide assemblies of four guides each. A guide assembly consists of four launching guides welded together as a unit, and separately hinged to the base. Each guide assembly is elevated and supported by a crutch that is also hinged to the base. When the crutches are released, the guide assemblies can be folded flat on the base, one on top of the other.

The launcher guides have a slight spread to space the pattern. Each guide is equipped with a blast deflector and also with retractable retainers to keep the rockets from being dislodged in heavy seas. The blast-deflecting deck plate furnished with Rocket Launcher Mk 20 Mod 0 is not a part of this launcher, and consequently blast protection for Rocket Launcher Mk 22 Mod 0 must be provided in the mounting or in the installation.

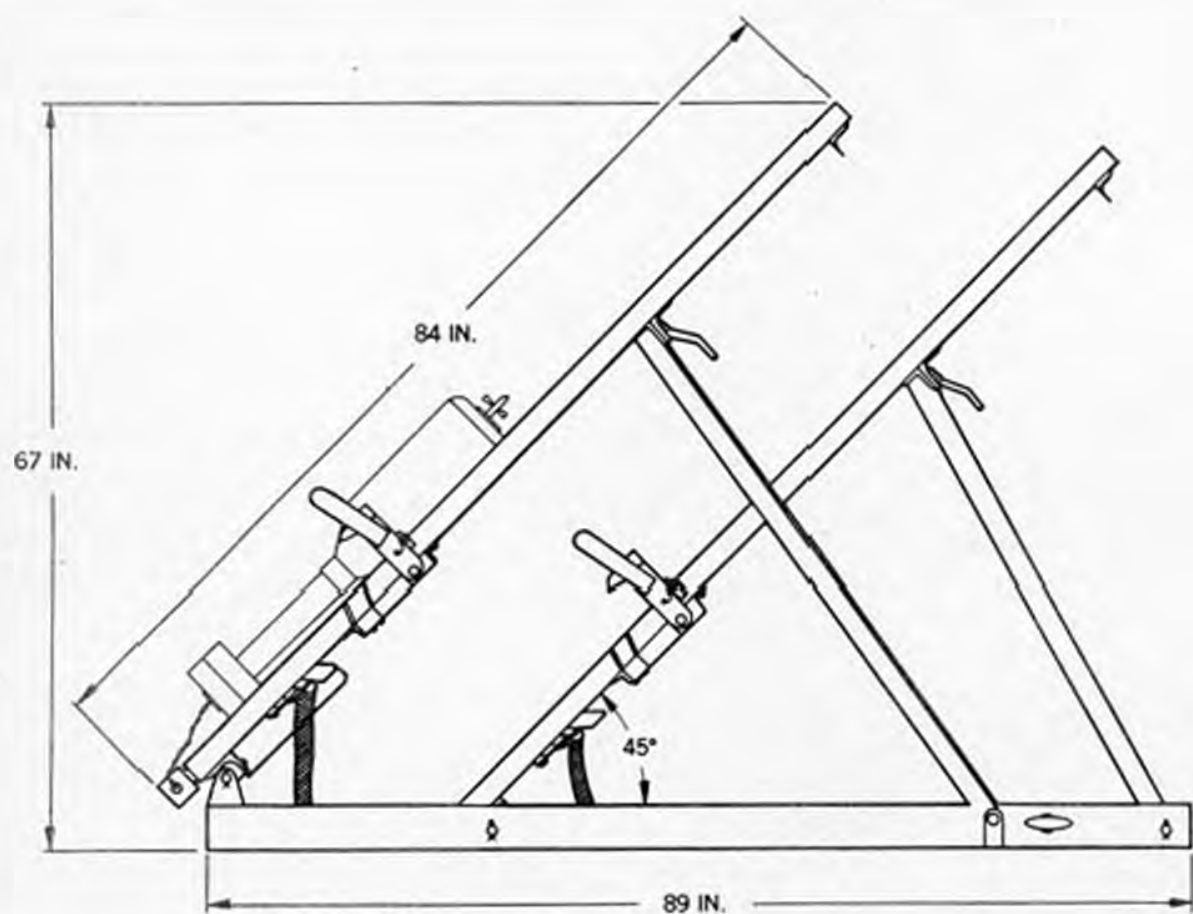
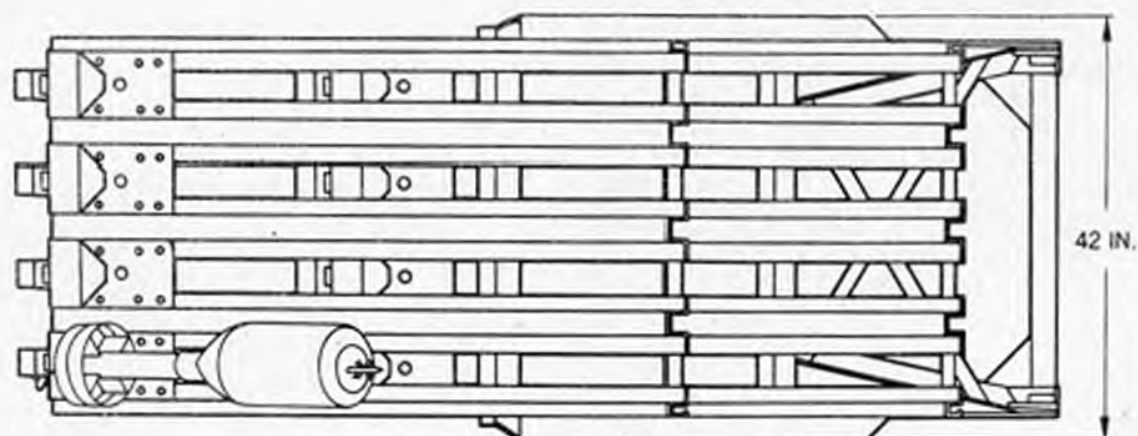
Electrical contact for firing is made to the rocket motor shrouds by two knife-edge contacts, one mounted in the forward end of the deflector and the other in a phosphor bronze spring.

DATA

Number of guides	8
Launcher ammunition:-	
Service	
7.2-inch Rocket Mk 1 Mod 0	
Target	
7.2-inch Rocket Mk 2 Mod 0	
Drill	
7.2-inch Rocket Mk 3 Mod 0	
Weight:-	
Less ammunition, lb	725
Loaded, lb	1245
Major dimensions:-	
Height in erected position, in.	67
Width, in.	42
Length in collapsed position, in.	108
Length of guide, in.	84
Radius of clearance circle	non-trainable
Radius of working circle	non-trainable
Guide-laying movements:-	
Train	non-trainable
Elevation (fixed angle), deg	45
Firing arcs:-	
Same as guide-laying movements	
Training speed	non-trainable
Elevating speed	non-elevatable
Firing data:-	
Type	electric
Voltage at firing pins, v DC	7.5 or 45*

Firing data (cont)	
Firing mechanism (only one per launcher)	
Firing Panel Mk 3 Mod 1	
Firing Panel Mk 3 Mod 3	
Launcher capacity, rounds	8
Firing interval (salvo), sec	0.14
Ballistic data:-	
7.2-inch Rocket Mk 1 Mod 0	
Weight, lb	60
Range at 45 degrees elevation, yd	293
Velocity (end of burning), fps	175
Range table	OP 1437
Mount data:-	
Components	
Rocket Launcher	Mk 22 Mod 0
List of drawings	Sk 108642
General arrangement	Dr 375626
Dr 388712	
Adapters	Rocket Launcher Mk 14 Mod 0
Publication references:-	
Instruction handbook	OP 1002 (First Revision)
Procurement specifications	OS 3084
Installation instructions	OS 2963
Spare parts list	NAVORD 23050
Catalog of Navy Material	Section 3350
7.2-inch Rockets	OP 1002 (First Revision)
Applicable Ordnance	Ordnance 1836

*Varies with firing mechanism



Rocket Launcher Mk 22 Mod 0

ROCKET LAUNCHER MARK 23 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Rocket Launcher Mk 23 Mod 0 is a design for an antisubmarine weapon capable of firing eight rockets in four-rocket salvos. There are usually two launchers of this type mounted on the foredeck of a ship, one on either side of the longitudinal centerline.

The launcher consists of two guide assemblies of four guides each. A guide assembly consists of four launching guides welded together and hinged to a launcher base. Each guide assembly is elevated and supported by a crutch that is also hinged to this base. When the crutches are released, the guide assemblies can be folded flat

on the base, one on top of the other. The launcher guides have a slight spread to space the pattern. Each guide is equipped with a blast deflector and also with retractable retainers to keep the rockets from being dislodged in heavy seas.

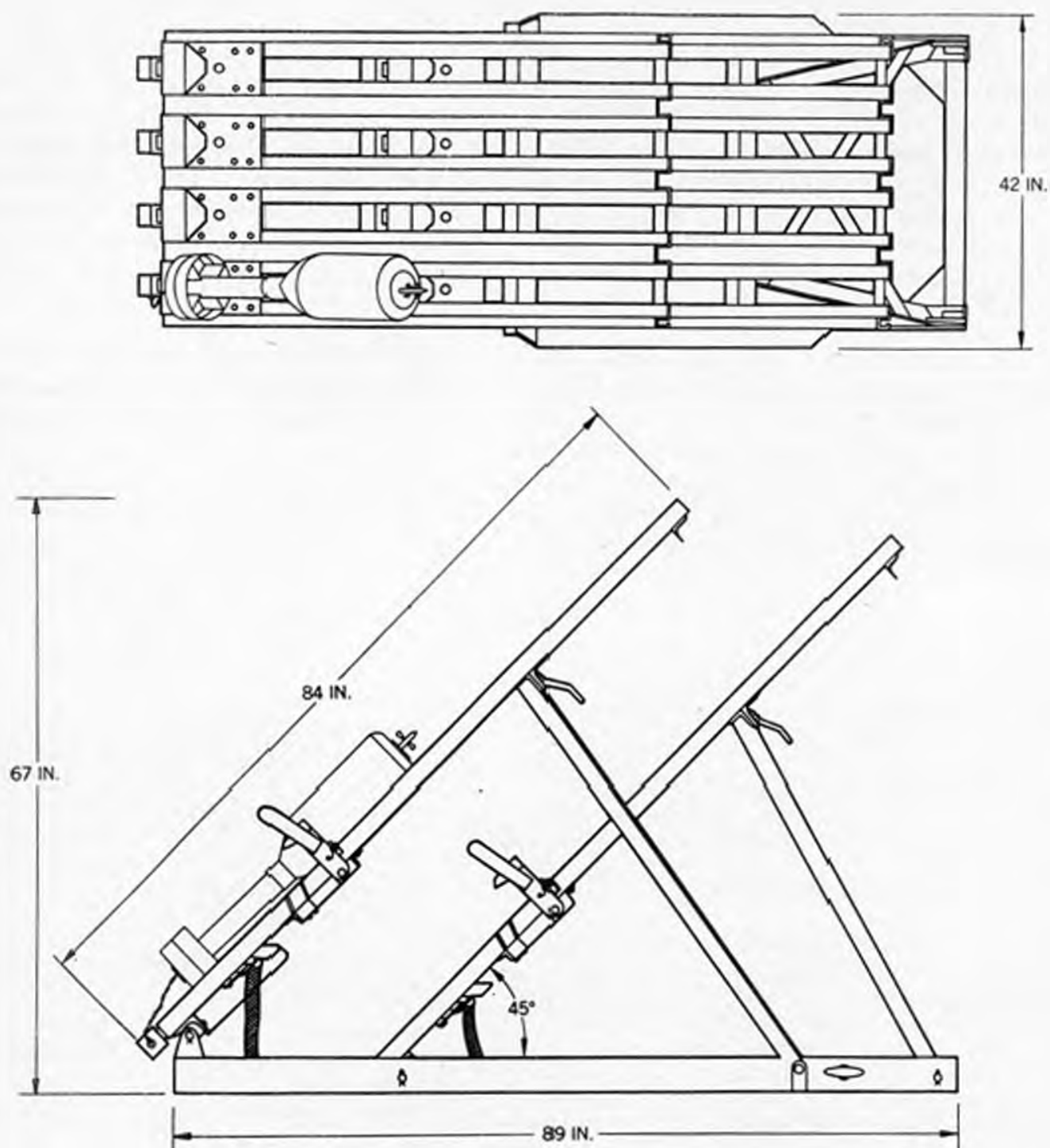
Rocket Launcher Mk 23 Mod 0 is identical to Rocket Launcher Mk 22 Mod 0 except that it is equipped with both plug-in receptacles and knife-edge contacts to provide an alternate firing system. Rocket Launcher Mk 23 Mod 0 is also designed for ammunition with or without retainer buttons.

DATA

Number of guides 8
 Launcher ammunition:-
 Service
 7.2-inch Rocket Mk 1 Mod 0
 Practice
 7.2-inch Rocket Mk 2 Mod 0
 Drill
 7.2-inch Rocket Mk 3 Mod 0
 Weight:-
 Less ammunition, lb 725
 Loaded, lb 1245
 Major dimensions:-
 Height in erected position, in. 67*
 Width, in. 42*
 Length in collapsed position, in. 108*
 Length of guide, in. 84*
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Guide-laying movements:-
 Train non-trainable
 Elevation (fixed angle), deg 45
 Firing arcs:-
 Same as guide-laying movements
 Training speed non-trainable
 Elevating speed fixed angle

Firing data:-
 Type electric
 Voltage at firing pins (varies with installation)
 v DC 7.5 or 45
 Firing mechanism (only one per launcher)
 Firing Panel Mk 3 Mod 1
 Firing Panel Mk 3 Mod 3
 Launcher capacity, rounds 8
 Firing interval (salvo), sec 0.14
 Ballistic data:-
 Ammunition not manufactured
 Mount data:-
 Components
 Rocket Launcher Mk 23 Mod 0
 List of drawings not assigned
 General arrangement not assigned
 Adapters and attachments none
 Reference publications:-
 Instruction handbook none
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 7.2-inch Rockets OP 1002 (First Revision)

*Estimated



Rocket Launcher Mk 23 Mod 0

ROCKET LAUNCHER MARK 24 (EXPERIMENTAL)

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 24 (Experimental) is a design for mounting in the cargo well on an LCM (3). As the primary armament of the landing craft, it is used to fire a ship-to-shore rocket barrage in order to clear beaches of barbed wire, mines, and light obstacles.

The rocket launcher is constructed of structural steel shapes, and consists of 120 rocket guides arranged in eight fore-and-aft rows of 15 guides per row. The guides are mounted at individually fixed angles of elevation ranging from 25 degrees to 45 degrees. Two rows of guides

are on the starboard side of the well, and two are on the port side. The remaining four rows are in the center. Catwalks between the two outboard and the two inboard rows of rocket guides on each side of the vessel provide access for loading and servicing the guides.

Electrical contact for firing is made by a contact spring and a knife-edge contact. An electrical wireway is provided under each row of rocket guides, and flexible conduit connections are fitted between the contact boxes on the guide and this wireway.

DATA

Number of guides 120

Launcher ammunition:-

Service

7.2-inch Rocket Mk 1 Mod 1

7.2-inch Rocket Mk 1 Mod 2

Practice

7.2-inch Rocket Mk 2 Mod 0

Drill

7.2-inch Rocket Mk 3 Mod 0

Weight:-

Less ammunition, lb 12,245

Loaded, lb 19,465

Major dimensions:-

Height, in. 50*

Width, in. 121*

Length, in. 298*

Length of guide, in. 72*

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation fixed elevation

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

Type electric

Voltage at firing pins (varies with installation)

v AC or DC 6 to 24

Firing mechanism (only one per launcher)

Firing Panel Mk 9 Mod 1

Firing Panel Mk 9 Mod 2

Launcher capacity, rounds 120

Firing interval (groups of 12 and 16), sec 0.5

Ballistic data:-

7.2-inch Rocket Mk 1 Mod 1

Weight, lb 60

Range at 45 degrees elevation, yd 293

Velocity (end of burning), fps 175

Range table OP 1437

Mount data:-

Components

Rocket Launcher Mk 24 (Exp)

List of drawings not assigned

General arrangement not assigned

Adapters and attachments none

Publication references:-

Instruction handbook OP 1173

Procurement specifications none

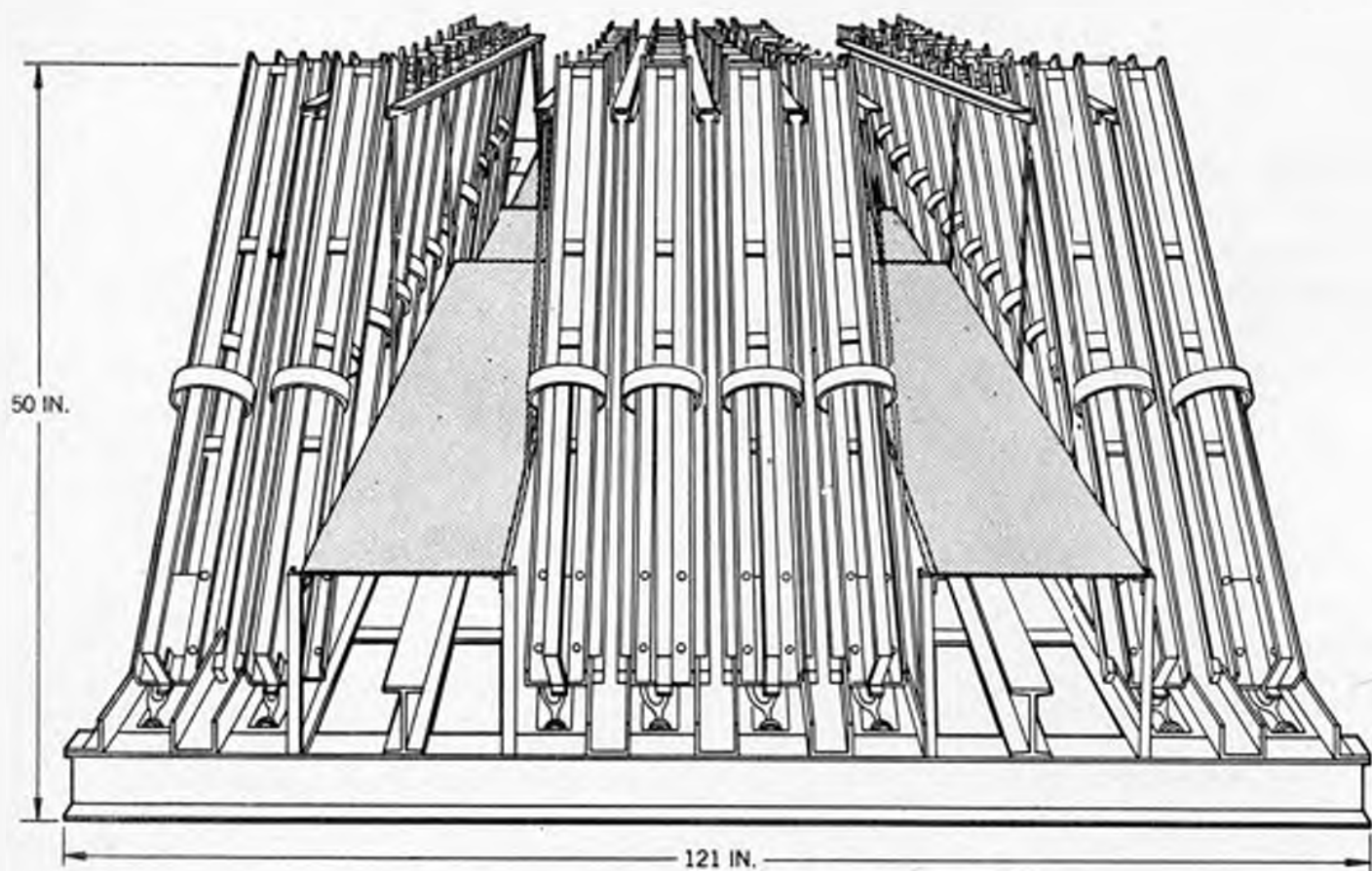
Installation instructions none

Spare parts list none

Catalog of Navy Material none

7.2-inch Rockets OP 1002 (First Revision)

*Estimated



Rocket Launcher Mk 24 (Experimental)

ROCKET LAUNCHER MARK 24 MOD 1

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 24 Mod 1 is a design for mounting in the cargo well of an LCM (3). As the primary armament of the landing craft, it is used to fire a ship-to-shore rocket barrage in order to clear beaches of barbed wire, mines, and light obstacles.

The rocket launcher is constructed of structural steel shapes, and consists of 120 rocket guides arranged in eight fore-and-aft rows of 15 guides per row. The guides are mounted at individually fixed angles of elevation ranging from 25 degrees to 45 degrees. Two rows of guides are on the starboard side of the well, and two are on the port side. The remaining four rows are in the center. Catwalks between the two outboard and the two inboard rows of rocket guides on each side of the vessel provide access for loading and servicing the guides.

DATA

Number of guides 120

Launcher ammunition:-

Service

7.2-inch Rocket Mk 1 Mod 1

7.2-inch Rocket Mk 1 Mod 2

Practice

7.2-inch Rocket Mk 2 Mod 0

Drill

7.2-inch Rocket Mk 3 Mod 0

Weight:-

Less ammunition, lb 12,245

Loaded, lb 19,465

Major dimensions:-

Height, in. 50*

Width, in. 121*

Length, in. 298*

Length of guide, in. 72*

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation fixed elevation

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed fixed elevation

*Estimated

Structurally, the launcher is identical to Rocket Launcher Mk 24 (Experimental) except that it is bolted together so that the components form an integral unit. Hoist clamp beams and sling attachments are used to facilitate installation and removal of the launcher, to make use of the carrier ship's hoist equipment.

Electrical contact for firing is made by a contact spring and a knife-edge contact. An electrical wireway is provided under each row of rocket guides, and flexible conduit connections are fitted between the contact boxes on the guide and this wireway. The electrical system of this launcher is identical to that of Rocket Launcher Mk 24 (Experimental) except that plastic wiring insulation within the wireway is replaced with asbestos wiring insulation.

Firing data:-

Type electric

Voltage at firing pins (varies with installation)

v AC or DC 6 to 24

Firing mechanism (only one per launcher)

Firing Panel Mk 9 Mod 1

Firing Panel Mk 9 Mod 2

Launcher capacity, rounds 120

Firing interval (groups of 12 and 16), sec 0.5

Ballistic data:-

7.2-inch Rocket Mk 1 Mod 1

Weight, lb 60

Range at 45 degrees elevation, yd 293

Velocity (end of burning), fps 175

Range table OP 1437

Mount data:-

Components

Rocket Launcher Mk 24 Mod 1

List of drawings not assigned

General arrangement not assigned

Adapters and attachments none

Publication references:-

Instruction handbook OP 1173

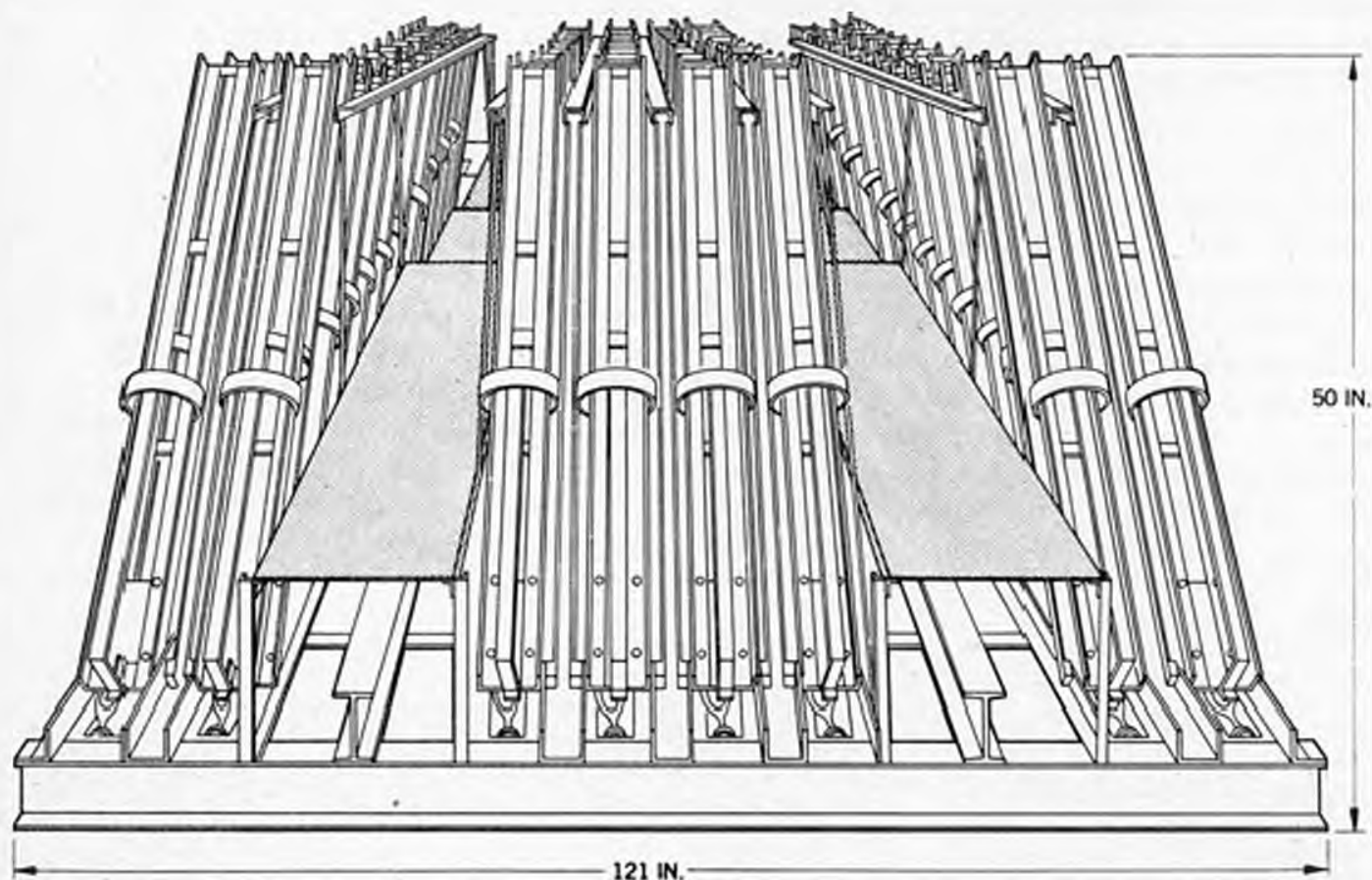
Procurement specifications none

Installation instructions none

Spare parts List none

Catalog of Navy Material none

7.2-inch Rockets OP 1002 (First Revision)



Rocket Launcher Mk 24 Mod 1

ROCKET LAUNCHER MARK 24 MOD 2

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 24 Mod 2 is a design for mounting in the cargo well of an LCM (3). As the primary armament of the landing craft, it is used to fire a ship-to-shore rocket barrage to clear beaches of barbed wire, mines, and light obstacles.

The rocket launcher is constructed of structural steel shapes, and consists of 120 rocket guides arranged in eight fore-and-aft rows of 15 guides per row. The guides are mounted at individually fixed angles of elevation ranging from 25 degrees to 45 degrees. Two rows of guides are on the starboard side of the well, and two are on the port side. The remaining four rows are in the center. Catwalks between the two outboard and the two inboard rows of rocket guides on each side of the vessel provide access for loading and servicing the guides. The components of the launcher are bolted together to form an inte-

gral unit, and suitable attachments have been added to facilitate installation and removal of the launcher, making use of the carrier ship's hoist equipment.

Electrical contact for firing is made by a contact spring and a knife-edge contact. An electrical wireway is provided under each row of rocket guides, and flexible conduit connections are fitted between the contact boxes on the guide and this wireway. Rocket Launcher Mk 24 Mod 2 is identical to Rocket Launcher Mk 24 Mod 1 except that the terminal block box has been replaced by one 20-wire and two 10-wire watertight connection boxes. These boxes are located at the forward ends of the launcher guides to receive the wireway terminals through flexible conduits. The 10-wire and 20-wire terminal boxes are interconnected with armored cable.

DATA

Number of guides120

Launcher ammunition:-

Service

7.2-inch Rocket Mk 1 Mod 1

7.2-inch Rocket Mk 1 Mod 2

Practice

7.2-inch Rocket Mk 2 Mod 0

Drill

7.2-inch Rocket Mk 3 Mod 0

Weight:-

Less ammunition, lb 12,245

Loaded, lb 19,465

Major dimensions:-

Height, in. 50

Width, in. 121

Length, in. 298

Length of guide, in. 72

Radius of clearance circle non-trainable

Radius of working circle non-trainable

Guide-laying movements:-

Train non-trainable

Elevation fixed elevation

Firing arcs:-

Same as guide-laying movements

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

Type electric

Voltage at firing pins (varies with installation)

v AC or DC 6 to 24

Firing mechanism (only one per launcher)

Firing Panel Mk 9 Mod 1

Firing Panel Mk 9 Mod 2

Launcher capacity, rounds 120

Firing interval (groups of 12 and 16) sec. 0.5

Ballistic data:-

7.2-inch Rocket Mk 1 Mod 1

Weight, lb 60

Range at 45 degrees elevation, yd 293

Velocity (end of burning), fps 175

Range Table OP 1437

Mount data:-

Components

Rocket Launcher Mk 24 Mod 2

List of drawings Sk 165037 (unsigned)

General arrangement 423306 (unsigned)

423307 (unsigned)

Adapters and attachments none

Publication references:-

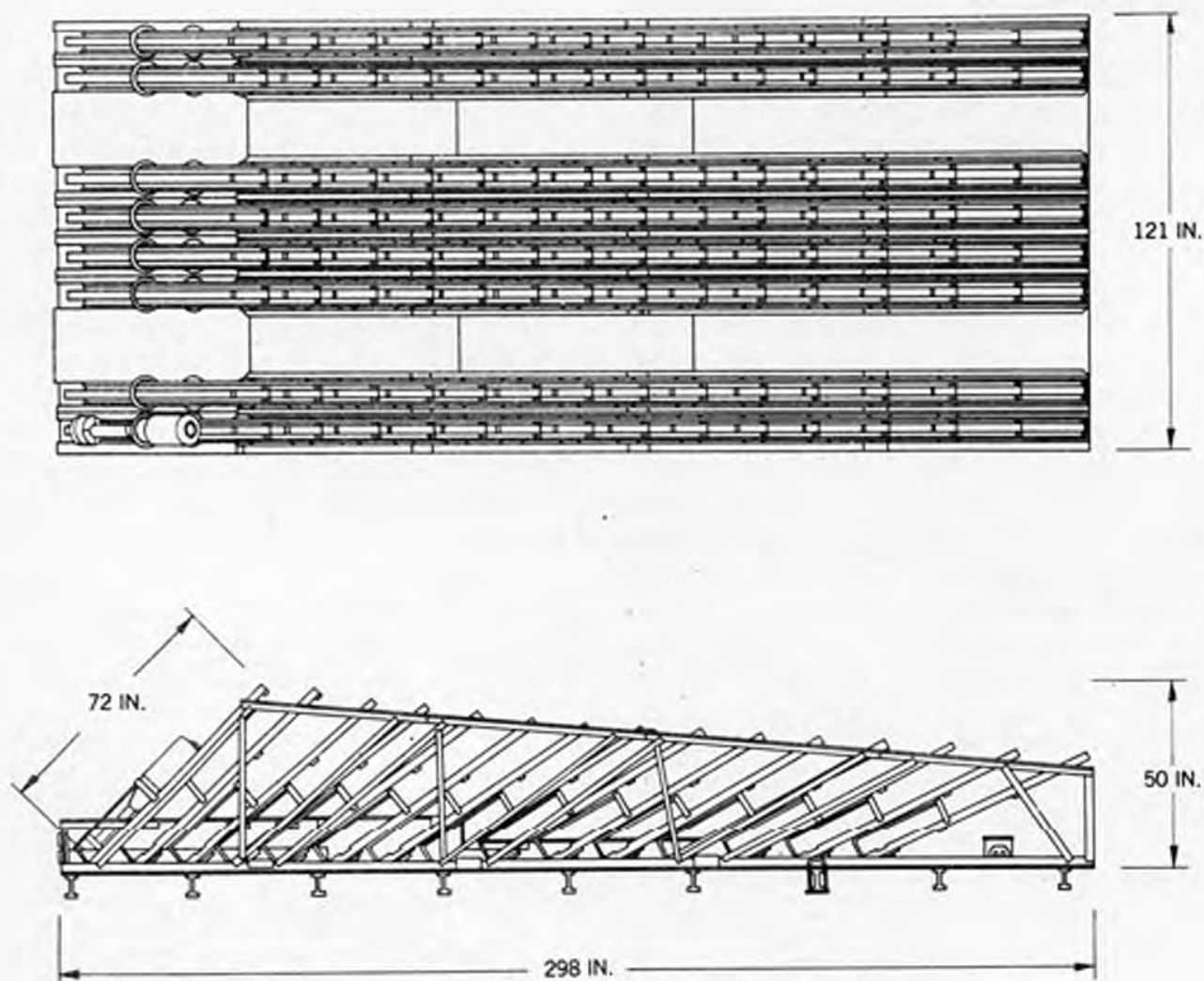
Instruction handbook OP 1173

Procurement specifications none

Installation instructions none

Spare parts list none

Catalog of Navy Material none



Rocket Launcher Mk 24 Mod 2

ROCKET LAUNCHER MARK 25 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Mk 25 Mod 0 is a barrage weapon designed for installation in the DUKW amphibious truck. It may also be installed in landing craft or trucks, and is capable of firing a heavy barrage of 21 rockets in ripple salvo.

The guide-rail units of the launcher are connected to the base frame by means of socket bosses welded to the base frame. For shipment or storage, these units can be detached from the base frame and stacked in pairs. The crutch that supports the forward guide-rail unit is also attached to the base frame by a socket boss. A

sheet-metal trough, which terminates in a deflector scoop at the after end of the launcher, is suspended between the lateral members of the base frame. This trough and scoop confine the rocket blast and deflect it upward out of the cargo space of the truck.

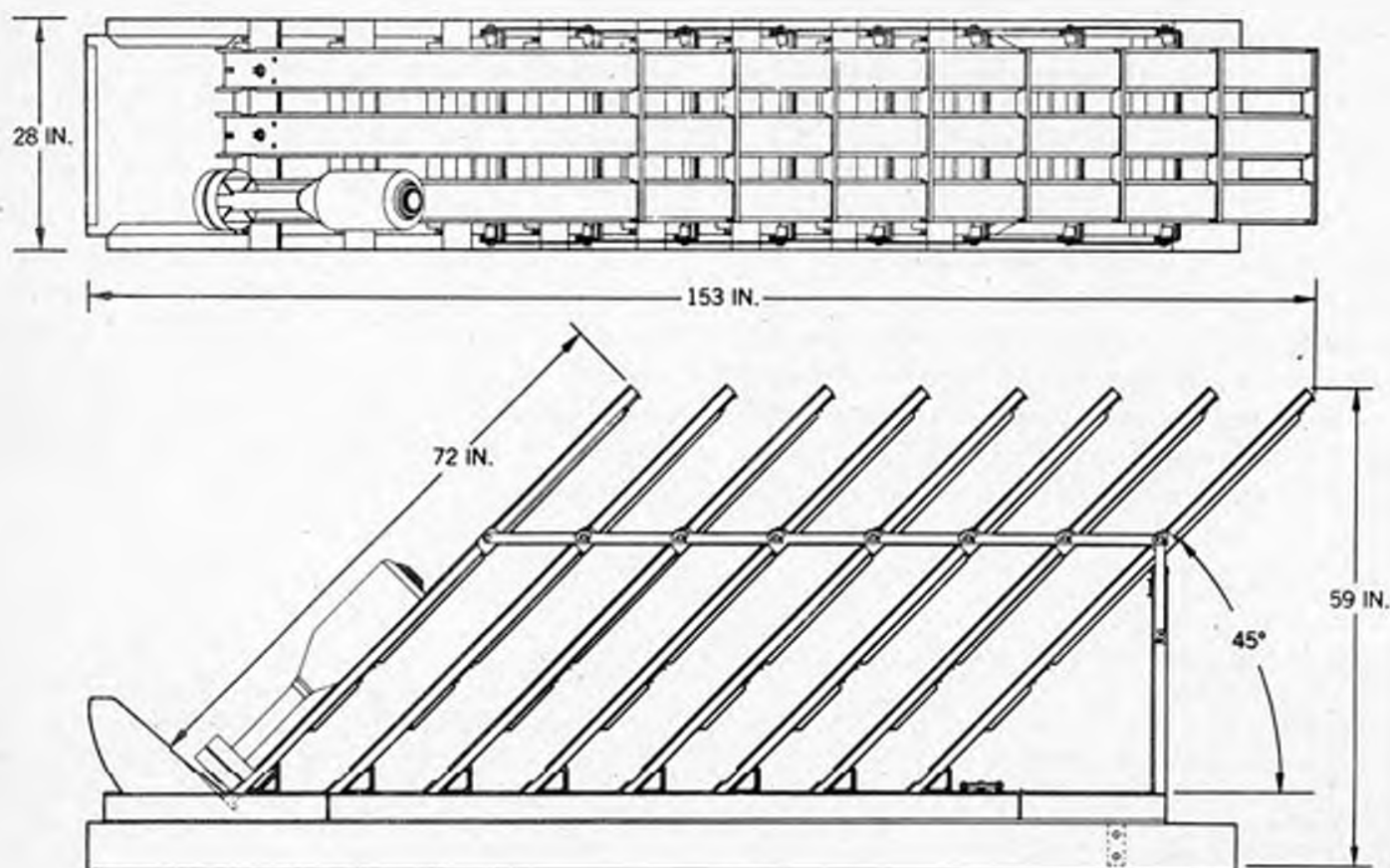
Sheet-metal boxes on the base frame support and enclose the rocket firing contacts. In the DUKW, a control box is located in the cab, and a stepping relay is mounted on the base frame of each launcher. A removable sheet-metal blast shield protects the occupants of the cab from rocket blast.

DATA

Number of guides.....	21
Launcher ammunition:-	
Service	
7.2-inch Rocket Mk 1 Mod 0	
7.2-inch Rocket Mk 1 Mod 2	
Practice	
7.2-inch Rocket Mk 2 Mod 0	
Drill	
7.2-inch Rocket Mk 3 Mod 0	
Weight:-	
Less ammunition, lb.....	750
Loaded, lb.....	2000
Major dimensions:-	
Height, in.	59
Width, in.	28
Length, in.	153
Length of guides, in.	72
Radius of clearance circle.....	non-trainable
Radius of working circle.....	non-trainable
Guide-laying movements:-	
Train.....	non-trainable
Elevation (fixed angle), deg.....	45
Firing arcs:-	
Same as guide-laying movements	
Training speed.....	non-trainable
Elevating speed.....	fixed elevation

Firing data:-	
Type.....	electric
Voltage at firing pins, v DC.....	6*
Firing mechanism.....	CIT Firing Control Box
Launcher capacity, rounds.....	21
Firing interval (automatic firing, salvo), sec.....	0.25
Ballistic data:-	
7.2-inch Rocket Mk 1 Mod 0	
Weight, lb.....	60
Range at 45 degrees elevation, yd.....	293
Velocity (end of burning), fps.....	175
Range table.....	OP 1437
Mount data:-	
Components	
Rocket Launcher.....	Mk 25 Mod 0
List of drawings.....	Sk 133190
General arrangement.....	Dr 424935, 6
Adapters and attachments.....	none
Publication references:-	
Instruction handbook.....	none
Procurement specifications.....	none
Installation instructions.....	none
Spare parts list.....	none
Catalog of Navy Material.....	none
7.2-inch Rockets.....	OP 1002 (First Revision)

*Estimated



Rocket Launcher Mk 25 Mod 0

ROCKET LAUNCHER MARK 26 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 26 Mod 0 is an electrically fired weapon for clearing beach and forward areas of surface obstacles such as wire fields or snag-line mine fields. The launcher is designed for installation on amphibious craft and it fires a specially designed, rocket-propelled grapnel that is connected to the launcher by a cable. When the grapnel falls, it is retracted to snag wire and other light obstacles as it is dragged through the field.

The launcher is a steel collapsible assembly

with a guide that consists of two rails welded to rings reinforced by a longitudinal T-member. A pan supports the guide and a reel and also deflects blast. The reel contains cable used to retract the grapnel.

An electrical contact box, mounted near the after end of the guide, contains all electrical connections for a dual firing system. The launcher is wired for firing by either knife-edge contact or by plug-in contact.

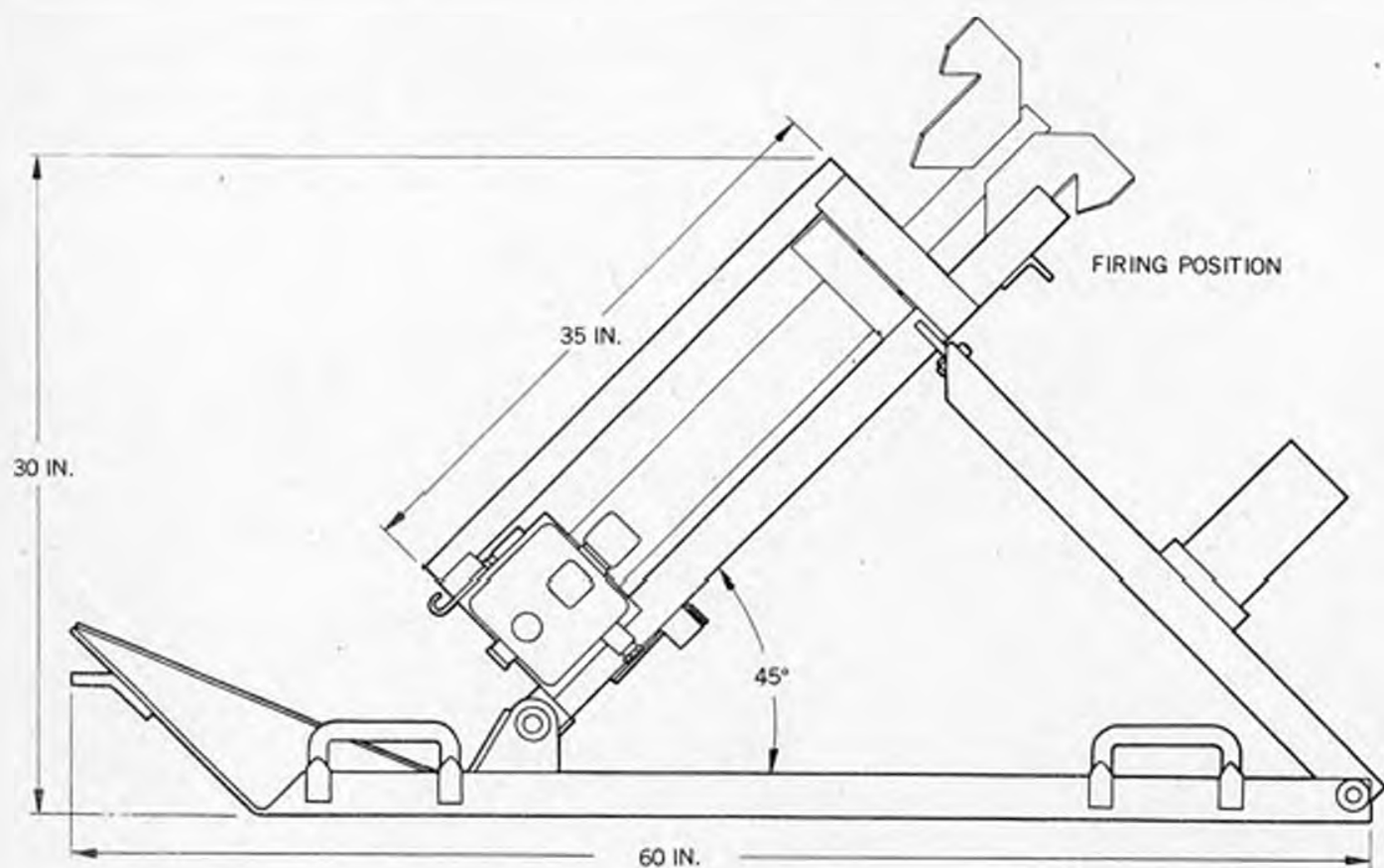
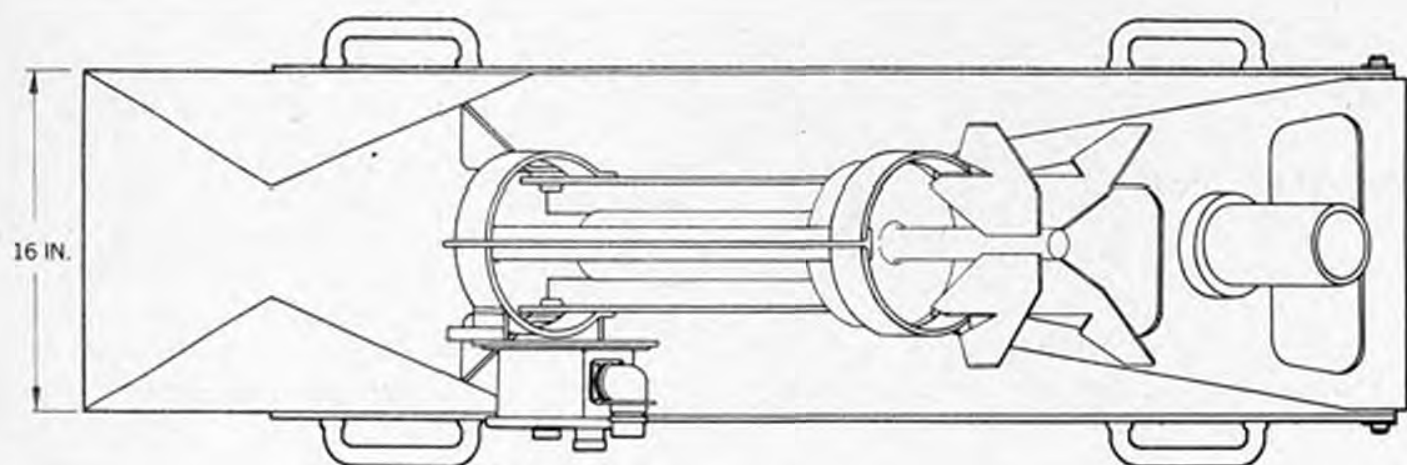
DATA

Number of guides.....	1
Launcher ammunition:-	
Grapnel Rocket Mk 1 Mod 1	
Weight:-	
Less ammunition, lb	185
Loaded, lb	260*
Major dimensions:-	
Height, in.	30
Width, in.	16
Length, in.	60
Length of guide, in.	35
Radius of clearance circle	non-trainable
Radius of working circle	non-trainable
Guide-laying movements:-	
Train	non-trainable
Elevation (fixed angle), deg	45
Firing arcs:-	
Same as guide-laying movements	
Training speed	non-trainable
Elevating speed	fixed elevation
Firing data:-	
Type	electric
Voltage at firing pins (varies with installation)	
v AC or DC	6 to 24

Firing data (cont)	
Firing mechanism (only one per launcher)	
Firing Panel Mk 12 Mod 2	
Firing Key Mk 25 Mod 4	
Launcher capacity, rounds.....	1
Firing interval	**
Ballistic data:-	
Grapnel Rocket Mk 1 Mod 1	
Weight, lb	75*
Range at 45 degrees elevation, yd	200
Velocity, fps	200*
Range table	none
Mount data:-	
Components	
Rocket Launcher	Mk 26 Mod 0
List of drawings	Sk 139698
General arrangement	Dr 479510, 11, 12
Adapters and attachments	none
Publication references:-	
Instruction handbook	OP 1558
Procurement specifications	OS 3631
Installation instructions	OP 1443 (Preliminary)
Spare parts list	OP 1443 (Preliminary)
Catalog of Navy Material	Section 3350
Grapnel Rocket Mk 1 Mod 1	OP 1443 (Preliminary)

*Estimated

**Determined by time required to retrieve grapnel



Rocket Launcher Mk 26 Mod 0

ROCKET LAUNCHER MARK 27 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Rocket Launcher Mk 27 Mod 0 is an electrically fired weapon for clearing beach and forward areas of surface obstacles such as wire fields or snag-line mine fields. The launcher is designed for installation on amphibious craft and it fires a specially designed rocket-propelled grapnel that is connected to the launcher by a cable. When the grapnel falls, it is retracted to snag wire and other light obstacles as it is dragged through the field. Stake Anchor Rockets and Standard 7.2-inch Chemical Warfare Rockets may also be fired from the launcher.

The launcher is a steel assembly similar to Rocket Launcher Mk 26 Mod 0 except that it is not collapsible. It consists of a base ring, a

trainable platform with blast deflector, an adjustable crutch with reel support for a towing cable, a collapsible rocket launcher guide, and an electrical contact box assembly. A pin locks the launcher in train; the adjustable crutch allows the launcher to be elevated in 5-degree increments and locks the launcher in elevation. When a stake anchor or grapnel rocket is fired, the launcher must be at 45 degrees elevation in order for the towing cable to pay out from the reel.

An electrical contact box, mounted near the after end of the guide, contains all electrical connections for a dual firing system. The launcher is wired for firing either by knife-edge contact with the shroud or by plug-in contact.

DATA

Number of guides 1
Launcher ammunition:-

Service

Grapple Rocket Mk 1 Mod 0

Stake Anchor

Standard 7.2-inch Chemical Warfare Rocket

Weight:-

Less ammunition, lb 360

Loaded, lb 435*

Major dimensions:-

Height at maximum elevation, in. 30**

Width, in. 16

Length, in. 61

Length of guide, extended, in. 60

Radius of clearance circle, in. 40*

Radius of working circle, in. 40*

Guide-laying movements:-

Train, deg 0 to 360*

Elevation, deg 30 to 45

Firing arcs:-

Same as guide-laying movements

Training speed manually trained

Elevating speed...5-deg increments, manually elevated

Firing data:-

Type electric

Voltage at firing pins (varies with installation)

v AC or DC 6 to 24

Firing data (cont)

Firing mechanism (only one per launcher)

Firing Panel Mk 12 Mod 2

Firing Key Mk 25 Mod 4

Launcher capacity, rounds 1

Firing interval **

Ballistic data:-

Grapple Rocket Mk 1 Mod 0

Weight, lb 75*

Range at 45 degrees elevation, yd 200*

Velocity, fps 200*

Range table none

Mount data:-

Components

Rocket Launcher Mk 27 Mod 0

List of drawings not assigned

General arrangement not assigned

Adapters and attachments none

Publication references:-

Instruction handbook none

Procurement specifications none

Installation instructions none

Spare parts list none

Catalog of Navy Material none

Grapple Rocket Mk 1 Mod 0 OP 1443 (Prelim)

*Estimated

**Determined by time required to retrieve grapnel

ROCKET LAUNCHER MARK 70 MOD 1

OBSOLETE

DESCRIPTION

Rocket Launcher Mk 70 Mod 1 is a trailer-mounted weapon for blasting cave defenses with large caliber aircraft rockets.

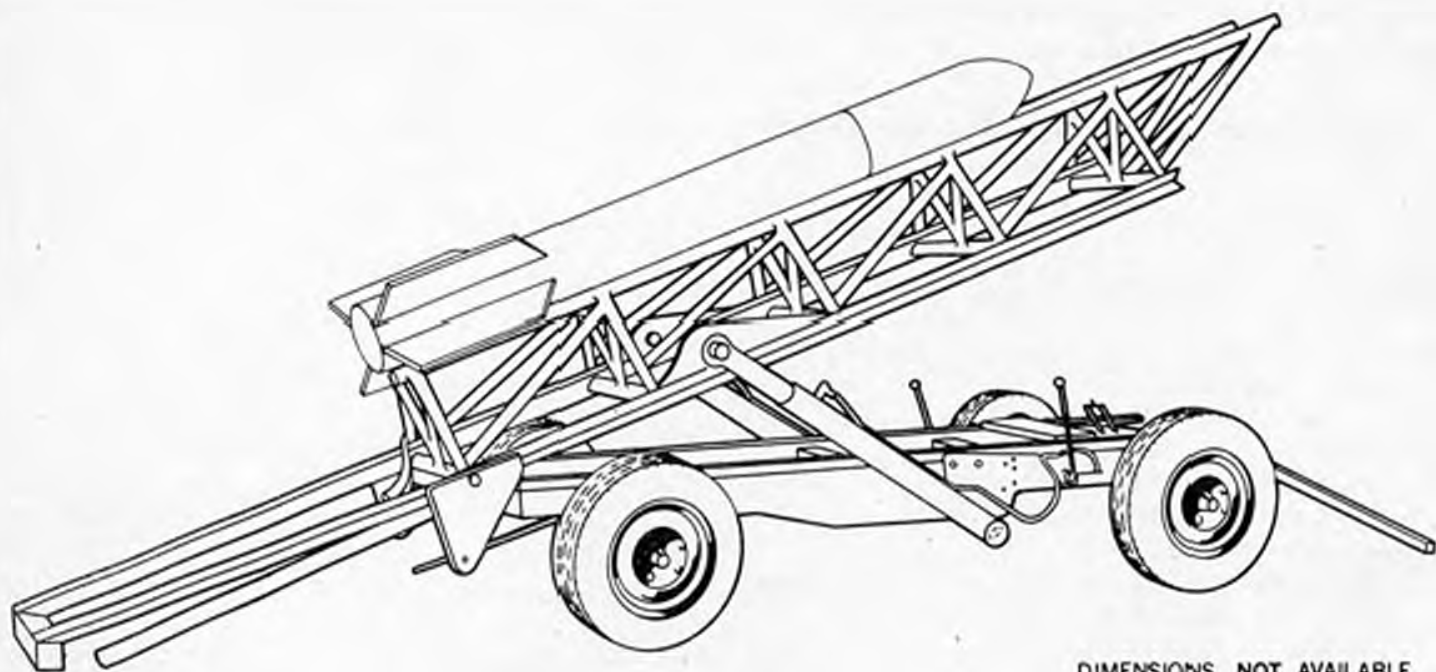
The launcher has a single guide consisting of

two guide rails. This guide is attached to a frame mounted on a four-wheel trailer. The guide frame is hinged at the after end and is supported at the midsection by two elevating pistons attached to the trailer frame.

DATA

Number of guides	1	Firing data:-	
Launcher ammunition:-		Type	*
11.75-inch Rocket		Voltage at firing pins	*
Weight:-		Firing mechanism	*
Less ammunition, lb	*	Launcher capacity, rounds	1
Loaded, lb	*	Firing interval, sec	*
Major dimensions:-		Ballistic data:-	
Height, in.	*	Ammunition not designated	
Width, in.	*	Mount data:-	
Length, in.	*	Components	
Length of guide, in.	*	Rocket Launcher	Mk 70 Mod 1
Radius of clearance circle, in.	*	List of drawings	none
Radius of working circle, in.	*	General arrangement	none
Guide-laying movements:-		Adapters and attachments	none
Train, deg	*	Publication references:-	
Elevation, deg	*	Instruction handbook	none
Firing arcs:-		Procurement specifications	none
Train, deg	*	Installation instructions	none
Elevation, deg	*	Spare parts list	none
Training speed	*	Catalog of Navy Material	none
Elevating speed	*		

*Data not available



DIMENSIONS NOT AVAILABLE

Rocket Launcher Mk 70 Mod 1

ROCKET LAUNCHER MARK 108 MOD 1

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 108 Mod 1 is an automatically loaded and fired director-controlled weapon for launching large caliber antisubmarine rockets from destroyer-type ships.

The launcher consists of an above-deck mount, a below-deck magazine and magazine hoist, a lower rocket hoist at the ship magazine level, and control station equipment.

The mount includes a rotary stand supporting a carriage and guide within an enclosed shield. The guide swings on carriage trunnions to the vertical position to receive a rocket from the hoist, and then returns to the firing position.

The magazine is a drum-shaped assembly holding 22 rockets vertically at its periphery. This assembly rotates to align each rocket with a rocket-passing hatch in the stand. The magazine hoist raises rockets through this hatch into the guide.

The lower rocket hoist receives each rocket from a manually operated trolley in the ship magazine, rotates the rocket to vertical, and lifts it into the launcher magazine.

Control station equipment located in the magazine room permits the operators to observe and control the actions of the launcher.

DATA

Number of guides 1

Launcher ammunition:-

Service

12.75-inch Rocket Mk 1 Mod 0 (ASP)

Practice

4.0-inch Rocket Mk 1 Mod 0

Weight:-

Mount (above-deck assembly), lb 47,000

Shield (less base), lb 5,200

Carriage (with shield base), lb 10,100

Guide, lb 1,970

Stand, lb 1,347

Rocket hoist, lb 4,627

Magazine, lb 14,970

Rocket supply power drive, lb 4,400

Total, less ammunition, lb 89,614

Loaded, lb 100,988

Major dimensions see accompanying figure

Guide-laying movements:-

Train, right (max), deg 0 to 150

Train, left (max), deg 0 to 150

Elevation, deg -10 to 90

Firing arcs:-

Train (max), deg 300

Elevation (max), deg -10 to 60

Training speed, deg per sec 30

Elevating speed, deg per sec 85

Firing data:-

Type electric, director-controlled

Voltage at firing pins, v AC 20

Firing mechanism Firing Panel Mk 24 Mod 0

with Control Panel Mk 64 Mod 0

Launcher capacity, rounds 22

Firing interval, sec 5

Ballistic data:-

12.75-inch Rocket Mk 1 Mod 0

Weight, lb 517

Range (maximum), yd 800

Velocity (end of burning), fps 280

Range table OP 1879

Mount data:-

Components

Rocket Launcher Guide Mk 108 Mod 1

Rocket Launcher Carriage Mk 108 Mod 1

Rocket Launcher Stand Mk 102 Mod 0

Rocket Launcher Shield Mk 101 Mod 0

Elevation Power Drive Mk 37 Mod 0

Train Power Drive Mk 5 Mod 22

Rocket Launcher Magazine Mk 102 Mod 1

Rocket Supply Power Drive Mk 102 Mod 1

Rocket Hoist Mk 106 Mod 0

List of drawings LD 272023

General arrangement Dr 692007

Dr 792454, 5, 6, 7

Adapters Rocket Launcher Mk 19 Mod 0

(Subcaliber adapter)

Publication references:-

Instruction handbook OP 1754

Procurement specifications OS 6000

Installation instructions OD 7297

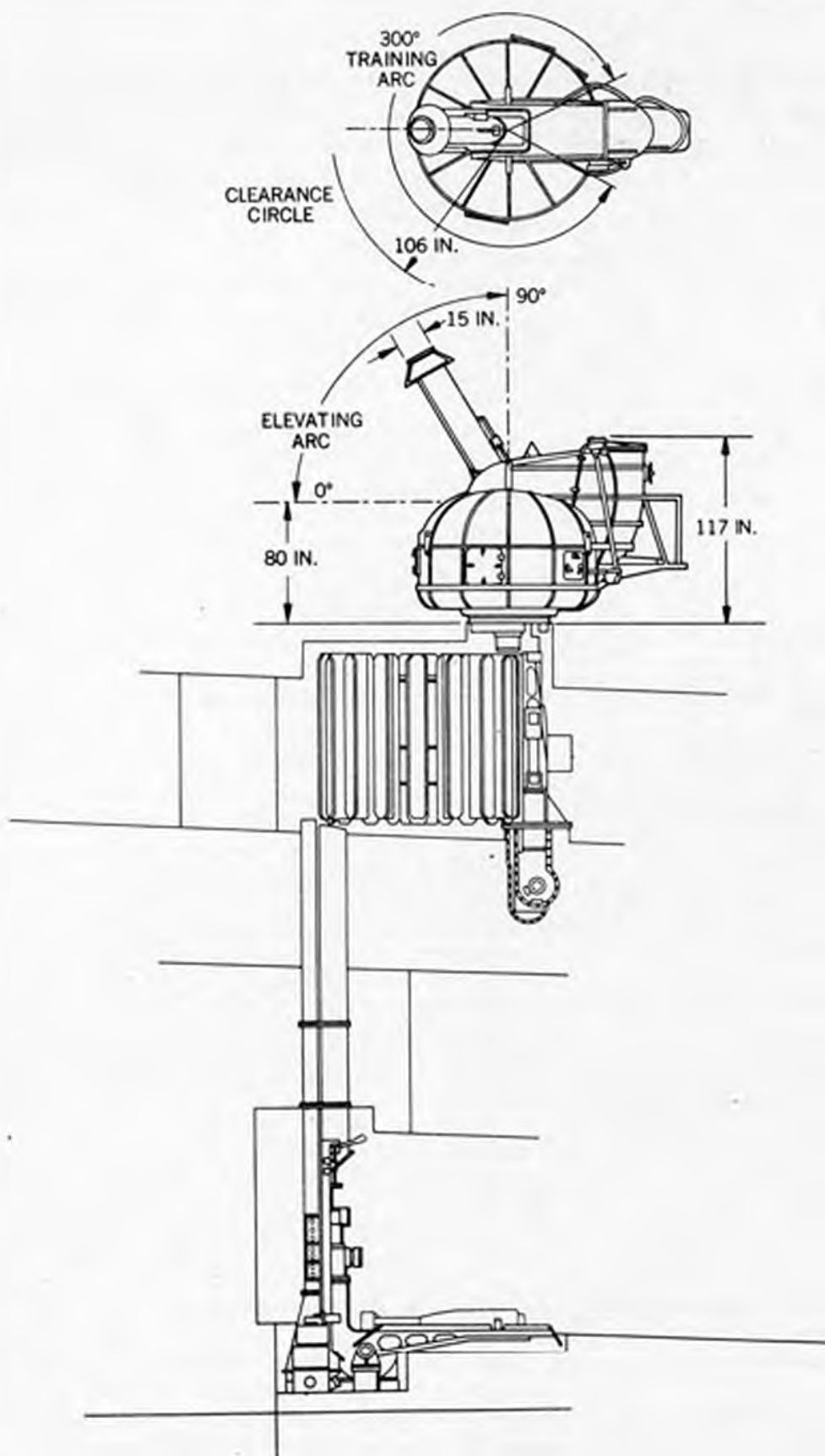
Instructions for Shipboard Tests OD 7341

Spare parts list NAVORD 22481

Catalog of Navy Material Section 5730

12.75-inch Rocket (ASP) OP 1792 (Prelim)

Rocket Launcher Mk 19 Mod 0 OP 1894 (Prelim)



Rocket Launcher Mk 108 Mod 1

ROCKET LAUNCHER MARK 108 MOD 2

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 108 Mod 2 is an automatically loaded and fired director-controlled weapon for launching large caliber antisubmarine rockets from destroyer-type ships. This launcher is a redesign of Rocket Launcher Mk 108 Mod 1; it is similar in function and appearance.

The launcher consists of an above-deck mount, a below-deck magazine and magazine hoist, a lower rocket hoist at the ship magazine level, and control station equipment.

The mount includes a rotary stand supporting a carriage and guide within an enclosed shield. The guide swings on carriage trunnions to the vertical position to receive a rocket from the hoist, and then returns to the firing position.

DATA

Number of guides 1

Launcher ammunition:-

Service

12.75-inch Rocket Mk 1 Mod 0 (ASP)

Practice

4.0-inch Rocket Mk 1 Mod 0

Weight:-

Mount (above-deck assembly), lb 47,500

Shield (less base), lb 5,848

Carriage (with shield base), lb 10,100

Guide, lb 1,970

Stand, lb 1,341

Rocket hoist, lb 4,627

Magazine, lb 14,970

Rocket supply power drive, lb 4,400

Total, less ammunition, lb 50,762

Loaded, lb 102,136

Major dimensions see accompanying figure

Guide-laying movements:-

Train, right (max), deg 0 to 150

Train, left (max), deg 0 to 150

Elevation, deg -10 to 90

Firing arcs:-

Train (max), deg 300

Elevation (max), deg -10 to 60

Training speed, deg per sec 30

Elevating speed, deg per sec 85

Firing data:-

Type electric, director-controlled

Voltage at firing pins, v AC 20

Firing mechanism Firing Panel Mk 24 Mod 0

with Control Panel Mk 64 Mod 0

Launcher capacity, rounds 22

Firing interval, sec 5

The lower rocket hoist receives each rocket from a manually operated trolley in the ship magazine, rotates the rocket to vertical, and lifts it into the launcher magazine.

Control station equipment located in the magazine room permits the operators to observe and control the actions of the launcher.

The magazine is a drum-shaped assembly holding 22 rockets vertically at its periphery. This assembly rotates to align each rocket with a rocket-passing hatch in the stand. The magazine hoist raises rockets through this hatch into the guide.

Ballistic data:-

12.75-inch Rocket Mk 1 Mod 0

Weight, lb 517

Range (maximum), yd 800

Velocity (end of burning), fps 280

Range table OP 1879

Mount data:-

Components

Rocket Launcher Guide Mk 108 Mod 1

Rocket Launcher Carriage Mk 108 Mod 2

Rocket Launcher Stand Mk 102 Mod 0

Rocket Launcher Shield Mk 101 Mod 2

Elevation Power Drive Mk 37 Mod 1

Train Power Drive Mk 5 Mod 23

Rocket Launcher Magazine Mk 102 Mod 2

Rocket Supply Power Drive Mk 102 Mod 2

Rocket Hoist Mk 106 Mod 0

List of drawings LD 256890

General arrangement Dr 515031, 2, 3

Dr 515801, 2

Dr 515153

Adapters Rocket Launcher Mk 19 Mod 0
(subcaliber adapter)

Publication references:-

Instruction handbook OP 1754

Procurement specifications none

Installation instructions OD 7567

Instructions for Shipboard Tests OD 7566

Shop Test Requirements OD 4964

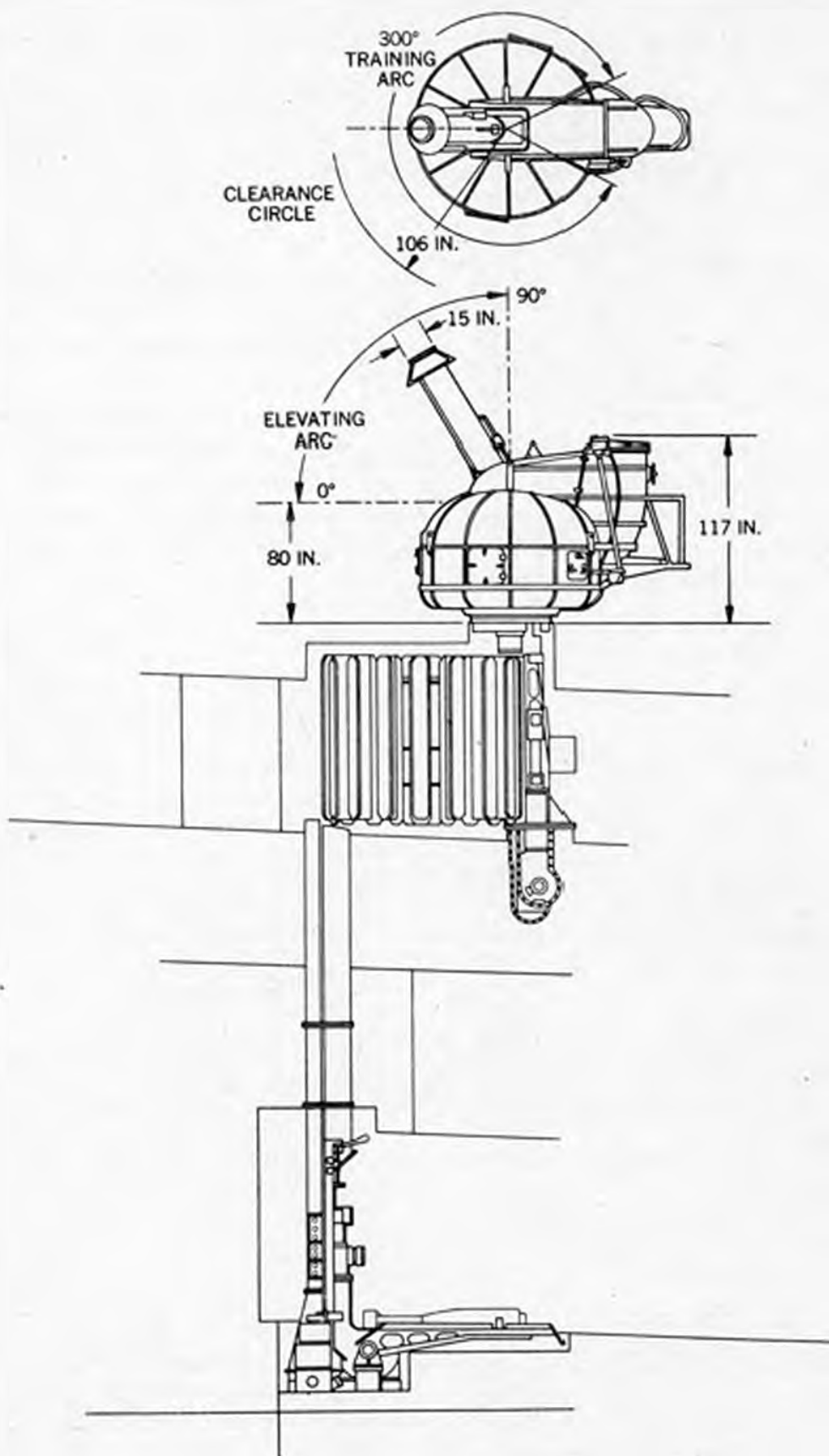
Spare parts list NAVORD 22481

Catalog of Navy Material Section 5730

12.75-inch Rocket (ASP) OP 1792 (Prelim)

Rocket Launcher Mk 19 Mod 0 ... OP 1894 (Prelim)

211



Rocket Launcher Mk 108 Mod 2

ROCKET LAUNCHER MARK 108 MOD 3

IN SERVICE

DESCRIPTION

Rocket Launcher Mk 108 Mod 3 is an automatically loaded and fired director-controlled weapon for launching large caliber antisubmarine rockets from destroyer type ships. This launcher differs from Rocket Launcher Mk 108 Mod 2 in the use of aluminum alloys below deck.

The launcher consists of an above-deck mount, a below-deck magazine and magazine hoist, a lower rocket hoist at the ship magazine level, and control station equipment.

The mount includes a rotary stand supporting a carriage and guide within an enclosed shield. The guide swings on carriage trunnions to the vertical position to receive a rocket from the

hoist, and then returns to the firing position.

The magazine is a drum-shaped assembly holding 22 rockets vertically at its periphery. This assembly rotates to align each rocket with a rocket-passing hatch in the stand. The magazine hoist raises rockets through a hatch stand into the guide.

The lower rocket hoist receives each rocket from a manually operated trolley in the ship magazine, rotates the rocket to vertical, and lifts it into the launcher magazine.

Control station equipment located in the magazine room permits the operators to observe and control the actions of the launcher.

DATA

Number of guides 1

Launcher ammunition:-

Service

12.75-inch Rocket Mk 1 Mod 0 (ASP)

Practice

4.0-inch Rocket Mk 1 Mod 0

Weight:-

Mount (above-deck assembly), lb 42,970

Shield (less base), lb 5,848

Carriage (with shield base), lb 10,100

Guide, lb 1,970

Stand, lb 1,347

Rocket hoist, lb 3,050

Magazine, lb 12,020

Rocket supply power drive, lb 4,400

Total, less ammunition, lb 81,705

Loaded, lb 93,079

Major dimensions see accompanying figure

Guide-laying movements:-

Train, right (max), deg 0 to 150

Train, left (max), deg 0 to 150

Elevation, deg -10 to 90

Firing arcs:-

Train (max), deg 300

Elevation (max), deg -10 to 60

Training speed, deg per sec 30

Elevating speed, deg per sec 85

Firing data:-

Type electric, director-controlled

Voltage at firing pins, v AC 20

Firing mechanism Firing Panel Mk 24 Mod 0

with Control Panel Mk 64 Mod 0

Launcher capacity, rounds 22

Firing interval, sec 5

Ballistic data:-

12.75-inch Rocket Mk 1 Mod 0

Weight, lb 517

Range (maximum), yd 800

Velocity (end of burning), fps 280

Range table OP 1879

Mount data:-

Components

Rocket Launcher Guide Mk 108 Mod 1

Rocket Launcher Carriage Mk 108 Mod 2

Rocket Launcher Stand Mk 102 Mod 0

Rocket Launcher Shield Mk 101 Mod 2

Elevation Power Drive Mk 37 Mod 1

Train Power Drive Mk 5 Mod 23

Rocket Launcher Magazine Mk 102 Mod 3

Rocket Supply Power Drive Mk 102 Mod 2

Rocket Hoist Mk 106 Mod 1

List of drawings LD 258470

General arrangement Dr 515031, 2, 3

Dr 515801, 2, 3

Adapters Rocket Launcher Mk 19 Mod 0
(subcaliber adapter)

Publication references:-

Instruction handbook OP 1754

Procurement specifications none

Installation instructions OD 7567

Instructions for Shipboard Tests OD 7566

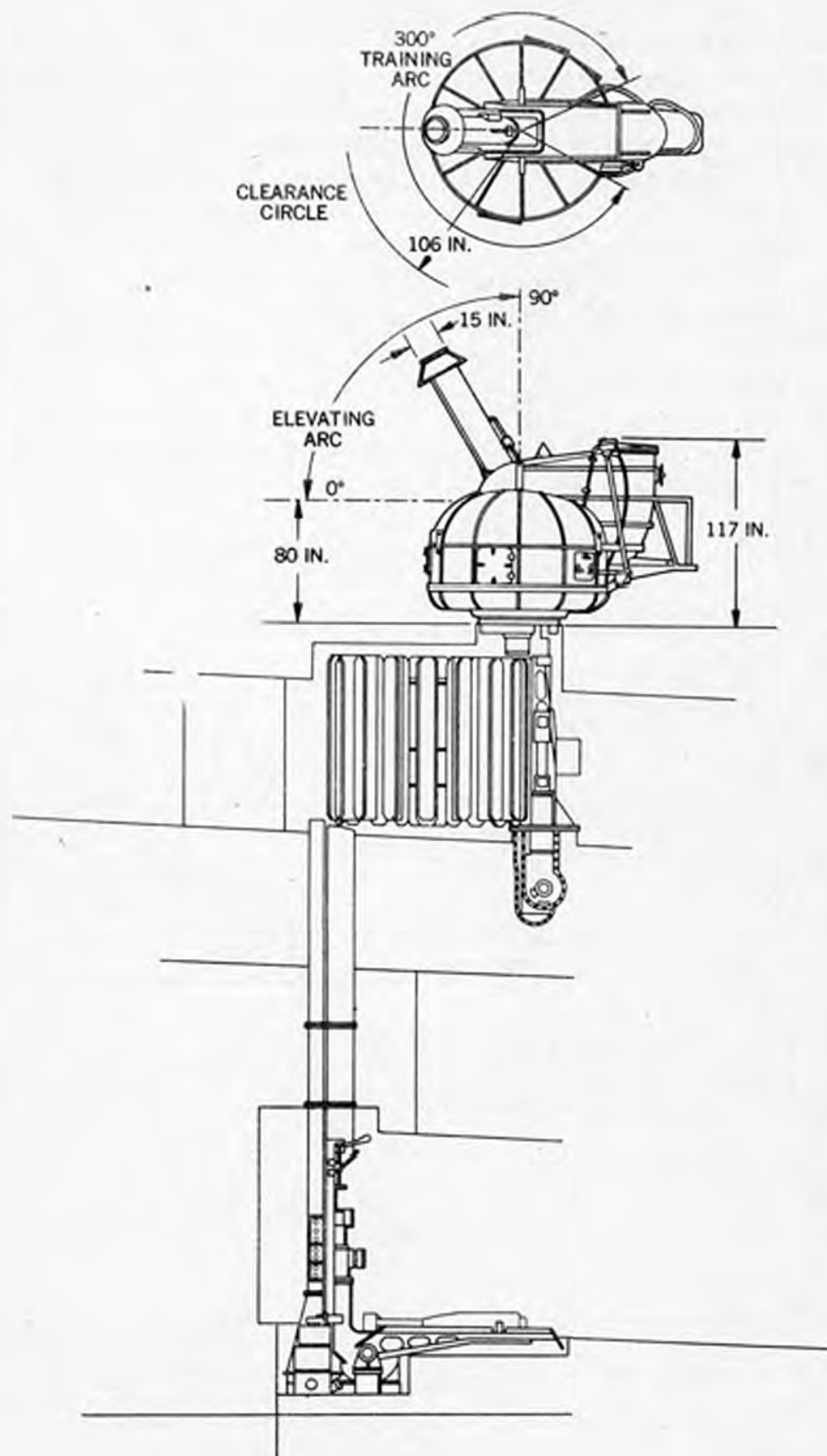
Shop Test Requirements OD 4964

Spare parts list NAVORD 22481

Catalog of Navy Material Section 5730

12.75-inch Rocket (ASP) OP 1792 (Prelim)

Rocket Launcher Mk 19 Mod 0 OP 1894 (Prelim)



Rocket Launcher Mk 108 Mod 3

PART 3
PROJECTORS

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SECTION 3-A

DEPTH CHARGE PROJECTORS

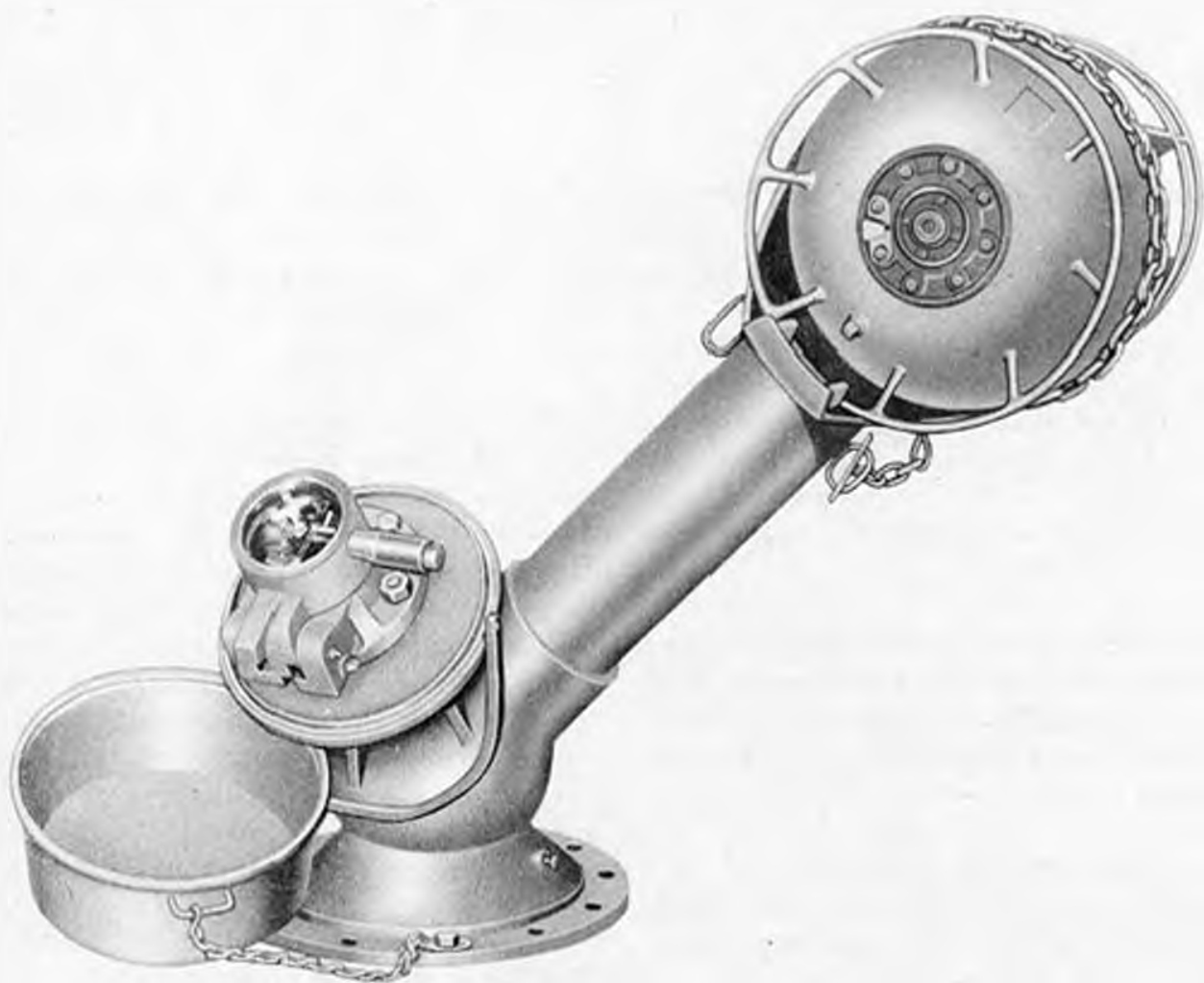
A depth charge projector is an antisubmarine weapon for launching depth charges from the deck of a ship. Depth charges in service differ from projector charges in that they are detonated by hydrostatic pressure or magnetic influence, instead of by impact. Another difference is that a depth charge is propelled by a cartridge within the depth charge projector, while the propellant of a projector charge is contained within the missile.

Both projector charges and depth charges differ from rockets in that the charges have only an initial impetus from a cartridge, while rockets have propellants that give them impetus during a period of their flight.

Service depth charge projectors are patterned after guns in that they contain a firing chamber and a barrel. An arbor is used to enable the depth charge to be fired from the depth charge projector. One end of the arbor is a cylinder that fits into the barrel of the depth charge projector; the other end of the

arbor is a curved tray that supports the depth charge. When the projector is fired, the arbor and depth charge separate in flight, and fall into the sea separately.

One of the earliest depth charge projectors is Depth Charge Projector M¹. 1. This weapon has two barrels extending 90 degrees apart from the firing chamber. When the weapon is fired, two depth charges are simultaneously projected overboard, one on each side of the ship. Depth Charge Projector Mk 2 was an attempt to provide a depth charge projector with freedom in elevation and train. The leverage problems resulting from the weight of the depth charge on the end of the barrel curtailed future experiments in this direction. Depth Charge Projector Mk 6 is a modification of Depth Charge Projector Mk 1 in that the weapon has only one barrel. Later modifications of Depth Charge Projector Mk 6 provide the weapon with facilities for firing the cartridge by electrical means as well as by percussion.



Depth Charge Projector Mk 6 Mod 2

CONTENTS

<i>Depth Charge Projectors</i>		
Mk	Mod	Page
1	0	221
2	0	223
6	0	225
6	1	227
6	2	229
7	0	231

DEPTH CHARGE PROJECTOR MARK 1 MOD 0

OBSOLETE

DESCRIPTION

Depth Charge Projector Mk 1 Mod 0 is a percussion-fired antisubmarine weapon for simultaneously projecting two depth charges abeam of a vessel. It is usually used in conjunction with stern depth charge racks. Since the downward thrust of the projector is small, the weapon is suitable for small vessels of the subchaser type.

The projector is an iron casting with two barrels extending 90 degrees apart from a powder chamber. A boss extending from this powder

chamber is drilled for insertion of a 3-inch cartridge. External threads on this boss retain a breechblock containing a lanyard-operated firing mechanism. Two arbors, one for each barrel, are used to hold the depth charges. Each arbor is an expendable missile with a closed cylinder and tray. The cylinder fits into the projector barrel; the tray is used for attachment of a depth charge. When the cartridge is fired, both depth charges, together with their arbors, are projected at once.

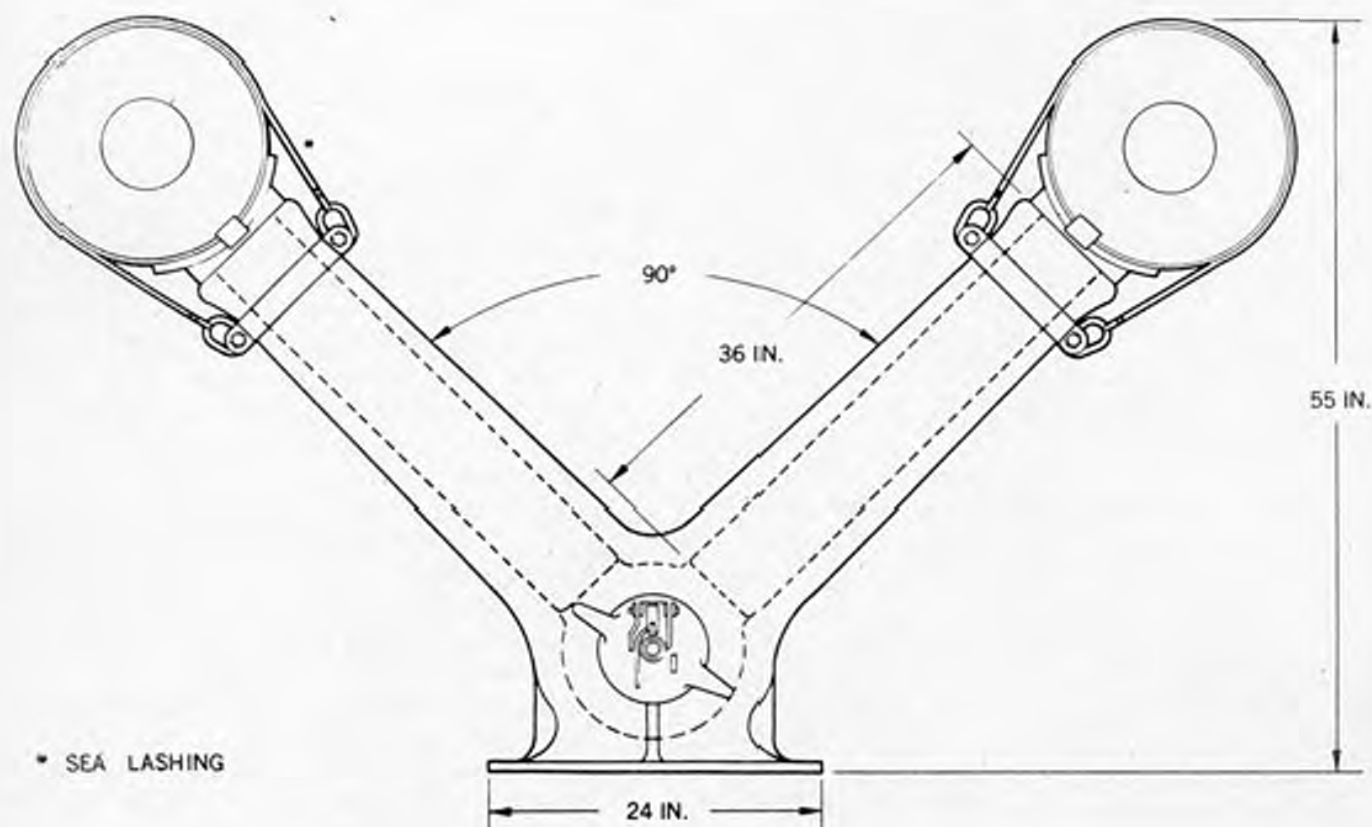
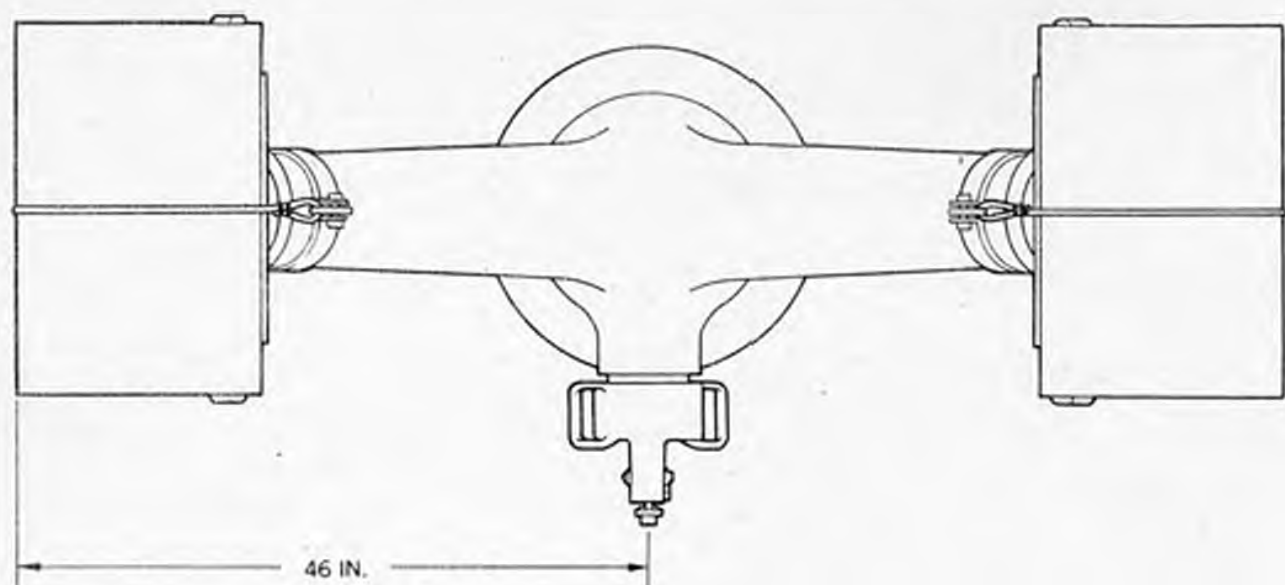
DATA

Number of barrels 2
 Ammunition:-
 Depth Charge Mk 2 with Arbor
 Weight:-
 Less ammunition, lb 1250
 Loaded, lb 1815
 Major dimensions:-
 Height, loaded, in. 55*
 Diameter of base, in. 24
 Length of barrels, in. 36
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
 Barrel-laying movements:-
 Train non-trainable
 Elevation (fixed angle), deg 45
 Training speed non-trainable
 Elevating speed fixed elevation
 Firing data:-
 Type percussion
 Power manual
 Firing interval, min 3*
 Projector capacity, rounds 2

Firing reaction:-
 Shear load, lb 0
 Vertical load, lb 200,000
 Ballistic data:-
 Depth Charge Mk 2 (with No. 3 impulse charge)
 Initial velocity, fps 50*
 Time of flight, sec 4
 Range (with 1-lb charge), yd 50
 Depth setting range, ft 50-200
 Terminal sinking speed, fps 9
 Mount data:-
 Components
 Depth Charge Projector Mk 1 Mod 0
 List of drawings Sk 39019
 General arrangement Dr 58464, 5
 Adapters and attachments Arbor **
 Publication references:-
 Instruction handbook OP 63
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none
 Ammunition OP 36

*Estimated

**Mk not designated



Depth Charge Projector Mk 1 Mod 0

DEPTH CHARGE PROJECTOR MARK 2 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Depth Charge Projector Mk 2 Mod 0 is a mortar-type weapon for projecting depth charges. The projector utilizes a recoil mechanism and can be fired electrically or by percussion. The weapon can be moved in both train and elevation.

The projector consists of a projector barrel, breech barrel and breech mechanism, slide with recoil cylinder, carriage, and stand. The projector barrel and the breech barrel are mounted 135 degrees apart so that the projector is at its maximum elevation of 45 degrees when the breech barrel is horizontal. The projector can be elevated by a handwheel-operated gear linkage that

engages an elevating arc attached to the slide. The slide is trunnion-supported in the carriage. The projector carriage, which is mounted on a base, is moved in train by means of a carriage training handle.

An arbor is used to hold the depth charge in the projecting position. Each arbor is an expendable missile with a closed cylinder and tray. The cylinder fits into the projector barrel; the tray is used for attachment of a depth charge. When a firing charge in the breech mechanism is detonated, both the depth charge and arbor are projected.

DATA

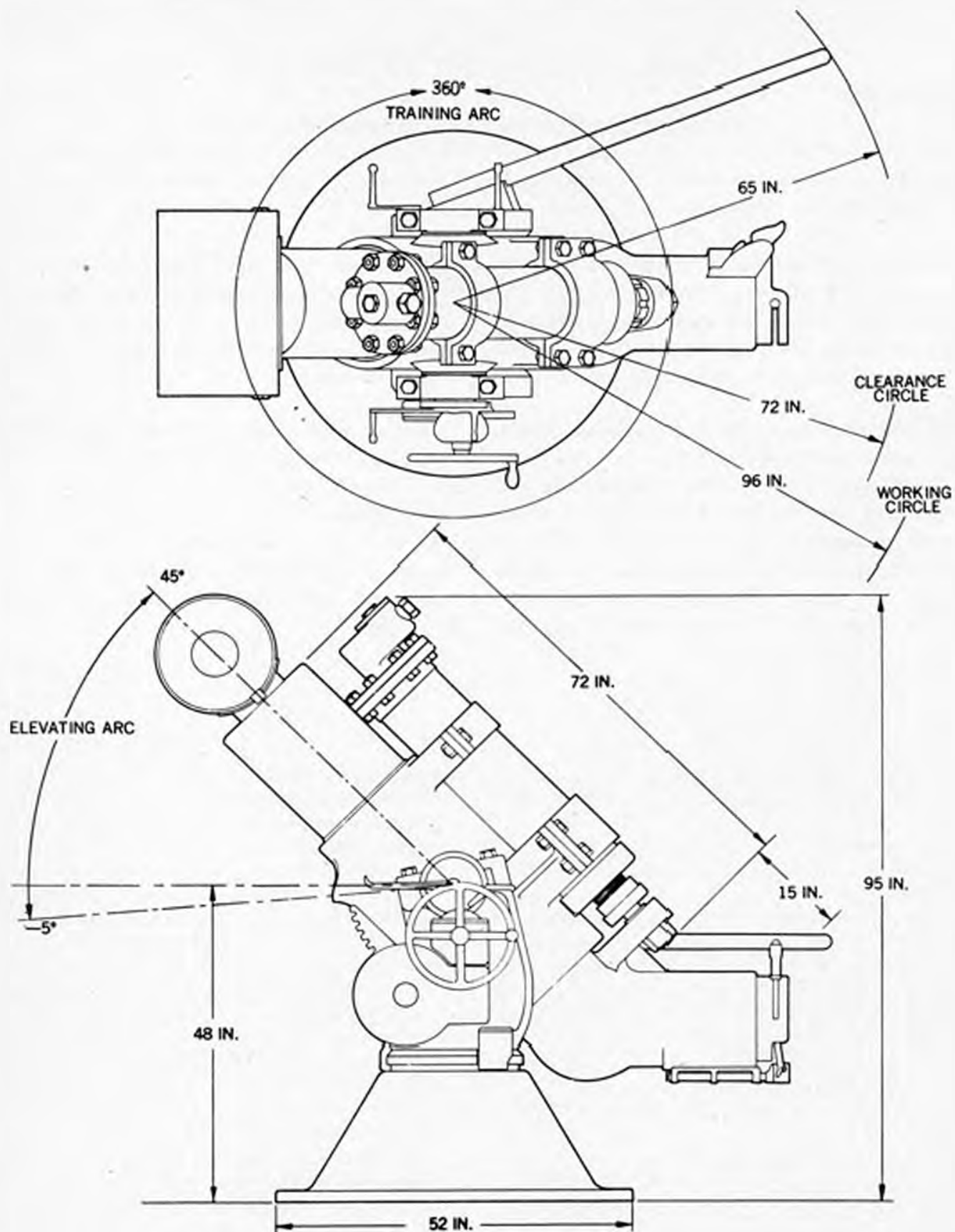
Number of barrels 1
Ammunition..... not designated
Weight:-
Less ammunition, lb 12,320*
Loaded, lb 12,885*
Major dimensions:-
Height at maximum elevation, in. 95*
Diameter of base, in. 52*
Length of barrel, in. 65*
Radius of clearance circle, in. 72*
Radius of working circle, in. 96*
Barrel-laying movements:-
Train unlimited
Elevation, deg -5 to 45
Training speed manually trained
Elevating speed manually elevated
Firing data:-
Type electric or percussion
Power **

Firing data (cont)
Firing interval, min 3*
Projector capacity, rounds 1
Firing reaction:-
Shear load, lb **
Vertical load, lb **
Ballistic data **
Mount data:-
Components
Depth Charge Projector Mk 2 Mod 0
List of drawings Sk 13649
General arrangement Dr 64256
Adapters and attachments Arbor***
Publication references:-
Instruction handbook none
Procurement specifications none
Installation instructions none
Spare parts list none
Catalog of Navy Material none

*Estimated

**Data not available

***Identity not designated



Depth Charge Projector Mk 2 Mod 0

DEPTH CHARGE PROJECTOR MARK 6 MOD 0

IN SERVICE

DESCRIPTION

Depth Charge Projector Mk 6 Mod 0 is an anti-submarine weapon for projecting depth charges from small vessels such as destroyer escorts and patrol craft. The projector can be fired electrically or by percussion, and is used to enlarge and supplement the pattern obtained by dropping depth charges from the stern of a vessel. Usually two or more projectors are used to fire off each beam of the vessel.

Depth Charge Projector Mk 6 Mod 0 consists of a base with an expansion chamber and two tubular extensions mounted 90 degrees apart. One ex-

tension is the steel barrel of the projector, and the other is a cartridge chamber. A breech mechanism is mounted on the cartridge chamber. An arbor is used to hold the depth charge in the projector. Each arbor is an expendable missile with a closed cylinder and tray. The cylinder fits into the projector barrel; the tray is used for attachment of the depth charge. When an explosive charge in the cartridge chamber is fired, the depth charge and the arbor are projected simultaneously. The arbor is mechanically released from the depth charge, and the two fall into the sea separately.

DATA

Number of barrels 1

Ammunition:-

- Depth Charge Mk 6 Mod 0
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge British Mk 7
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge British Mk 7 (Heavy)
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge Mk 8
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge Mk 9 Mods 0,1,2,3, and 4
with Arbors Mk 7 Mods 0,1,3, and 4

Weight:-

- Less ammunition, lb 310
- Loaded (Depth Charge Mk 7 and Arbor), lb 1145*

Major dimensions:-

- Height, loaded, in. 44*
- Base diameter, in. 20
- Length of barrel, in. 24
- Radius of clearance circle non-trainable
- Radius of working circle non-trainable

Barrel-laying movements:-

- Train non-trainable
- Elevation (fixed angle), deg 45

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

- Type electric or percussion
- Power
- v AC 15 to 20
- v DC 6 to 21

*Estimated

**With No. 3 impulse charge

Firing data (cont)

- Firing interval, min 3*
- Projector capacity, rounds 1

Firing reaction:-

- Shear load (at 120-yd range), lb 32,000
- Vertical load (at 120-yd range), lb 32,000

Ballistic data:-

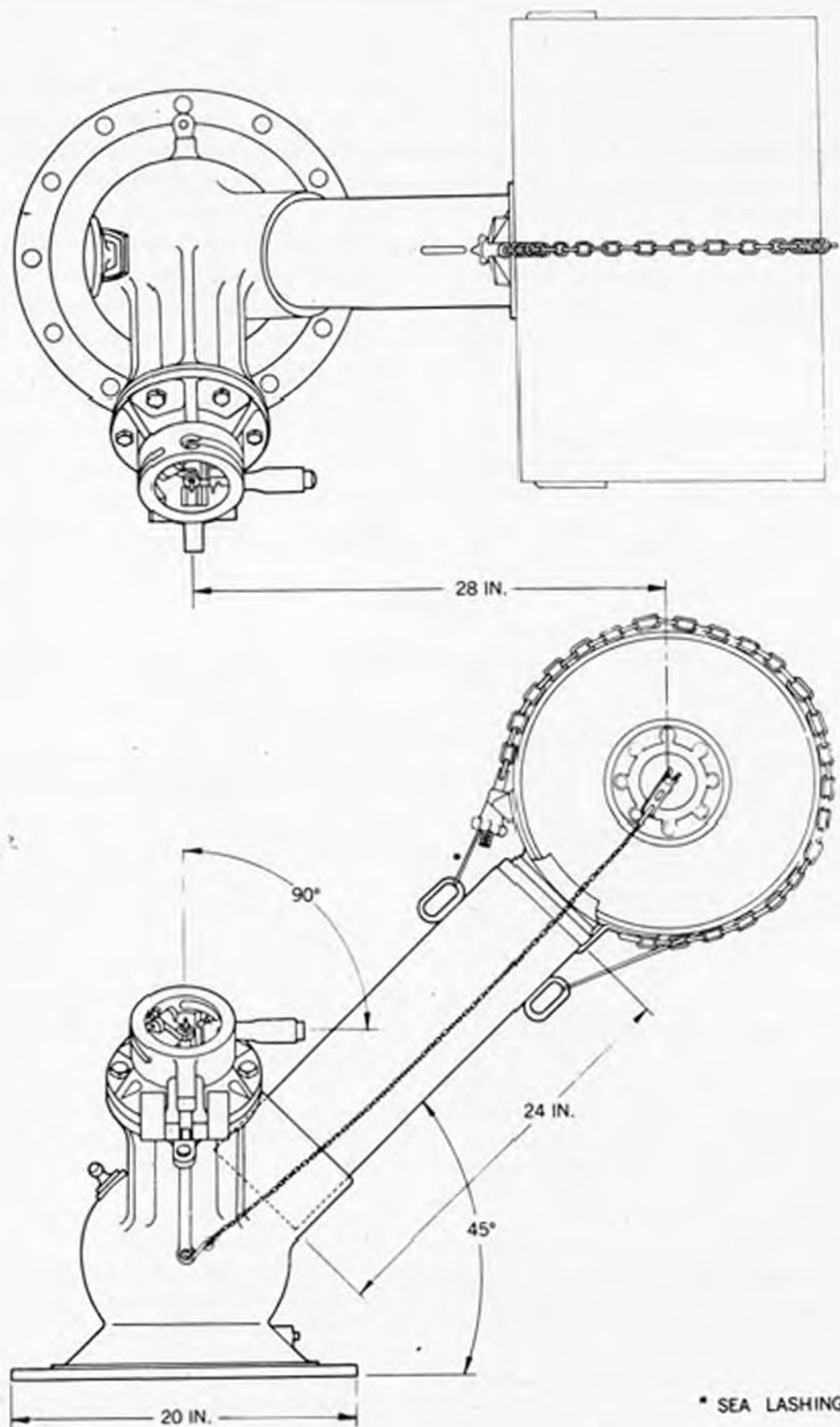
- Depth Charge Mk 9 Mod 4**
- Initial velocity, fps 125*
- Time of flight, sec 5.1
- Range, yd 150
- Depth setting range, ft 30 to 1000
- Terminal sinking speed, fps 23

Mount data:-

- Components
- Depth Charge Projector Mk 6 Mod 0
- List of drawings Sk 90577
- General arrangement Dr 281631,3
- Adapters and attachments Arbor Mk 6 Mod 0
- Arbor Mk 7 Mods 0-4

Publication references:-

- Instruction handbook OP 831 (First Revision)
- Procurement specifications none
- Installation instructions none
- Spare parts list NAVORD 20937
- Catalog of Navy Material none
- Depth Charge Mk 9 OP 866 (Second Revision)
- Depth Charges Mk 6,7 OP 747 (First Revision)
- Applicable Ordalts Ordalt 1221



Depth Charge Projector Mk 6 Mod 0

DEPTH CHARGE PROJECTOR MARK 6 MOD 1

IN SERVICE

DESCRIPTION

Depth Charge Projector Mk 6 Mod 1 is an anti-submarine weapon for projecting depth charges from small vessels such as destroyer escorts and patrol craft. The projector can be fired electrically or by percussion, and is used to enlarge and supplement the pattern obtained by dropping depth charges from the stern of a vessel. Usually two or more projectors are used to fire off each beam of the vessel.

Depth Charge Projector Mk 6 Mod 1 consists of a base with an expansion chamber and two tubular extensions mounted 90 degrees apart. One extension is the steel barrel of the projector, and the other is a cartridge chamber. A breech mechanism is mounted on the cartridge chamber. An

arbor is used to hold the depth charge in the projector. Each arbor is an expendable missile with a closed cylinder and tray. The cylinder fits into the projector barrel; the tray is used for attachment of the depth charge. When an explosive charge in the cartridge chamber is fired, the depth charge and the arbor are projected simultaneously. The arbor is mechanically released from the depth charge, and the two fall into the sea separately.

Depth Charge Projector Mk 6 Mod 1 is identical to Depth Charge Projector Mk 6 Mod 0 except that the firing mechanism has been improved to increase the striking force of the firing pin.

DATA

Number of barrels 1

Ammunition:-

- Depth Charge Mk 6 Mod 0
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge British Mk 7
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge British Mk 7 (Heavy)
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge Mk 8
with Arbors Mk 6 Mod 0, Mk 7 Mods 0,1
- Depth Charge Mk 9 Mods 0,1,2,3, and 4
with Arbors Mk 7 Mods 0,1,3, and 4

Weight:-

- Less ammunition, lb 310
- Loaded (Depth Charge Mk 7 and Arbor), lb 1145*

Major dimensions:-

- Height, loaded, in. 44*
- Base diameter, in. 20
- Length of barrel, in. 24
- Radius of clearance circle non-trainable
- Radius of working circle non-trainable

Barrel-laying movements:-

- Train non-trainable
- Elevation (fixed angle), deg 45

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

- Type electric or percussion
- Power
 - v AC 15 to 20
 - v DC 6 to 21

*Estimated

**With No. 3 impulse charge

Firing data (cont)

- Firing interval, min 3*
- Projector capacity, rounds 1

Firing reaction:-

- Shear load (at 120-yd range), lb 32,000
- Vertical load (at 120-yd range), lb 32,000

Ballistic data:-

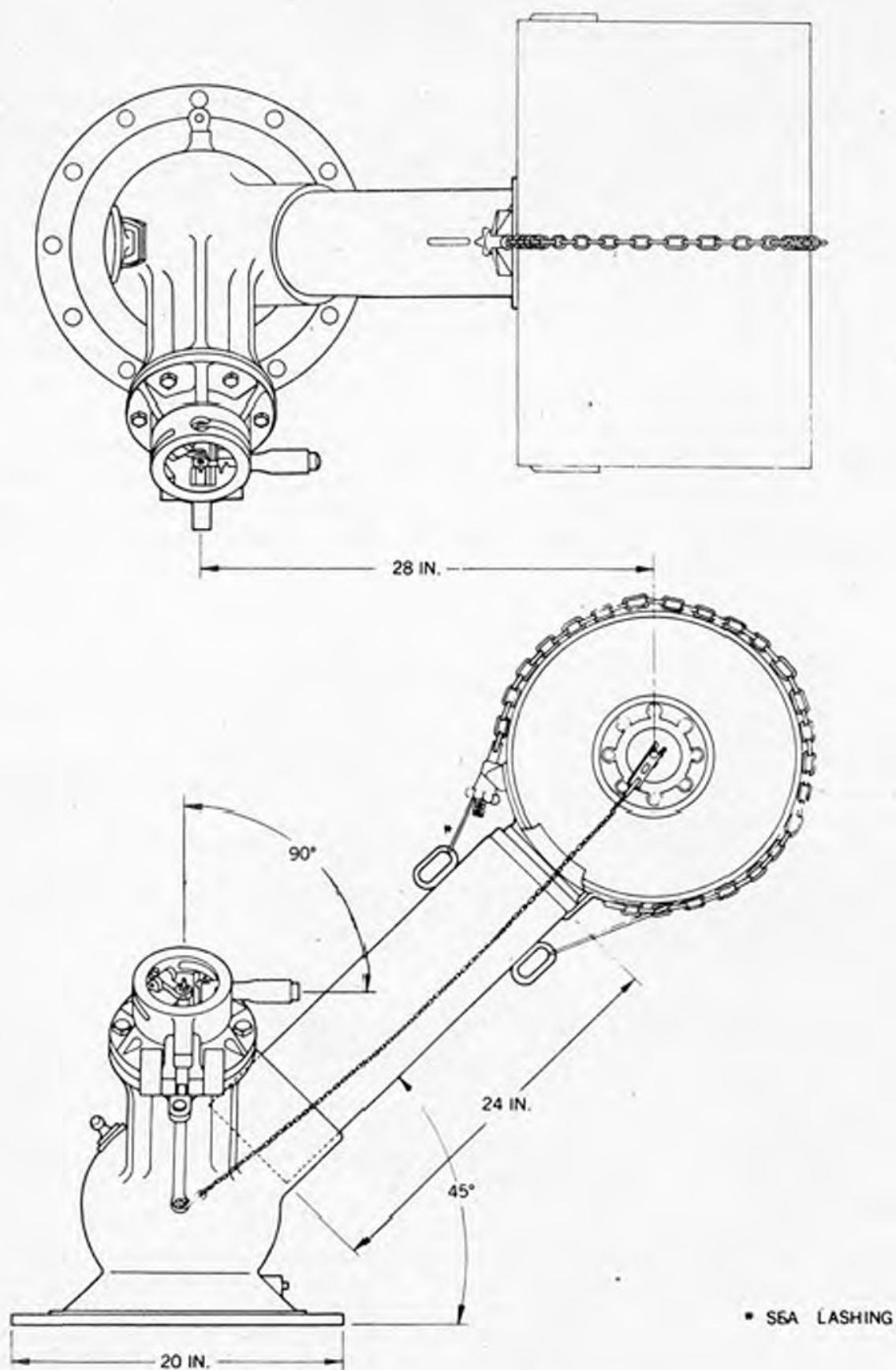
- Depth Charge Mk 9 Mod 4**
 - Initial velocity, fps 125*
 - Time of flight, sec 5.1
 - Range, yd 150
 - Depth setting range, ft 30 to 1000
 - Terminal sinking speed, fps 23

Mount data:-

- Components
 - Depth Charge Projector Mk 6 Mod 1
 - List of drawings Sk 90577
 - General arrangement Dr 281631,3
- Adapters and attachments Arbor Mk 6 Mod 0
Arbor Mk 7 Mods 0-4

Publication references:-

- Instruction handbook OP 831 (First Revision)
- Procurement specifications none
- Installation instructions none
- Spare parts list NAVORD 20937
- Catalog of Navy Material none
- Depth Charge Mk 9 OP 866 (Second Revision)
- Depth Charges Mk 6,7 OP 747 (First Revision)
- Applicable Ordnals Ordalt 1963



Depth Charge Projector Mk 6 Mod 1

DEPTH CHARGE PROJECTOR MARK 6 MOD 2

IN SERVICE

DESCRIPTION

Depth Charge Projector Mk 6 Mod 2 is an anti-submarine weapon for projecting depth charges from small vessels such as destroyer escorts and patrol craft. The projector can be fired electrically or by percussion, and is used to enlarge and supplement the pattern obtained by dropping depth charges from the stern of a vessel. Usually two or more projectors are used to fire off each beam of the vessel.

Depth Charge Projector Mk 6 Mod 2 consists of a base with an expansion chamber and two tubular extensions mounted 90 degrees apart. One extension is the steel barrel of the projector, and the other is a cartridge chamber. A breech mechanism is mounted on the cartridge chamber. An arbor is used to hold the depth charge in the pro-

jector. Each arbor is an expendable missile with a closed cylinder and tray. The cylinder fits into the projector barrel; the tray is used for attachment of the depth charge. When an explosive charge in the cartridge chamber is fired, the depth charge and the arbor are projected simultaneously. The arbor is mechanically released from the depth charge, and the two fall into the sea separately.

Depth Charge Projector Mk 6 Mod 2 differs from Depth Charge Projector Mk 6 Mod 1 in that the breech lug stop has been omitted to permit installation of Breech Cover Mk 2. In addition, the insulation around the firing pin has been increased to eliminate short circuits when the weapon is being fired electrically.

DATA

Number of barrels.....1

Ammunition:-

Depth Charges Mk 6 Mod 0; British Mk 7; British Mk 7 (Heavy); and Mk 8, all with Arbors Mk 6 Mod 0 or Mk 7 Mods 0 and 1
Depth Charge Mk 8

with Arbors Mk 6 Mod 0; Mk 7 Mods 0,1
Depth Charge Mk 9 Mods 0,1,2,3, and
with Arbors Mk 7, Mods 0,1,3, and 4

Depth Charge Mk 14 Mod 0
with Arbors Mk 7 Mods 3,4

Weight:-

Less ammunition, lb 310
Loaded (Depth Charge Mk 7 and Arbor), lb 1140

Major dimensions:-

Height, loaded, in. 44*
Base diameter, in. 20
Length of barrel, in. 24
Radius of clearance circle non-trainable
Radius of working circle non-trainable

Barrel-laying movements:-

Train non-trainable
Elevation (fixed angle), deg 45

Training speed non-trainable

Elevating speed fixed elevation

Firing data:-

Type electric or percussion
Power

v AC 15 to 20

v DC 6 to 21

*Estimated

**With No. 3 impulse charge

Firing data (cont)

Firing interval, min 3*
Projector capacity, rounds 1

Firing reaction:-

Shear load (at 120-yd range), lb 32,000
Vertical load (at 120-yd range), lb 32,000

Ballistic data:-

Depth Charge Mk 9 Mod 4**

Initial velocity, fps 125*
Time of flight, sec 5.1
Range, yd 150
Depth setting range, ft 30 to 1000
Terminal sinking speed, fps 23

Mount data:-

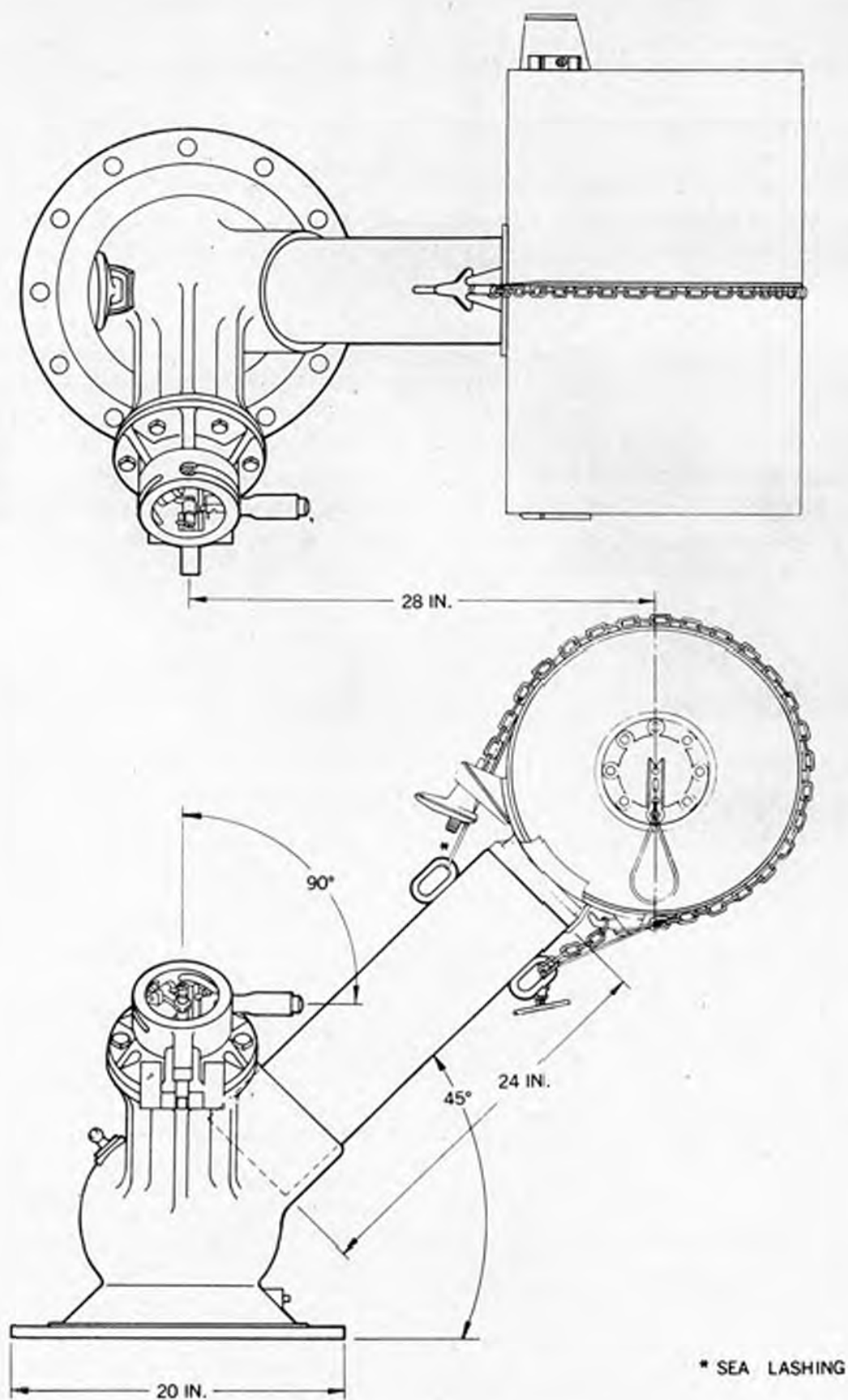
Components

Depth Charge Projector Mk 6 Mod 2
List of drawings Sk 91338
General arrangement Dr 330297
Dr 330301,2

Adapters and attachments Arbor Mk 6 Mod 0
Arbor Mk 7 Mods 0-4

Publication references:-

Instruction handbook OP 831 (First Revision)
Procurement specifications none
Installation instructions none
Spare parts list NAVORD 19600
Catalog of Navy Material none
Depth Charge Mk 9 OP 866 (Second Revision)
Depth Charges Mk 6,7 OP 747 (First Revision)
Depth Charge Mk 14 OP 669
OP 1577



Depth Charge Projector Mk 6 Mod 2

DEPTH CHARGE PROJECTOR MARK 7 MOD 0

OBSOLETE

DESCRIPTION

Depth Charge Projector Mk 7 Mod 0 is an anti-submarine weapon capable of simultaneously projecting two depth charges abeam of a vessel. The weapon can be fired electrically or by percussion, and was designed as part of Depth Charge Equipment Mk 8 for subchasers. Usually two projectors (mounted on the ship's centerline) are used to enlarge and supplement the pattern obtained by using the stern depth charge racks.

The projector consists of two barrels attached to a central expansion chamber that contains a

breechblock. The barrels are mounted 90 degrees apart, and give the projector a Y shape. The breechblock housing contains the firing mechanism that is used to detonate a 3-inch cartridge. Two arbors, one for each barrel, are used to hold the depth charges. Each arbor is an expendable missile with a closed cylinder and tray. The cylinder fits into the projector barrel; the tray is used for attachment of a depth charge. When the cartridge is fired, both depth charges, together with their arbors, are projected at once.

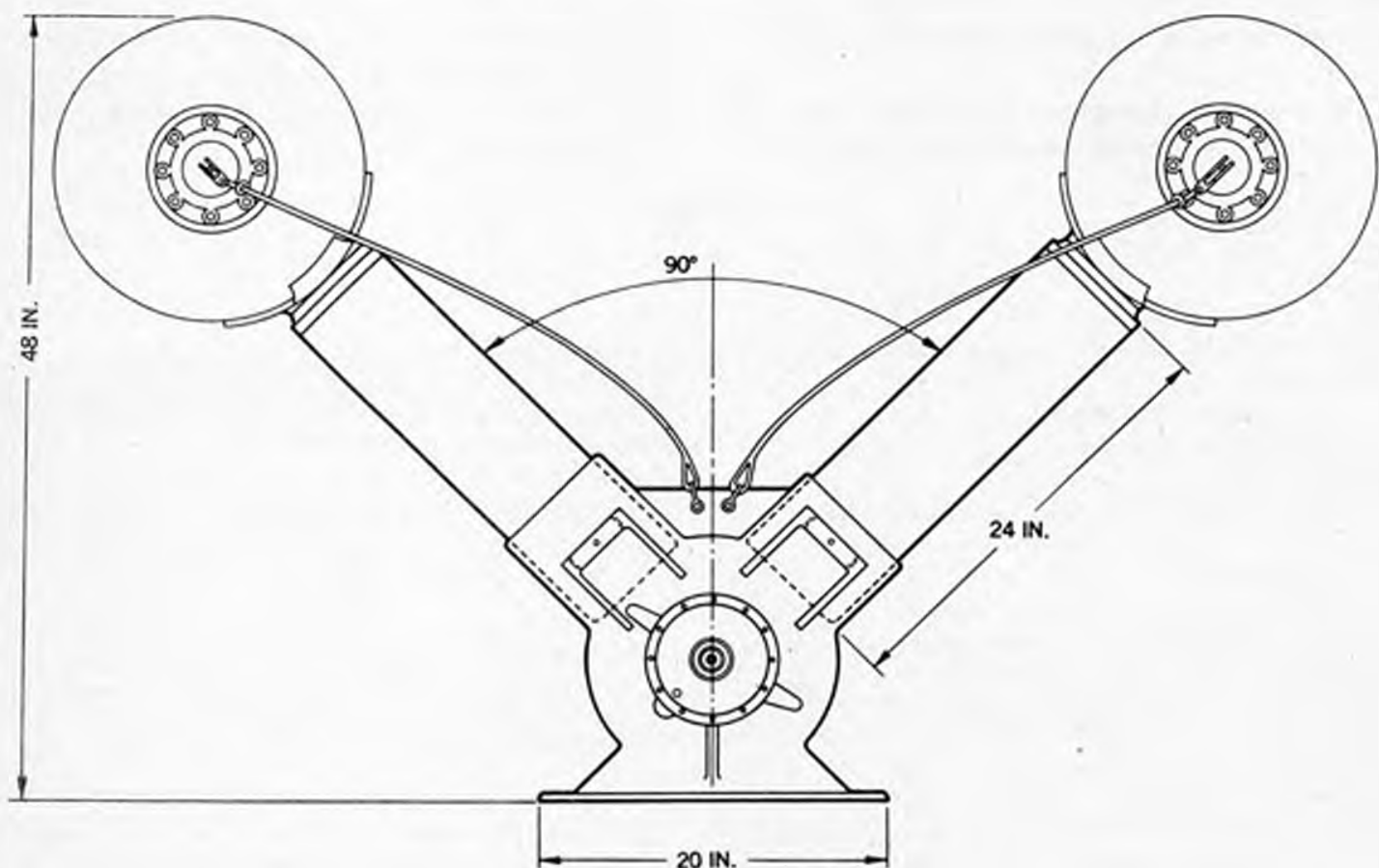
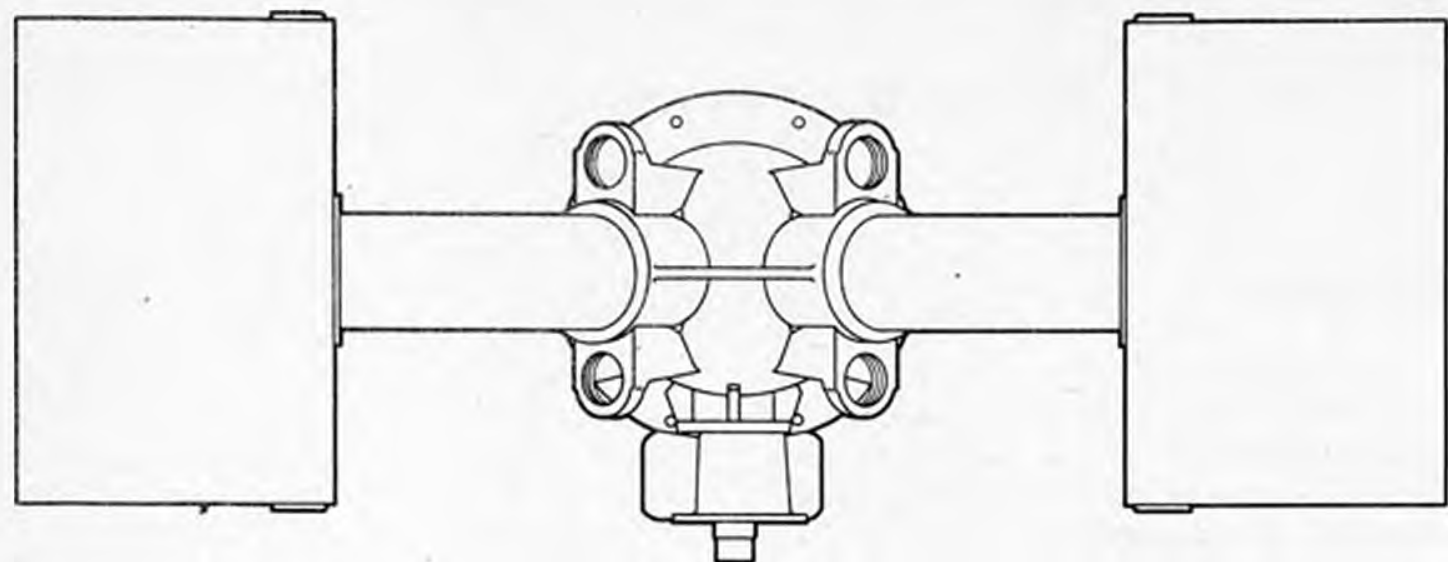
DATA

Number of barrels 2
Ammunition:-
 Depth Charge Mk 3 Mod 0
 Depth Charge Mk 6 Mod 0
Weight:-
 Less ammunition, lb *
 Loaded, lb *
Major dimensions:-
 Height, in. 48*
 Base diameter, in. 20
 Length of barrel, in. 24
 Radius of clearance circle non-trainable
 Radius of working circle non-trainable
Barrel-laying movements:-
 Train non-trainable
 Elevation (fixed angle), deg 45
Training speed non-trainable
Elevating speed fixed elevation
Firing data:-
 Type electric or percussion
 Power *

Firing data (cont)
 Firing interval, min 3**
 Projector capacity, rounds 2
Firing reaction:-
 Shear load, lb *
 Vertical load, lb *
Ballistic data:-
 Ammunition not designated
Mount data:-
 Components
 Depth Charge Projector Mk 7 Mod 0
 List of drawings none
 General arrangement Dr 294101
Adapters and attachments Arbor Mk 3
Publication references:-
 Instruction handbook OD 4434
 Procurement specifications none
 Installation instructions none
 Spare parts list none
 Catalog of Navy Material none

*Data not available

**Estimated



Depth Charge Projector Mk 7 Mod 0

SECTION 3-B

PROJECTORS

A projector is an antisubmarine weapon for launching projector charges from the deck of a ship. Projector charges in service differ from depth charges in that they are detonated by impact instead of by hydrostatic pressure or magnetic influence. Another difference is that the propellant of a projector charge is contained within the missile, while a depth charge is propelled by a cartridge within the depth charge projector.

Both projector charges and depth charges differ from rockets in that the charges have only an initial impetus from a cartridge, while rockets have propellants that give them impetus during a period of their flight.

Service projectors fire a pattern of from 24 to 61 projector charges. Depth charge projectors in service fire only one charge and rely upon the emplacement of the depth charge projectors to establish a pattern.

The charges fired by a projector are streamlined to give them a high sinking rate, and this characteristic, coupled with the point-detonating feature, offers two advantages over depth charges. The high sinking rate increases the effectiveness of an attack by reducing the possibility of a miss caused by target movement after firing. The point-detonating feature of the missiles eliminates the possibility of losing contact with the target as a result of underwater disturbance, since the missiles are not detonated unless the target is hit.

Development of projectors has progressed from Projector Mk 10 to Projector Mk 17. All use the same projector charge.

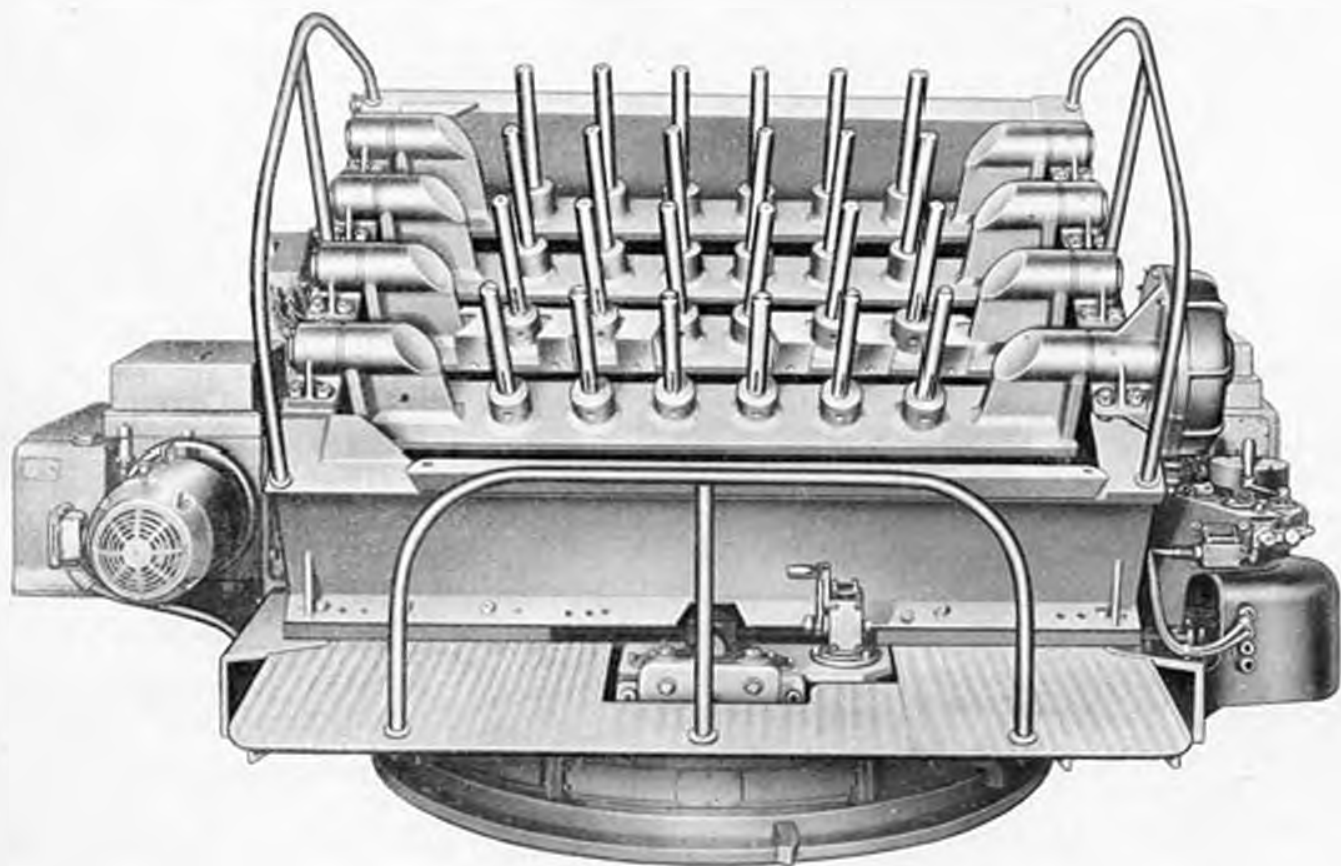
Projector Mk 10 is a non-trainable weapon for bow installation. It fires 24 projector charges in an elliptical pattern. A local operator compensates for roll by a follow-the-pointer director system, and the ship is maneuvered to bring the target within the pattern.

Projector Mk 11 varies from Projector Mk 10 in that it fires charges in a circular pattern and at increased range.

Projector Mk 14 is similar to Projector Mk 11 but is installed on a trainable mount with operators locally controlling train and elevation. Because of this arrangement the ship is maneuvered to bring the target to the set range and within the firing arc while the weapon is being independently aimed.

Projector Mk 15 differs from Projector Mk 14 in that it is designed for beam installation and has power drives automatically controlled by sonar-initiated director signals.

Projector Mk 17, like Projector Mk 15, is automatically controlled in train and elevation. This weapon is mounted on the bow, fires 61 charges in a filled hexagonal pattern, and has a spigot platform that can be stowed almost flush to the deck. Spigots are designed to maintain a fixed pattern through a limited variation in range.



Projector Mk 15 Mod 0

CONTENTS

7.2-inch Projectors

Mk	Mod	Page
10	0	237
10	1	239
11	0	241
11	2	243
14	0	245
14	1	247
15	0	249
17	0	251

PROJECTOR MARK 10 MOD 0

OBSOLETE

DESCRIPTION

Projector Mk 10 Mod 0 is an electrically fired antisubmarine weapon for throwing a group of 24 explosive charges ahead of a destroyer escort type ship.

The projector consists of 24 missile-holding spigots supported by four trunnion-mounted cradles in a non-trainable base. Each of the fore-and-aft cradles contains six spigots wired for electrical firing. Projector charges fit over

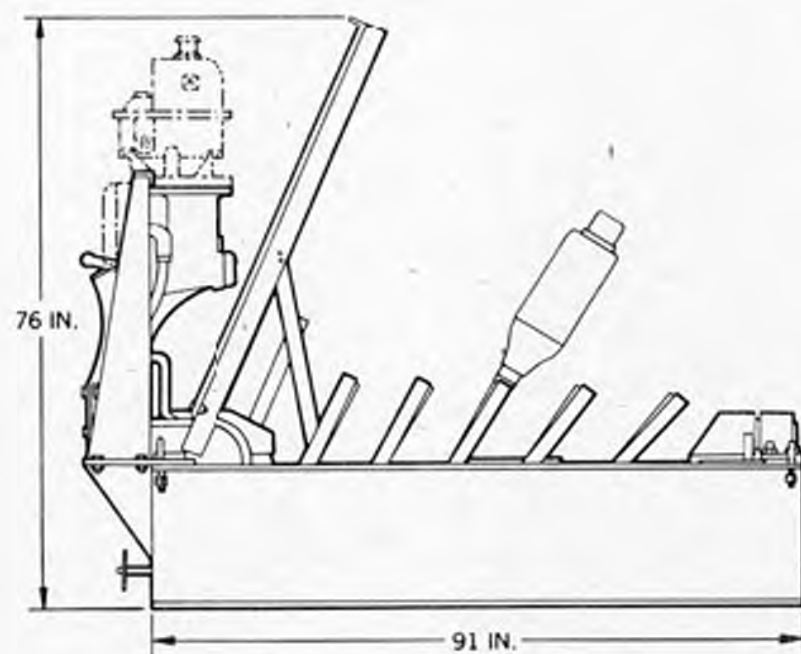
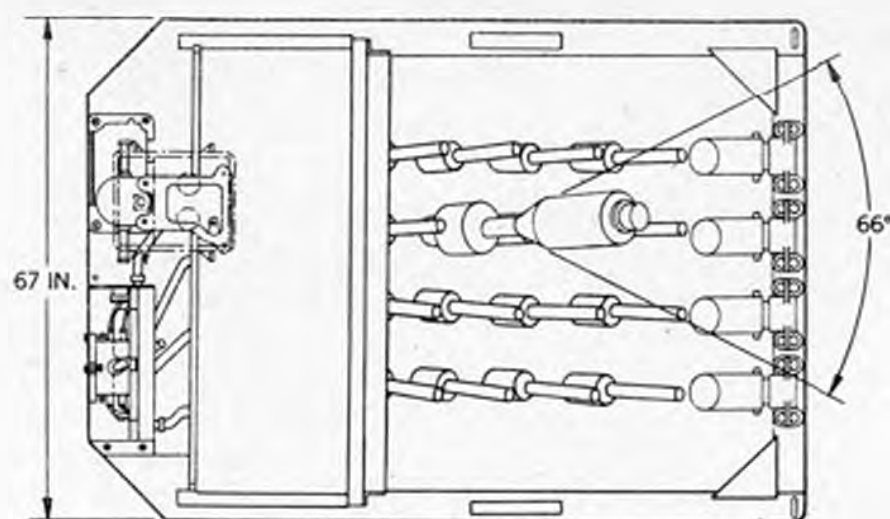
these spigots. Cradles are rotated about their fore-and-aft axes to compensate for ship roll and to permit limited training of the line of fire. A roll correction gear assembly mounted behind a blast shield on the base frame is used in follow-the-pointer control of spigot tilt. A gun train indicator and a target designation transmitter are used to indicate target position. When the projector is fired, the 24 charges are projected in ripple salvo to fall in an elliptical pattern.

DATA

Number of spigots24
Ammunition:-
7.2-inch Projector Charge Mk 6 All Mods
Weight:-
Less ammunition, lb5000
Loaded, lb6600
Major dimensions:-
Height, in.76
Width, in.67
Length, in.91
Radius of clearance circlenon-trainable
Radius of working circlenon-trainable
Spigot-laying movements:-
Cradle rotation, deg66
Cradle rotating speed manually rotated
Firing data:-
Type electric, ripple fire
Power
v AC (Ship's generator)20
v DC (Battery) 6
Firing interval (between pairs), sec 0.2
Time, complete ripple salvo, sec 2.2
Range data:-
Pattern140-foot ellipse
Range to pattern center (maximum), yd 210

Firing reaction:-
Shear load
Rearward, lb 44,200
Lateral, lb 22,000
Vertical load
At after end of frame, lb 61,000
At forward end of frame, lb 36,800
Ballistic data:-
Initial velocity, fps 144
Time of flight (average), sec 7.4
Range table OP 1904
Mount data:-
Components
Projector Mk 10 Mod 2
Gun Train Indicator Mk 52 Mod 2
Firing Panel Mk 27 Mod 0*
List of drawings Sk 91188
General arrangement Dr 367387,367417,8
Adapters and attachments none
Publication references:-
Instruction handbook OP 1001 (First Revision)
Procurement specifications OS 3095
Installation instructions OS 2796
Spare parts list NAVORD 19872
Catalog of Navy Material none
Ammunition OP 1001 (First Revision)
Applicable Ordalts Ordalt 3153
Ordalts 3172,3

*Firing Panel Mk 33 Mod 0 replaces Firing Panel Mk 27 Mod 0 when Ordalt 3153 is completed.



Projector Mk 10 Mod 0

PROJECTOR MARK 10 MOD 1

IN SERVICE

DESCRIPTION

Projector Mk 10 Mod 1 is an electrically fired antisubmarine weapon for throwing a group of 24 explosive charges ahead of a destroyer escort type ship.

The projector consists of 24 missile-holding spigots supported by four trunnion-mounted cradles in a non-trainable base. Each of the fore-and-aft cradles contains six spigots wired for electrical firing. Projector charges fit over these spigots. Cradles are rotated about their fore-and-aft axes to compensate for ship roll and

to permit limited training of the line of fire. A roll correction gear assembly mounted behind a blast shield on the base frame is used in follow-the-pointer control of spigot tilt. A gun train indicator and a target designation transmitter are used to indicate target position. When the projector is fired, the 24 charges are projected in ripple salvo to fall in an elliptical pattern.

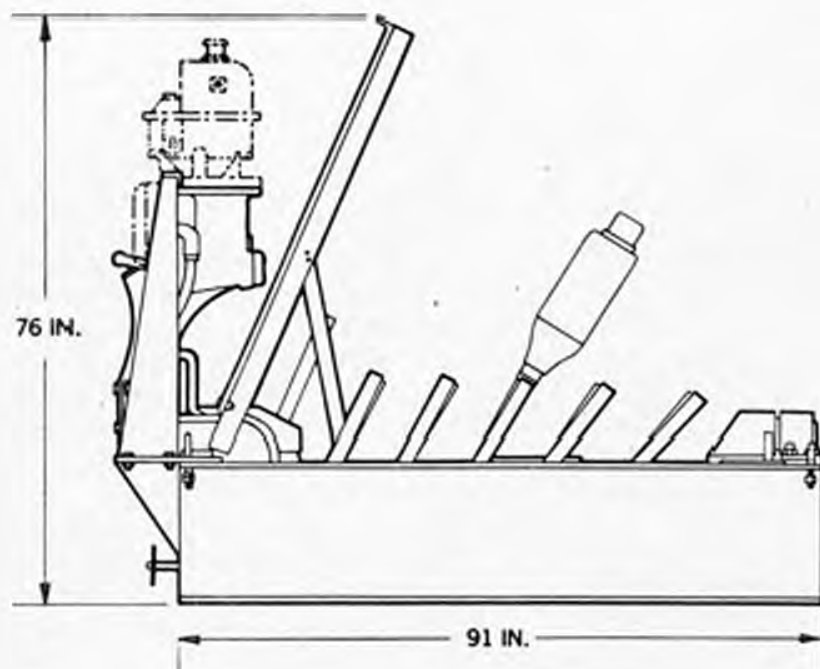
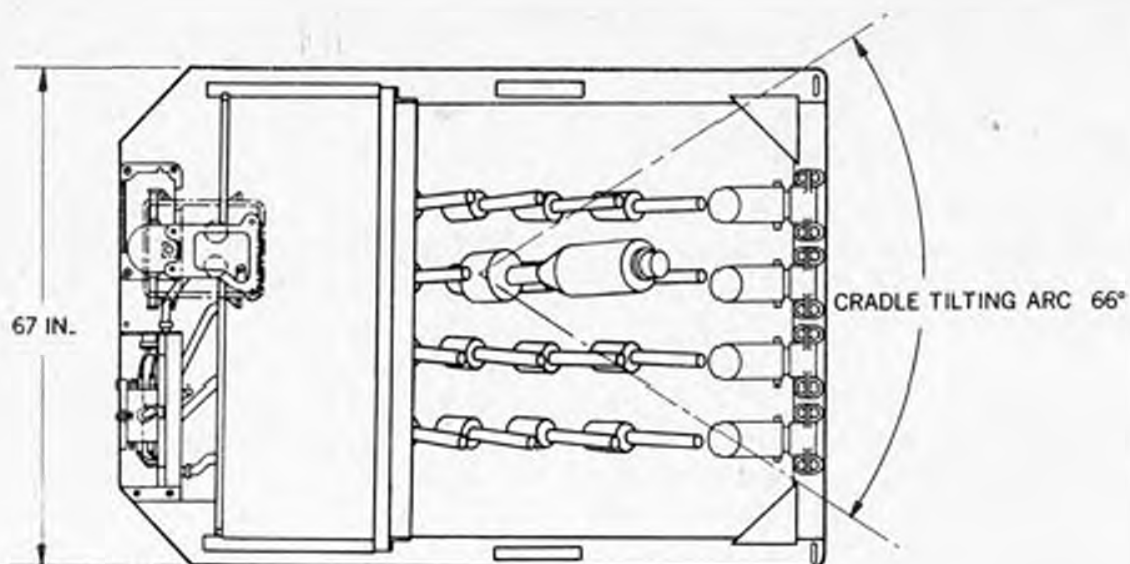
Projector Mk 10 Mod 1 is identical to Projector Mk 10 Mod 0 except that wiring is improved in accordance with Ordalt 2015.

DATA

Number of spigots 24
Ammunition:-
7.2-inch Projector Charge Mk 6 All Mods
Weight:-
Less ammunition, lb 5000
Loaded, lb 6600
Major dimensions:-
Height, in. 76
Width, in. 67
Length, in. 91
Radius of clearance circle non-trainable
Radius of working circle non-trainable
Spigot-laying movements:-
Cradle rotation, deg 66
Cradle rotating speed manually rotated
Firing data:-
Type electric, ripple fire
Power
v AC (Ship's generator) 20
v DC (Battery alternate) 6
Firing interval (between pairs), sec 0.2
Time, complete ripple salvo, sec 2.2
Range data:-
Pattern elliptical
Range to pattern center (maximum), yd 210

Firing reaction:-
Shear load
Rearward, lb 44,200
Lateral, lb 22,000
Vertical load
At after end of frame, lb 61,000
At forward end of frame, lb 36,800
Ballistic data:-
Initial velocity, fps 144
Time of flight (average), sec 7.4
Range table OP 1904
Mount data:-
Components
Projector Mk 10 Mod 1
Gun Train Indicator Mk 52 Mod 2
Firing Panel Mk 33 Mod 0*
List of drawings Sk 109302
General arrangement Dr 423601,2,3
Adapters and attachments none
Publication references:-
Instruction handbook OP 1001 (First Revision)
Procurement specifications OS 3095
Installation instructions OS 2796
Spare parts list NAVORD 19872
Catalog of Navy Material none
Ammunition OP 1001 (First Revision)
Applicable Ordalts Ordalt 3153
Ordalts 3172,3

*Replaces Firing Panel Mk 27 Mod 0 (Ordalt 3153)



Projector Mk 10 Mod 1

PROJECTOR MARK 11 MOD 0

IN SERVICE

DESCRIPTION

Projector Mk 11 Mod 0 is an electrically fired antisubmarine weapon for throwing a group of 24 explosive charges ahead of a destroyer escort type ship.

The projector consists of 24 missile-holding spigots supported by four trunnion-mounted cradles in a non-trainable base. Each of the fore-and-aft cradles contains six spigots wired for electrical firing. Projector charges fit over these spigots. Cradles are rotated about their fore-and-aft axes to compensate for ship roll and to permit limited training of the line of fire. A

roll correction gear assembly mounted behind the blast shield on the base frame is used in follow-the-pointer control of spigot tilt. A gun train indicator and a target designation transmitter are used to indicate target position. When the projector is fired, the 24 charges are projected in ripple salvo to fall in a circular pattern.

Projector Mk 11 Mod 0 differs from Projector Mk 10 Mod 1 in that the spigots are arranged to throw the charges in a circular pattern, rather than an elliptical pattern.

DATA

Number of spigots 24
Ammunition:-

7.2-inch Projector Charge Mk 6 All Mods

Weight:-

Less ammunition, lb 5000
Loaded, lb 6600

Major dimensions:-

Height, in. 76
Width, in. 67
Length, in. 91
Radius of clearance circle non-trainable
Radius of working circle non-trainable

Spigot-laying movements:-

Cradle rotation, deg 66
Cradle rotating speed manually rotated

Firing data:-

Type electric, ripple fire
Power
v AC (Ship's generator) 20
v DC (Battery alternate) 6
Firing interval (between pairs), sec 0.2
Time, complete ripple salvo, sec 2.2

Range data:-

Pattern 200-foot circle
Range to pattern center (maximum), yd 208

Firing reaction:-

Shear load

Rearward, lb 44,200
Lateral, lb 22,000

Vertical load

At after end of frame, lb 61,000
At forward end of frame, lb 36,800

Ballistic data:-

Initial velocity, fps 144
Time of flight (average), sec 7.5
Range table OP 1904

Mount data:-

Components

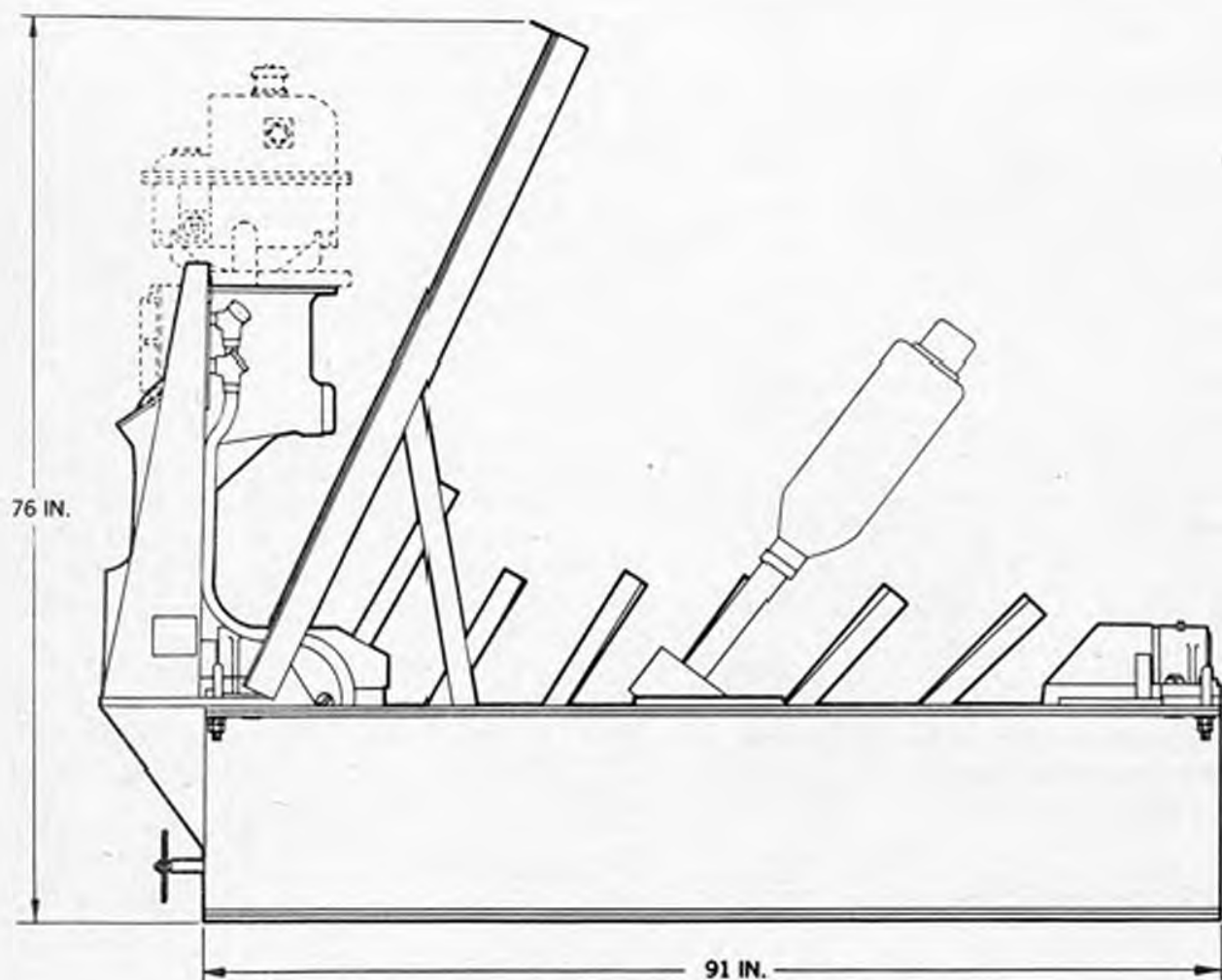
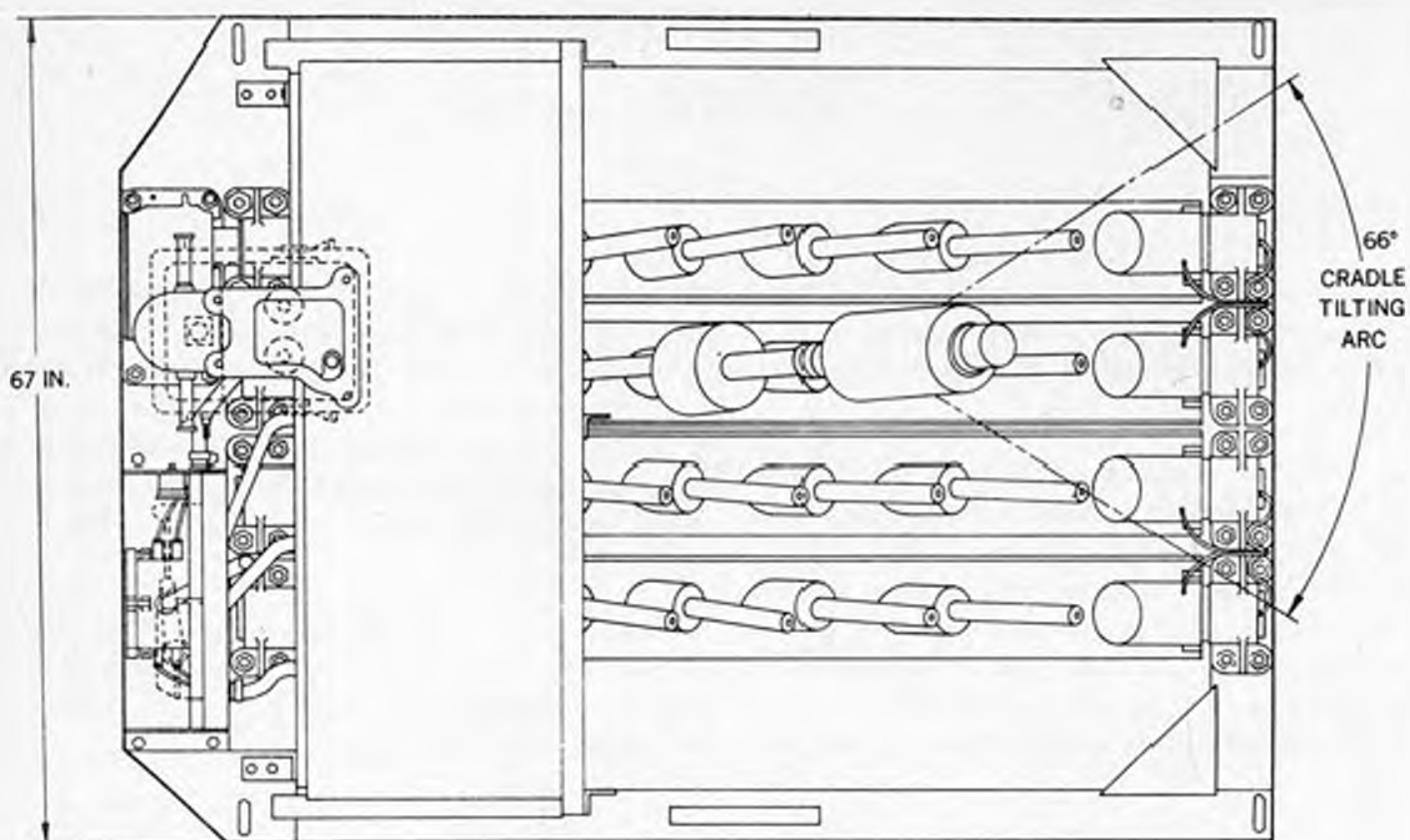
Projector Mk 11 Mod 0
Gun Train Indicator Mk 52 Mod 2
Firing Panel Mk 33 Mod 0*
List of drawings LD 109094
General arrangement Dr 367425,6,7

Adapters and attachments none

Publication references:-

Instruction handbook OP 1001 (First Revision)
Procurement specifications none
Installation instructions OD 7606
Spare parts list NAYORD 19872
Catalog of Navy Material none
Ammunition OP 1001 (First Revision)
Applicable Ordalts Ordalt 3153
Ordalts 3172,3

*Replaces Firing Panel Mk 27 Mod 0 (Ordalt 3153)



Projector Mk 11 Mod 0

PROJECTOR MARK 11 MOD 2

IN SERVICE

DESCRIPTION

Projector Mk 11 Mod 2 is an electrically fired antisubmarine weapon for throwing a group of 24 explosive charges ahead of a destroyer escort type ship.

The projector consists of 24 missile-holding spigots supported by four trunnion-mounted cradles in a non-trainable base. Each of the fore-and-aft cradles contains six spigots wired for electrical firing. Projector charges fit over these spigots. Cradles are rotated about their fore-and-aft axes to compensate for ship roll and to permit limited training of the line of fire. A roll correction gear assembly and blast shield, mounted on a pedestal and shield subassembly, is located 9 feet to the rear of the projector.

This assembly is linked to the projector by a drive shaft and is used in follow-the-pointer control of spigot tilt. A gun train indicator and a target designation transmitter are used to indicate target position. When the projector is fired, the 24 charges are projected in ripple salvo to fall in a circular pattern.

Projector Mk 11 Mod 2 is functionally similar to Projector Mk 11 Mod 0 and differs only in that the roll correction gear assembly and blast shield are separated from the projector frame by the drive shaft. In addition, the spigots are mounted so that the diameter of the circular pattern formed by the charges is greater than that achieved with Projector Mk 11 Mod 0.

DATA

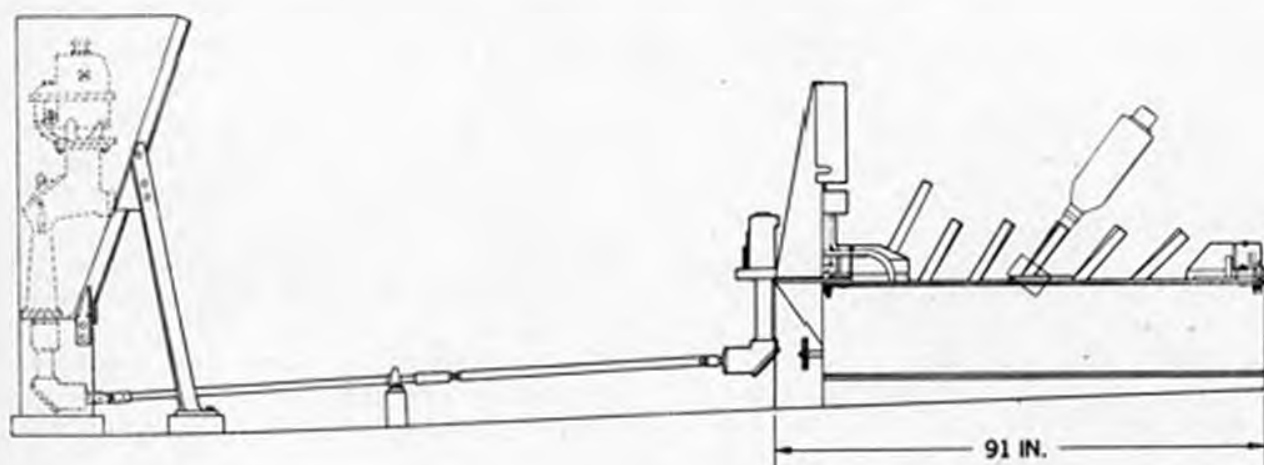
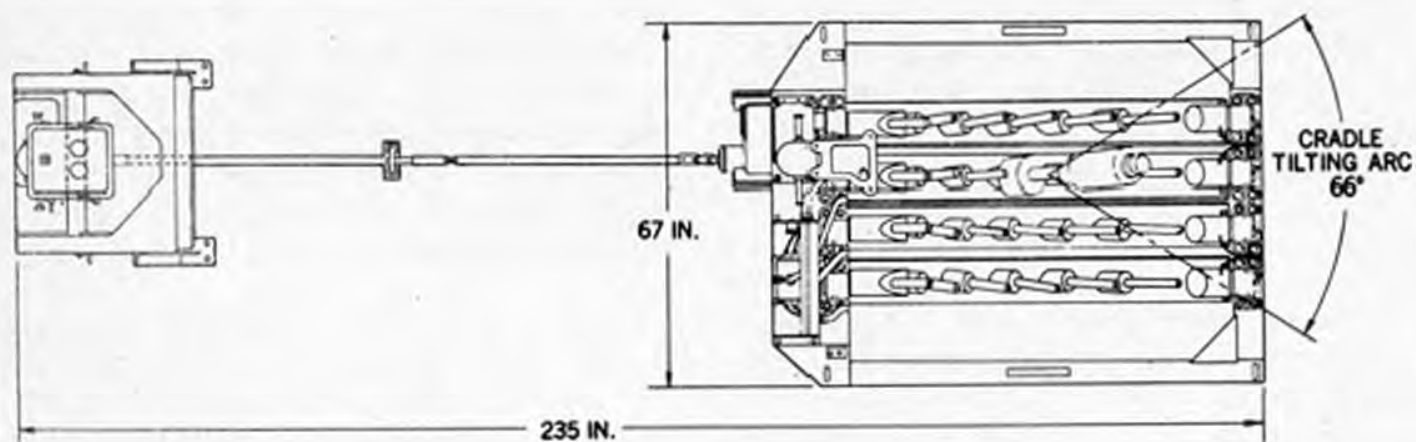
Number of spigots 24
Ammunition:-
7.2-inch Projector Charge Mk 6 All Mods
Weight:-
Less ammunition, lb 5584
Loaded, lb 7184
Major dimensions:-
Height, in. 76
Width, in. 67
Length, in. 235
Radius of clearance circle non-trainable
Radius of working circle non-trainable
Spigot-laying movements:-
Cradle rotation, deg 66
Cradle rotating speed manually rotated
Firing data:-
Type electric, ripple fire
Power
v AC (Ship's generator) 20
v DC (Battery alternate) 6
Firing interval (between pairs), sec 0.2
Time, complete ripple salvo, sec 2.2
Range data:-
Pattern 240-foot circle*
Range to pattern center (maximum), yd 300*

Firing reaction:-
Shear load, lb **
Vertical load, lb **
Ballistic data:-
Initial velocity, fps **
Time of flight (average), sec **
Range table **
Mount data:-
Components
Projector Mk 11 Mod 2
Gun Train Indicator Mk 52 Mod 2
Firing Panel Mk 33 Mod 0***
List of drawings LD 273676
General arrangement Dr 978338,9
Adapters and attachments none
Publication references:-
Instruction handbook OP 1001 (First Rev)
Procurement specifications none
Installation instructions OD 7606
Spare parts list NAVORD 19872
Catalog of Navy Material none
7.2-inch Projector Charge OP 1001 (First Rev)
Applicable Ordalts Ordalt 3153
Ordalts 3172,3

*Estimated

**Data not available

***Replaces Firing Panel Mk 27 Mod 0 (Ordalt 3153)



Projector Mk 11 Mod 2

PROJECTOR MARK 14 MOD 0

IN SERVICE

DESCRIPTION

Projector Mk 14 Mod 0 is an electrically fired anti-submarine weapon for throwing a group of 24 explosive charges from vessels of the destroyer escort type. The weapon is similar to Projector Mk 11 Mod 0 except that it is mounted on a modified 40mm stand.

The projector consists of 24 missile-holding spigots supported by four trunnion-mounted cradles in a base. Each of the fore-and-aft

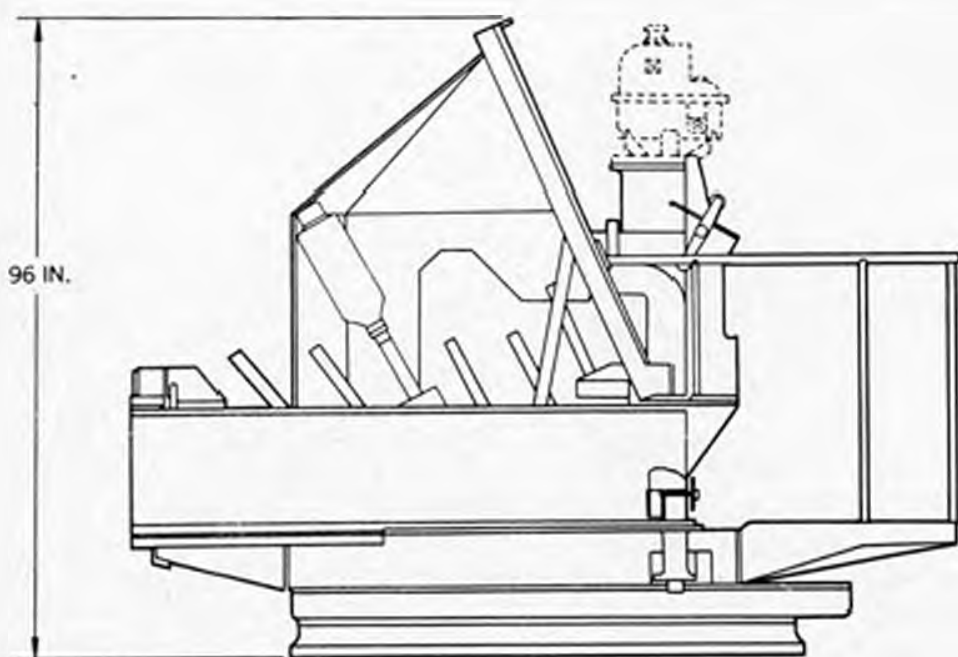
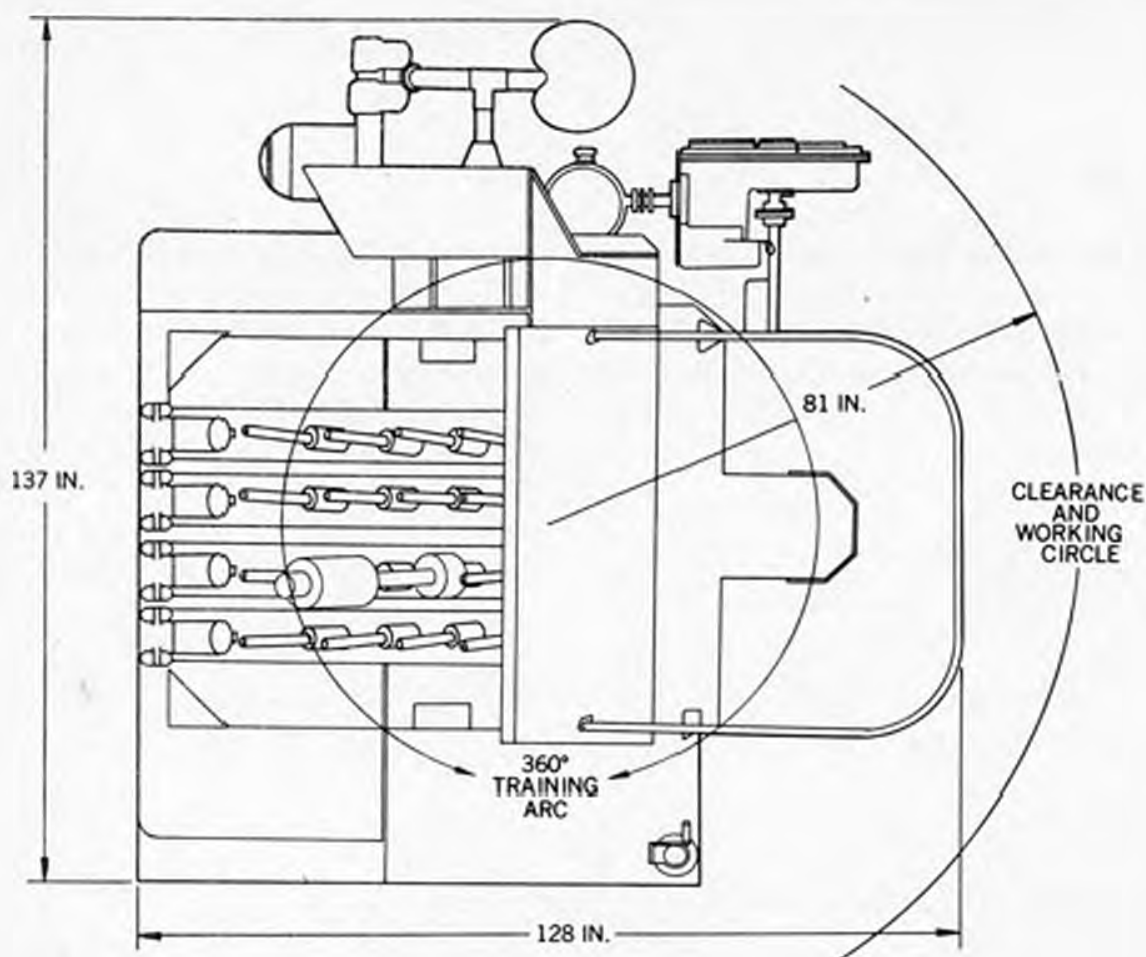
cradles contains six spigots wired for electrical firing. Cradles are rotated about their fore-and-aft axes to compensate for ship roll. The entire mount can be rotated in train to track the target. A roll correction gear assembly, similar to that used in Projector Mk 11 Mod 0, is mounted on the after end of the projector. A gun train indicator and a target designation transmitter are used to indicate target position. When the projector is fired, the 24 charges are projected in ripple salvo to fall in a circular pattern.

DATA

Number of spigots 24
Ammunition:-
7.2-inch Projector Charge Mk 6 All Mods
Weight:-
Less ammunition, lb 16,400
Loaded, lb 17,500
Major dimensions:-
Height (unloaded), in. 96
Width, in. 137
Length, in. 128
Radius of clearance circle, in. 81
Radius of working circle, in. 81
Spigot-laying movements:-
Carriage train, right, deg 0 to 180
Carriage train, left, deg 0 to 180
Cradles rotation, deg 66
Training speed manually trained
Cradle rotating speed manually rotated
Firing data:-
Type electric, ripple fire
Power
v AC (Ship's generator) 20
v DC (Battery) 6
Firing interval (between pairs), sec 0.2
Time, complete ripple salvo, sec 2.2
Range data:-
Pattern 200-foot circle
Range to pattern center (maximum), yd 208

Firing reaction:-
Shear load
Rearward, lb 44,200
Lateral, lb 22,000
Vertical load
At after end of frame, lb 61,000
At forward end of frame, lb 36,800
Ballistic data:-
Initial velocity, fps 144
Time of flight (average), sec 7.5
Range table OP 1001 (First Revision)
Mount data:-
Components
Projector Mk 11 Mod 0
Gun Train Indicator Mk 52 Mod 2
Firing Panel Mk 33 Mod 0*
List of drawings Sk 168679
General arrangement Sk 194135
Adapters and attachments none
Publication references:-
Instruction Handbook OP 1001 (First Revision)
Procurement specifications none
Installation instructions none
Spare parts list NAVORD 19872
Catalog of Navy Material none
Ammunition OP 1001 (First Revision)
Applicable Ordalts Ordalt 3135
Ordalts 3172,3

*Replaces Firing Panel Mk 27 Mod 0 (Ordalt 3135)



Projector Mk 14 Mod 0

PROJECTOR MARK 14 MOD 1

IN SERVICE

DESCRIPTION

Projector Mk 14 Mod 1 is an electrically fired antisubmarine weapon for throwing a group of 24 explosive charges from vessels of the destroyer escort type. The weapon is similar to Projector Mk 11 Mod 0 except that it is mounted on a modified 40mm stand.

The projector consists of 24 missile-holding spigots supported by four trunnion-mounted cradles in a base. Each of the fore-and-aft cradles contains six spigots wired for electrical firing. Cradles are rotated about their fore-and-aft axes to compensate for ship roll. The entire mount can be rotated in train. A roll correction

gear assembly, similar to that used in Projector Mk 11 Mod 0, is mounted on the after end of the projector. This assembly is used in follow-the-pointer control of spigot tilt. A gun train indicator and a target designation transmitter are used to indicate target position. When the projector is fired, the 24 charges are projected overboard to fall in a circular pattern.

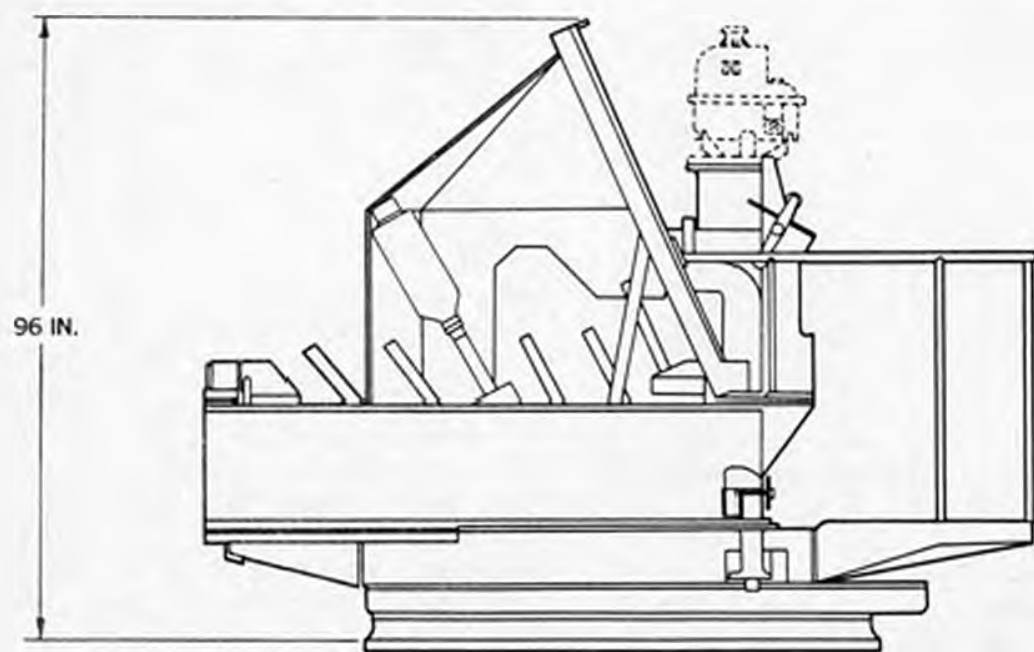
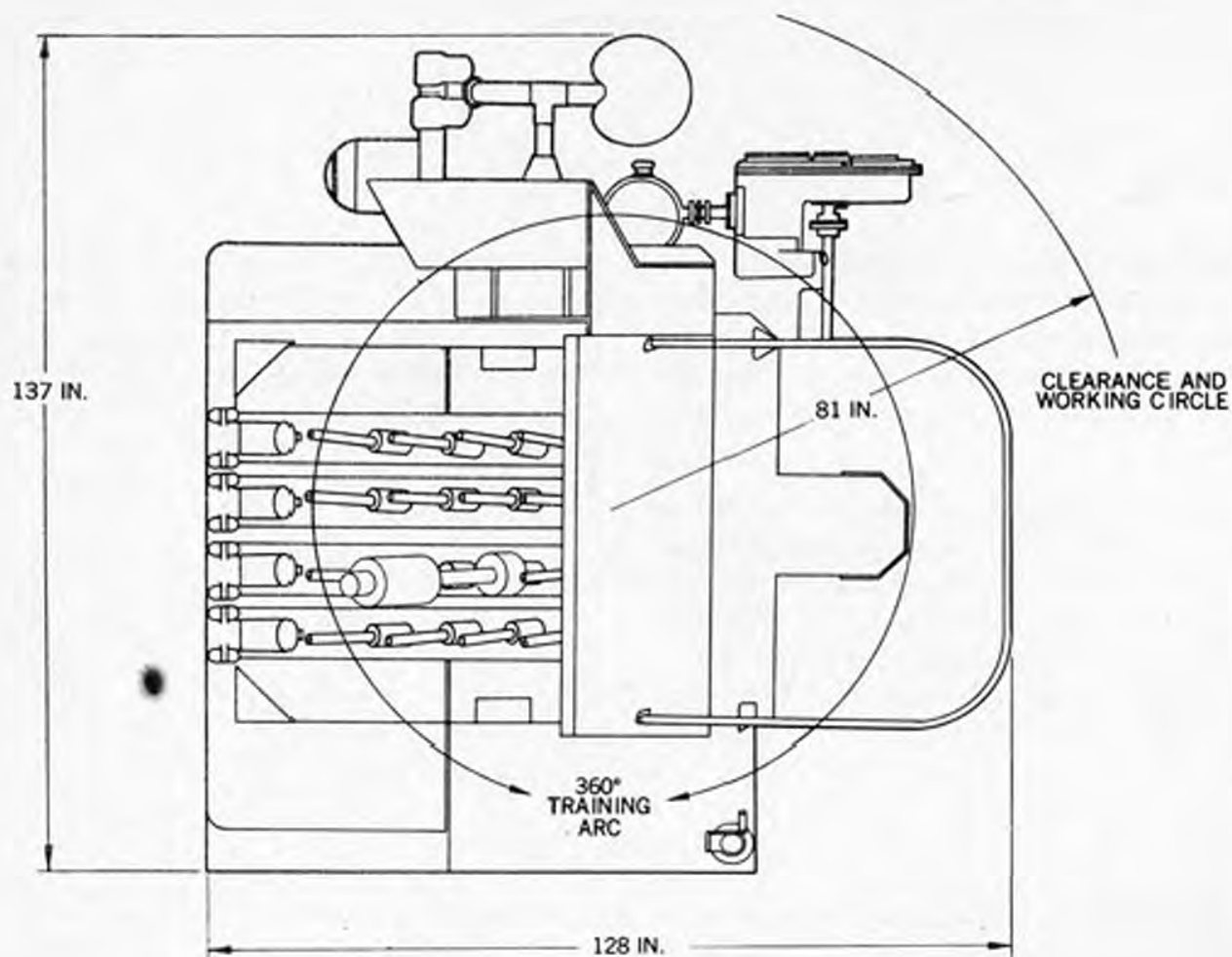
Projector Mk 14 Mod 1 differs from Projector Mk 14 Mod 0 in the material used for the base ring support of the stand and in the details of the train mechanism linkage.

DATA

Number of spigots..... 24
Ammunition:-
7.2-inch Projector Charge Mk 6 All Mods
Weight:-
Less ammunition, lb..... 16,400
Loaded, lb..... 17,500
Major dimensions:-
Height (unloaded), in..... 96
Width, in..... 137
Length, in..... 128
Radius of clearance circle, in..... 81
Radius of working circle, in..... 81
Spigot-laying movements:-
Carriage train, right, deg..... 0 to 180
Carriage train, left, deg..... 0 to 180
Cradle rotation, deg..... 66
Training speed..... manually trained
Cradle rotating speed..... manually rotated
Firing data:-
Type..... electric, ripple fire
Power
v AC (Ship's generator)..... 20
v DC (Battery alternate)..... 6
Firing interval (between pairs), sec..... 0.2
Time, complete ripple salvo, sec..... 2.2
Range data:-
Pattern..... 200-foot circle
Range to pattern center (maximum), yd..... 208

Firing reaction:-
Shear load
Rearward, lb..... 44,200
Lateral, lb..... 22,000
Vertical load
At after end of frame, lb..... 61,000
At forward end of frame, lb..... 36,800
Ballistic data:-
Initial velocity, fps..... 144
Time of flight (average), sec..... 7.5
Range table..... OP 1001 (First Revision)
Mount data:-
Components
Projector..... Mk 11 Mod 0
Gun Train Indicator..... Mk 52 Mod 2
Firing Panel..... Mk 33 Mod 0*
List of drawings..... Sk 174453
General arrangement..... Sk 194135
Adapters and attachments..... none
Publication references:-
Instruction handbook (ref.)..... OP 1001 (First Rev)
Procurement specifications..... none
Installation instructions..... none
Spare parts list..... NAVORD 19872
Catalog of Navy Material..... none
7.2-inch Projector Charge..... OP 1001 (First Rev)
Applicable Ordalts..... Ordalt 3135
Ordalt 3172,3

*Replaces Firing Panel Mk 27 Mod 0 (Ordalt 3135)



Projector Mk 14 Mod 1

PROJECTOR MARK 15 MOD 0

IN SERVICE

DESCRIPTION

Projector Mk 15 Mod 0 is an electrically fired antisubmarine weapon that can be controlled manually or automatically. The projector is used on destroyer escort type vessels to project a group of 24 explosive charges by pairs in continuous ripple-fire action.

Projector Mk 15 Mod 0, which is a development of Projectors Mk 10, 11, and 14, consists of a stand, carriage, and train and elevation power drives. The carriage differs from those in earlier models in that the spigot-bearing cradles are in a transverse position instead of a fore-and-aft

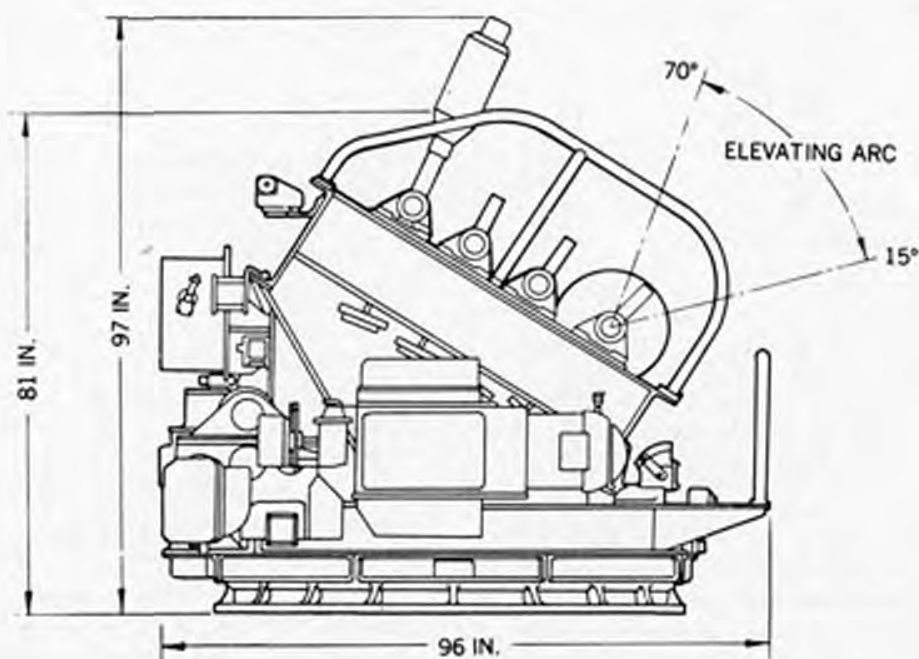
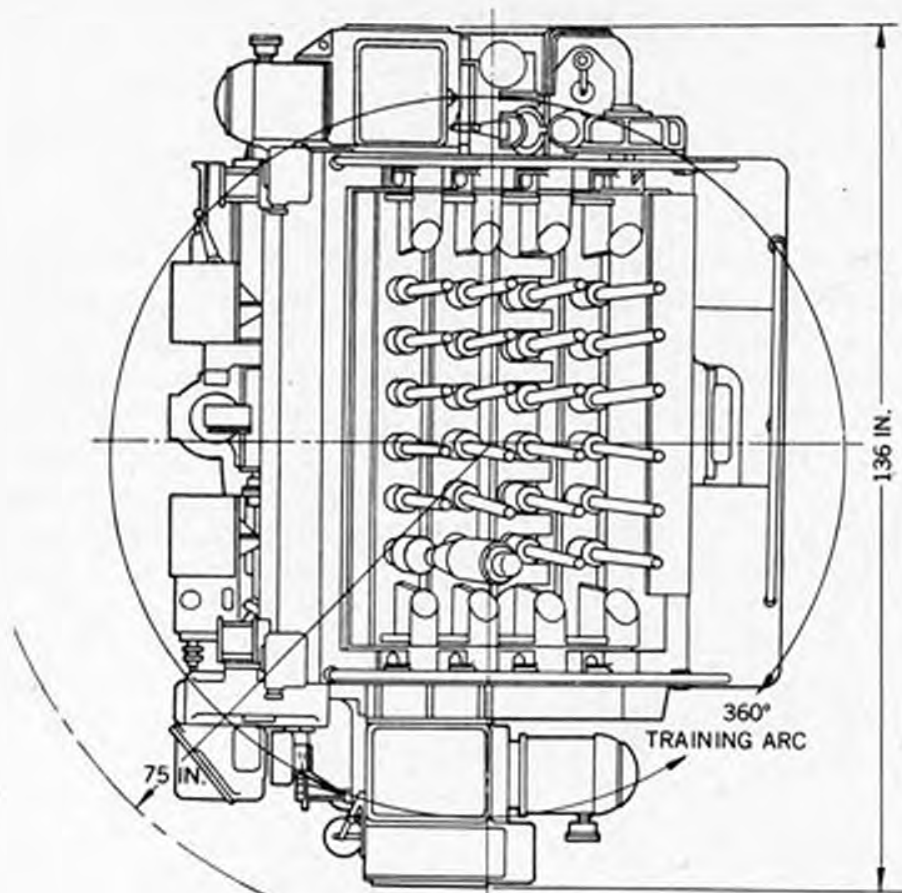
position. The weapon is automatically controlled in train and elevation. Movement of the weapon is accomplished by director control operating through power drives to compensate for roll and pitch of the ship. When a large error exists between director signal and train position, a train indicator-regulator is manually operated in follow-the-pointer manner to align the weapon with the director signal. The stand, carriage, and power drives of Projector Mk 15 Mod 0 are adaptations of 40mm quadruple mount components. Firing is accomplished by a remote firing key that energizes a firing panel on the mount.

DATA

Number of spigots	24
Ammunition:-	
7.2-inch Projector Charge Mk 6 All Mods	
Weight:-	
Less ammunition, lb	17,425
Loaded, lb	18,985
Major dimensions:-	
Height (unloaded), in.	75
Width, in.	136
Length, in.	96
Radius of clearance circle, in.	75
Radius of working circle, in.	75
Spigot-laying movements, maximum:-	
Carriage train, deg	0 to 360
Mean spigot elevation, deg	30.4 to 85.0
Training speed, deg per sec	19.2
Elevating speed, deg per sec	25.4
Firing data:-	
Type	electric, ripple fire
Power	
v AC (from ship's generator)	20
v DC (storage battery alternate)	6
Firing interval, sec	0.2
Time, complete ripple salvo, sec	2.2
Structural interruption	by firing cutout cam
Range data:-	
Pattern	200-ft circle
Range to pattern center (maximum), yd	188

Firing reaction:-	
Shear load (maximum), lb	120,000
Vertical load (maximum), lb	140,000
Ballistic data:-	
Initial velocity, fps	144
Time of flight (average), sec	7.5
Range table	OP 1904
Mount data:-	
Components	
Projector Carriage	Mk 1 Mod 0
Projector Stand	40mm Mk 2 Mod 0
Train Power Drive	Mk 6 Mod 14
Elevation Power Drive	Mk 5 Mod 20
Firing Panel	Mk 27 Mod 0*
List of drawings	LD 265200
General arrangement	Dr 513496, 7, 8, 9
	Dr 513500, 1
Adapters and attachments	none
Publication references:-	
Instruction handbook	OP 1745
Procurement specifications	none
Installation instructions	OD 7258
Spare parts list	NAVORD 22594
Catalog of Navy Material	none
7.2-inch Projector Charge	OP 1001 (First Rev)
Applicable Ordalts	Ordalt 2608
	Ordalt 2931
	Ordalt 2985
	Ordalt 2990
	Ordalt 3095

*Firing Panel Mk 33 Mod 0 replaces Firing Panel Mk 27 Mod 0 when Ordalt 3153 is accomplished.



Projector Mk 15 Mod 0

PROJECTOR MARK 17 MOD 0

UNDER DEVELOPMENT

DESCRIPTION

Projector Mk 17 Mod 0 is a director-controlled antisubmarine weapon used by destroyer escort type vessels to project a group of 61 explosive charges. Spigots are mounted at fixed angles on a hinged platform. Except for this platform and its supporting structure, the entire weapon is below deck. The platform is mounted on a base supported by a stand on roller bearings. Power drives to rotate the weapon and to elevate the platform are enclosed within a well in ship structure.

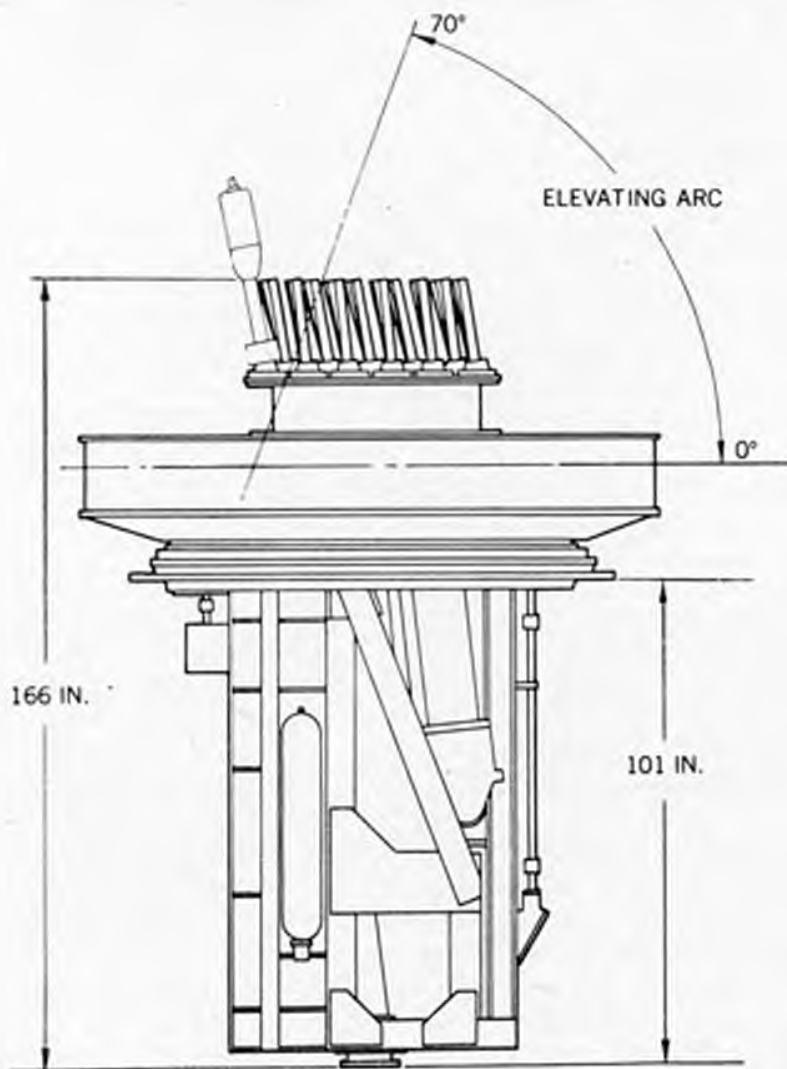
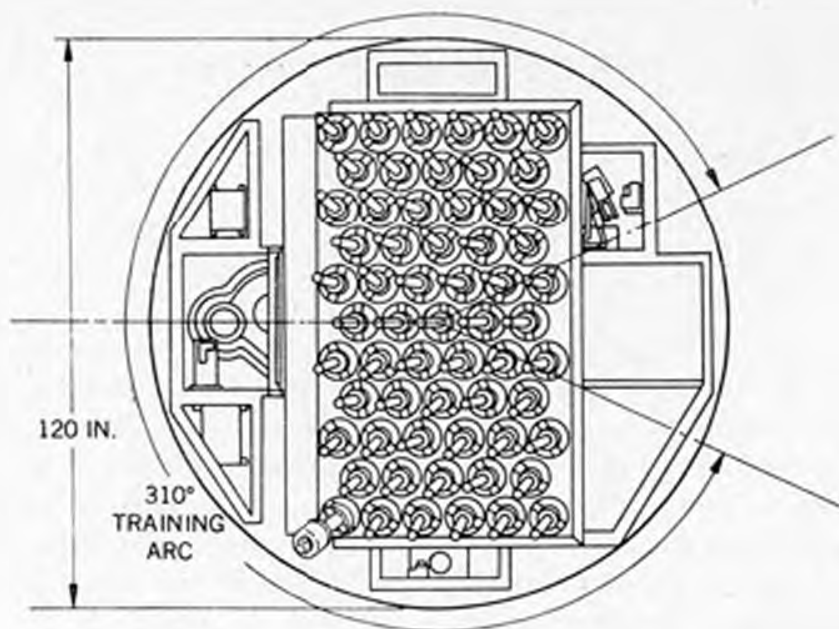
Spigots are of varying lengths to affect the range of individual projector charges. Consequently, a fixed hexagonal pattern is maintained throughout the movement of the platform. Because of the arrangement of the spigots, the weapon not only compensates for ship roll and pitch but also has a limited variation in range to the pattern. Projector charges are fired two at a time in a continuous ripple fire action.

DATA

Number of spigots 61
Ammunition:-
7.2-inch Projector Charge Mk 6
Weight:-
Less ammunition, lb 35,000
Loaded, lb 39,265
Major dimensions:-
Height
above deck (unloaded), in. 65
below deck, in. 101
Diameter, in. 120
Radius of clearance circle, in. 60
Radius of working circle, in. 60
Spigot-laying movements, maximum:-
Mount train, deg 0 to 310
Platform elevation, deg 0 to 70
Training speed, deg per sec 35
Platform elevating speed, deg per sec 20
Firing data:-
Type electric, ripple fire
Power *
Firing interval *
Time, complete ripple salvo, sec 4

Firing data (cont)
Firing arc, deg 60
Range data:-
Pattern hexagonal
Range to pattern center (maximum), yd 222
Firing reaction (maximum per pair of spigots):-
Shear load, lb 116,000
Vertical load, lb 153,000
Ballistic data:-
Initial velocity varies with spigot length
Time of flight *
Range table none
Mount data:-
Components
Projector stand modified 5-in./38 cal single
Train power drive Mk 2 Mod 1
Elevation power drive Mk 2 Mod 1
Firing Panel *
List of drawings none assigned
General arrangement Dr 146208 (Vickers)
Adapters and attachments none
Publication references none

*Data not available



Projector Mk 17 Mod 0

PART 4
RELATED EQUIPMENT

CONTENTS

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Section 4-B	Miscellaneous Equipment	373

SECTION 4-A

CONTROL DEVICES

As used with weapons discussed in this publication, a control device is a unit that is used to control all or part of the firing action of a weapon. Some devices may only initiate the firing of a weapon; other devices may start, interrupt, and stop the firing action; still other control devices are used to regulate the intervals at which a series of projectiles are launched.

The control devices presented here are used with rocket launchers and projectors. The firing of missile launchers and depth charge projectors is usually initiated by a device that is an integral part of the weapon. Similarly, the controls used with aircraft rocket launchers are an integral part of the aircraft weapon control system, and cannot be considered standard control devices.

All controls used to initiate the firing of rocket launchers and projectors have an electrical output. Some of the earliest firing mechanisms, such as Firing Panel Mk 10 and Firing Key Mk 21, are hand-operated magnetos that produce a short pulse of electrical energy. The latest device used to initiate firing of rocket launchers is Firing Panel Mk 26 Mod 4, which is an electrically operated panel that includes a synchro range-indicating unit.

Some of the interim firing panels have included ripple switches, which are used to fire multiple-guide launchers in ripple salvo. Many firing panels have indicator lamps that enable the operator to ascertain the readiness and operating condition of the weapon being controlled. Still other firing panels include circuits that permit the selection of automatic,

manual, or director fire. Many panels include facilities for testing the firing circuits of the weapon prior to firing. A feature that is common to most firing panels is a safety plug, which interrupts the firing circuit when it is removed from the panel.

Firing panels for projectors are similar to those used for rocket launchers, with the exception of some minor modifications.

Intervalometers are control devices that regulate the interval between the closing of a series of firing circuits. These intervalometers may be electromechanical or electronic; either type can be adjusted to regulate the interval. These devices are used in conjunction with firing panels.

Control panels are a recent development that reflect the increasing complexity of weapons. These control panels usually incorporate indicator lamps and switches that enable the operator to observe and control the actions of the weapon. At present, control panels are used in conjunction with firing panels; the control panels do not include facilities for firing weapons except in the case of weapons whose firing circuits are closed by the movements of the launcher. A typical example of this is Rocket Launcher Mk 108. Control Panel Mk 64 and Firing Panel Mk 26 Mod 4 are used to control this weapon. Although the firing action is theoretically initiated by the firing panel, the firing circuit is completed only when the rocket guide is aligned with the position determined by the director. If the control panel operator stops the loading action of the weapon, the firing action will be interrupted.



Firing Panel Mk 24 Mod 0

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Firing Panels

Mk	Mod	Page
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2	0	263
2	1	265
2	2	267
2	3	269
3	0	271
3	1	273
3	2	275
3	3	277
4	0	279
5	0	281
5	1	281
6	0	282
7	0	282
8	0	282
9	0	283
9	1	285
9	2	287
10	0	289
11	0	291
11	1	293
11	2	295
11	3	297
12	0	299
12	1	301
12	2	303
13	0	305
13	1	307
13	2	309
14	0	311
14	1	313
16	0	315
16	1	317
17	0	319
18	0	321
19	0	323
20	0	325

Firing Panels (cont)

Mk	Mod	Page
20	1	327
24	0	329
26	0	331
26	1	333
26	2	335
26	3	337
26	4	339
27	0	341
28	0	343
30	0	345
33	0	347

Control Panels

Mk	Mod	Page
64	0	349
72	0	351

Intervalometers

Mk	Mod	Page
6	0	353
6	1	355
8	0	357
8	1	359

Synchronism Firing Interlocks

Mk	Mod	Page
1	0	361
2	0	363

Firing Keys (Magnetos)

Mk	Mod	Page
21	All	365
22	All	367
25	All	369
26	All	371

FIRING PANEL MARK 1 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 1 Mod 0 is an electrical fire control device used to fire Projector Mk 10 Mod 0. The unit is enclosed in a watertight metal box with a hinged cover, and has a safety plug receptacle, safety plug, ripple switch, three-position switch, two-position switch, calibration rheostat, test indicator, and a removable firing key.

The safety plug is a four-prong, plug-in, connector-type plug that must be inserted into the receptacle before power can be supplied to the firing panel. The ripple switch has a total of 14 positions: 12 numbered positions, one "F" position, and one "C" position. "F" is the ready-to-fire position; "C" is the dead position of the switch after firing is completed. The three-position transfer switch has an "S" (safe) position, an "R" (ready) position, and a "T" (test) position. This transfer switch is inter-

locked with the ripple switch to prevent the panel from being fired unless the ripple switch is in the "F" position. When the transfer switch is in the "S" position, the firing circuit is broken, and the firing key can be inserted into the two-position switch. The position in which the firing key is inserted determines whether alternating-current power or direct-current power is used. When the transfer switch is in the "T" position, each of the 12 firing circuits can be tested by using the calibration rheostat and test indicator. When the transfer switch is in the "R" position and the ripple switch is in the "F" position, the panel is fired by depressing the firing key. This action allows the ripple switch to unwind through the 12 numbered positions.

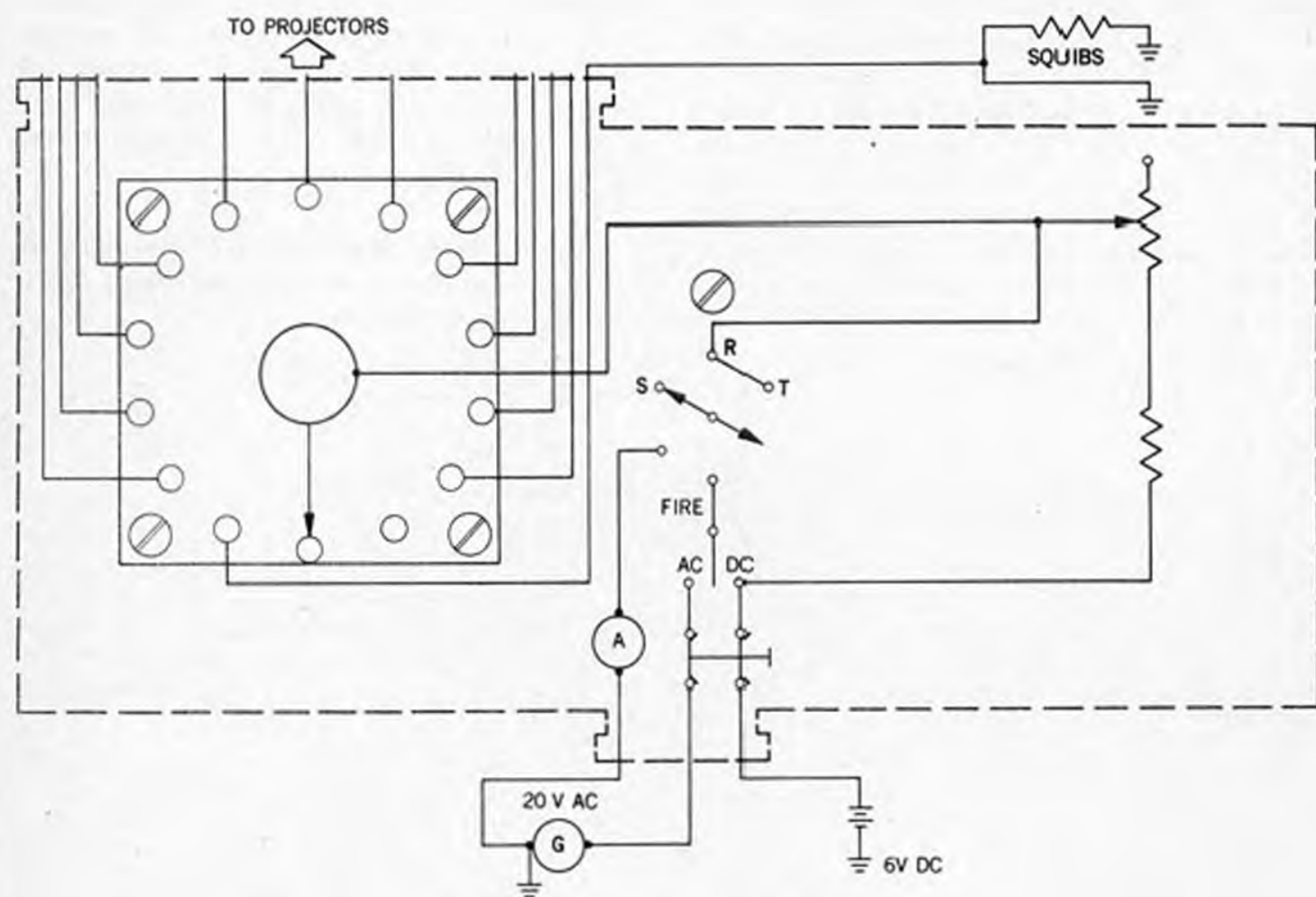
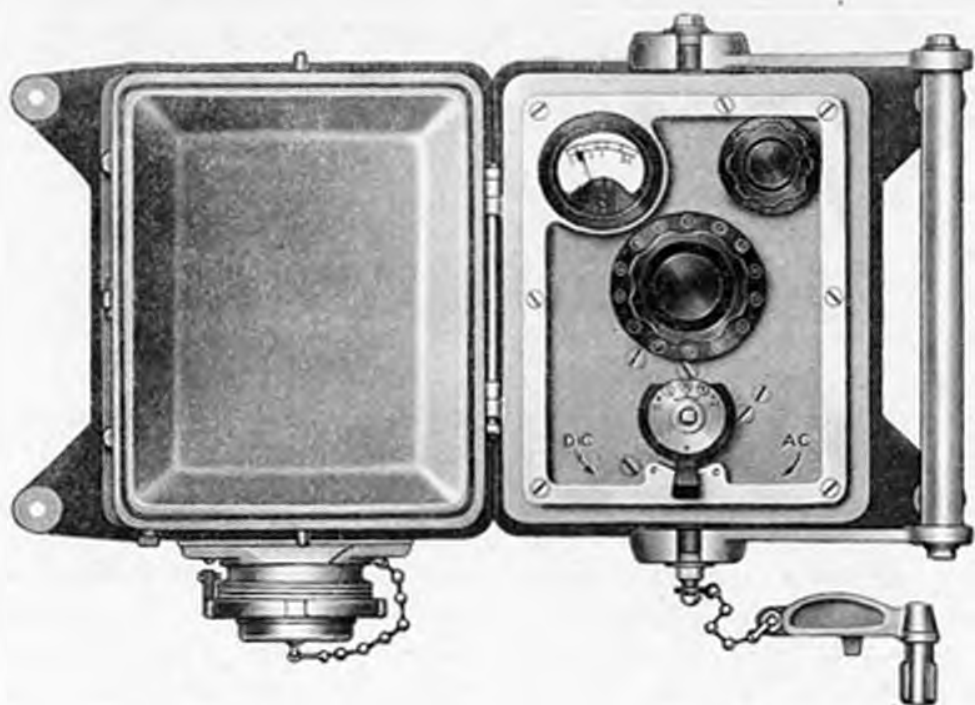
Accomplishment of Ordalts 3172 and 3173 removes provisions for testing the firing circuit with the projector loaded.

DATA

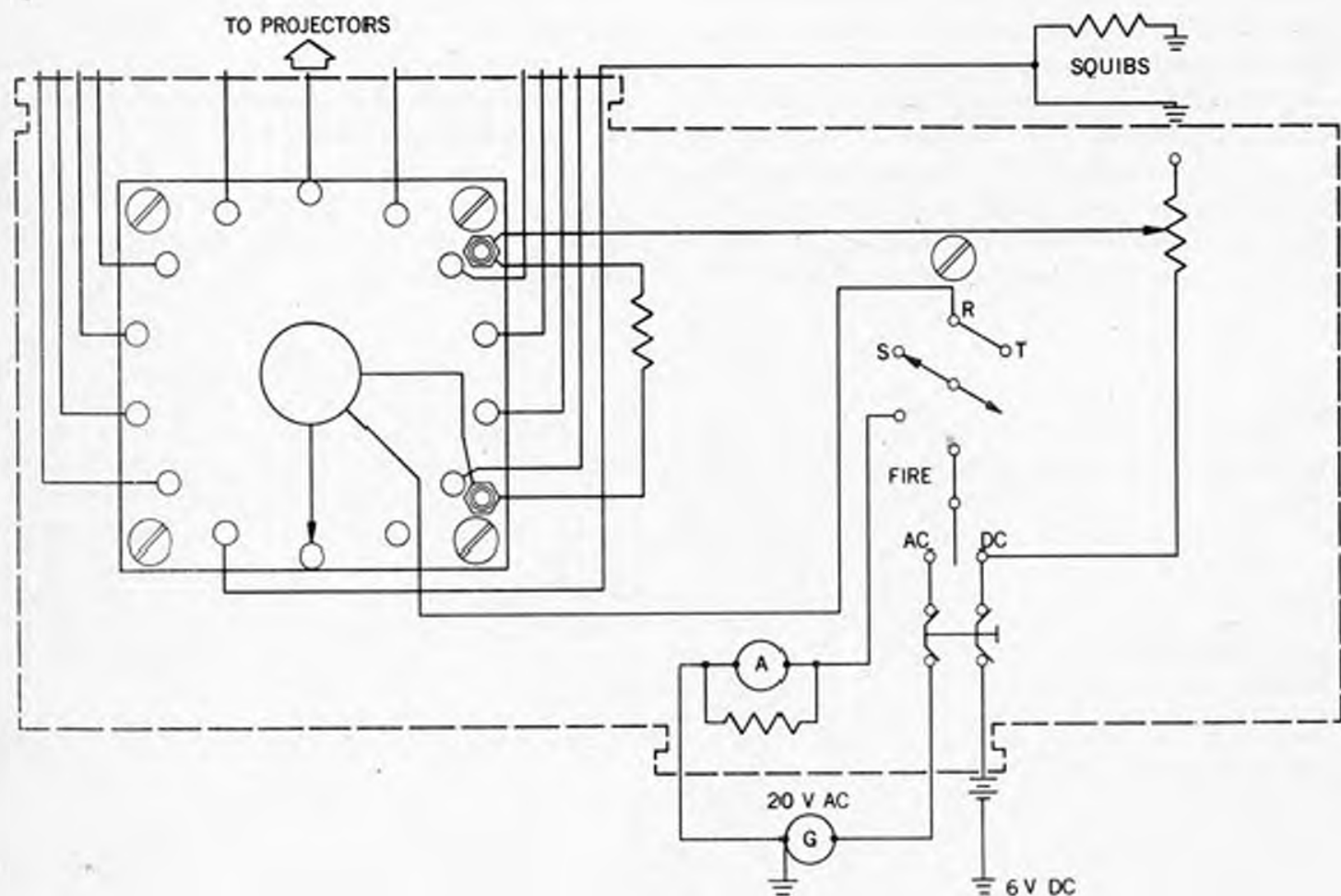
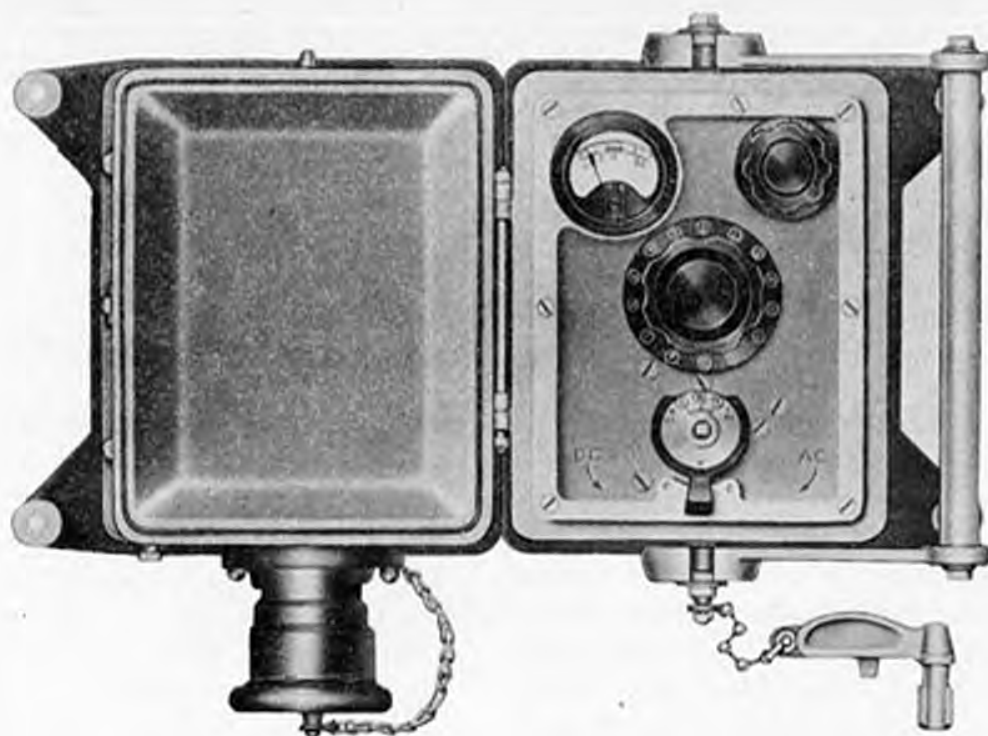
Used with	Projector Mk 10 Mod 0
Voltage	
v AC	20
v DC	6
Number of firing circuits.....	12
Firing interval, sec	0.2*
Type of safety plug	Type A
Mounting	bulkhead

Weight, lb	67
Dimensions, in.	5 x 9 x 19
List of drawings	Sk 91189
General arrangement drawing	Dr 367470
Wiring diagram.....	Dr 367489
Applicable publications	OP 1001
	Ordalts 3172.3

*Estimated



Firing Panel Mk 1 Mod 0



Firing Panel Mk 1 Mod 1

FIRING PANEL MARK 2 MOD 0

OBSOLETE

DESCRIPTION

Firing Panel Mk 5 Mod 0 is an electrical fire control device used to fire Rocket Launcher Mk 20 Mod 0. The panel is designed for firing eight rockets mounted in two banks of four each. The unit is enclosed in a watertight metal box that has a safety plug receptacle, three toggle switches, two indicator lamps, and a push-button firing switch.

The safety plug is a 12-pole, watertight, plug-in, connector-type plug mounted in a separate watertight receptacle outside the panel. One of the toggle switches is a power switch; the other

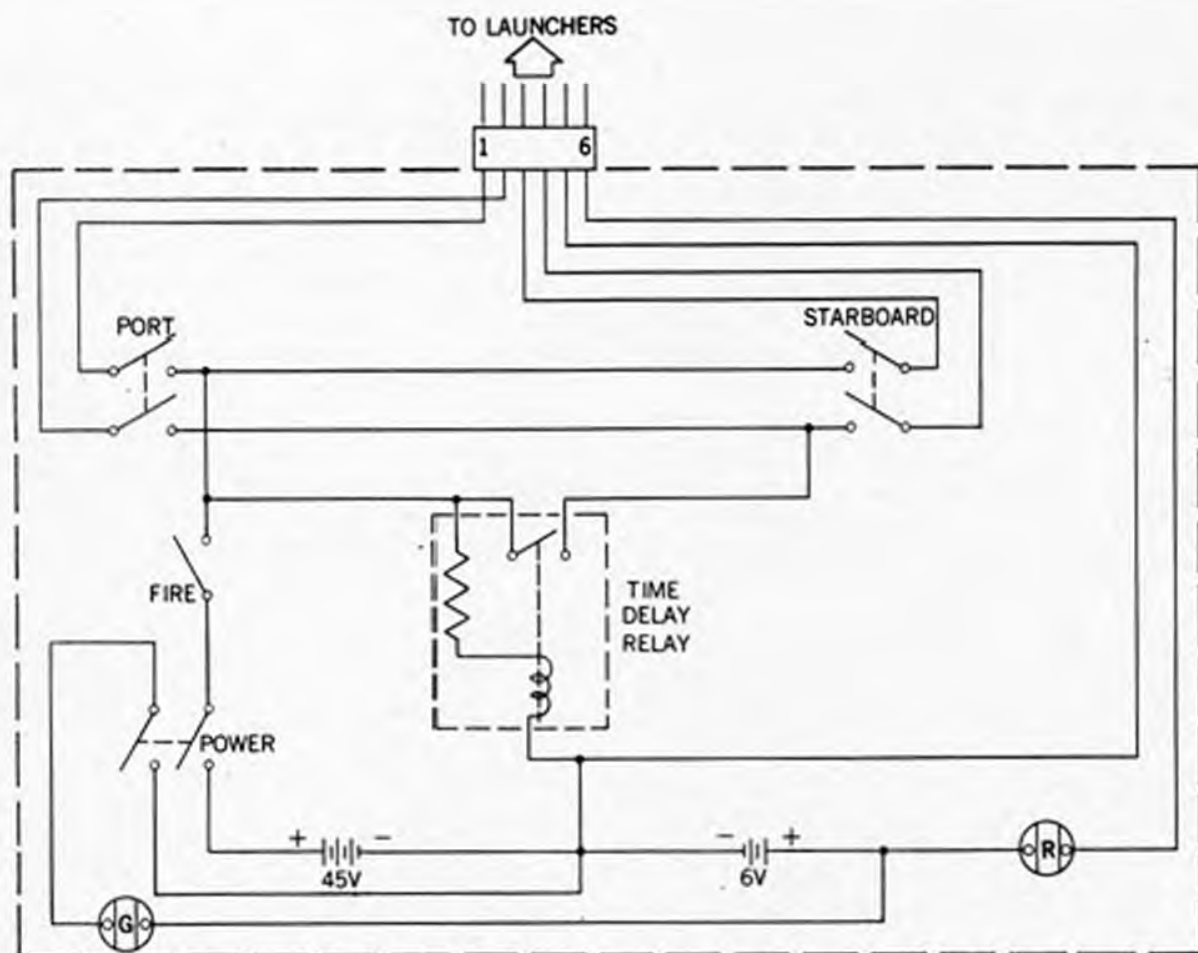
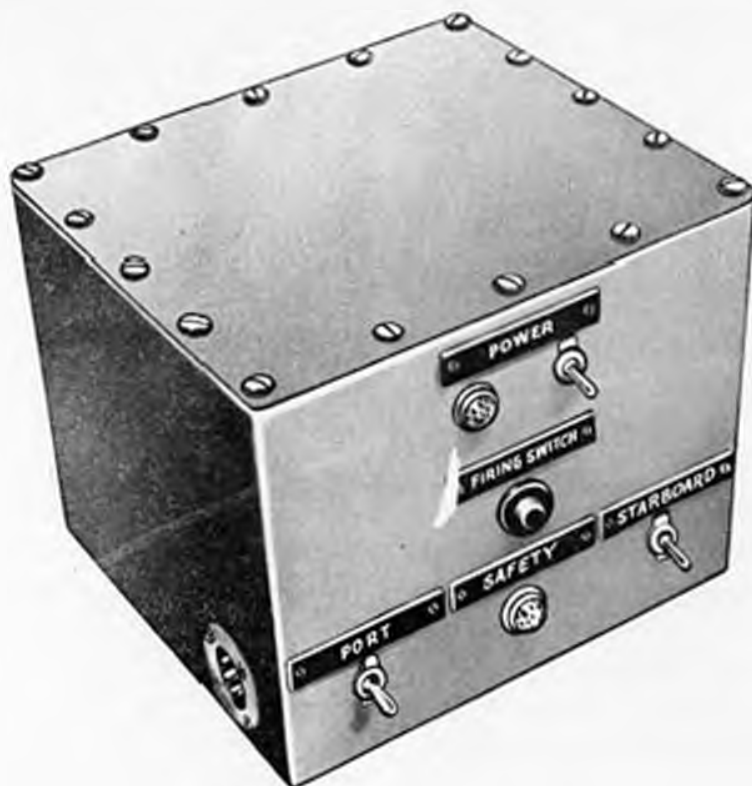
two are port and starboard selector switches. When the safety plug is inserted, the red power-indicator lamp is illuminated. When the power switch is thrown, the green safety-indicator lamp is illuminated. The firing circuit is completed by pushing the firing button after the port or starboard selector switch has been thrown. A time delay relay in the panel supplies firing power to the even-numbered guides in each bank 1/8 second after the odd-numbered guides have been fired.

Electrical power for operation is supplied by batteries in the firing panel.

DATA

Used with Rocket Launcher Mk 20 Mod 0
Voltage:-
 Firing, v DC 45
 Lighting, v DC 6
Number of firing circuits 4
Firing interval, sec 0.12
Type of safety plug Type A

Mounting bulkhead
Weight, lb 15
Dimensions, in. 8 x 8 x 12
List of drawings not assigned
General arrangement drawing not assigned
Wiring diagram not assigned
Applicable publications none



Firing Panel Mk 2 Mod 0

FIRING PANEL MARK 2 MOD 1

DEVELOPMENT DISCONTINUED

DESCRIPTION

Firing Panel Mk 2 Mod 1 was proposed to adapt Firing Panel Mk 2 Mod 0 for use with Rocket Launcher Mk 22 Mod 0. The development

of this firing panel was abandoned in favor of Firing Panel Mk 2 Mod 3.

DATA

Used with	Rocket Launcher Mk 22 Mod 0	Weight	*
Voltage	*	Dimensions	*
Number of firing circuits	4	List of drawings	*
Firing interval	*	General arrangement drawing	*
Type of safety plug	*	Wiring diagram	*
Mounting	*	Applicable publications	none

*Data not available

FIRING PANEL MARK 2 MOD 2

OBSOLETE

DESCRIPTION

Firing Panel Mk 2 Mod 2 is an electrical fire control device used to fire Rocket Launcher Mk 22 Mod 0. The panel is designed for firing eight rockets mounted in two banks of four each. The unit is enclosed in a watertight metal box that has a safety plug receptacle, three toggle switches, two indicator lamps, and a push-button firing switch.

The safety plug is a four-pole, watertight, plug-in, connector-type plug mounted in a separate watertight receptacle outside the panel. One of the toggle switches is a power switch;

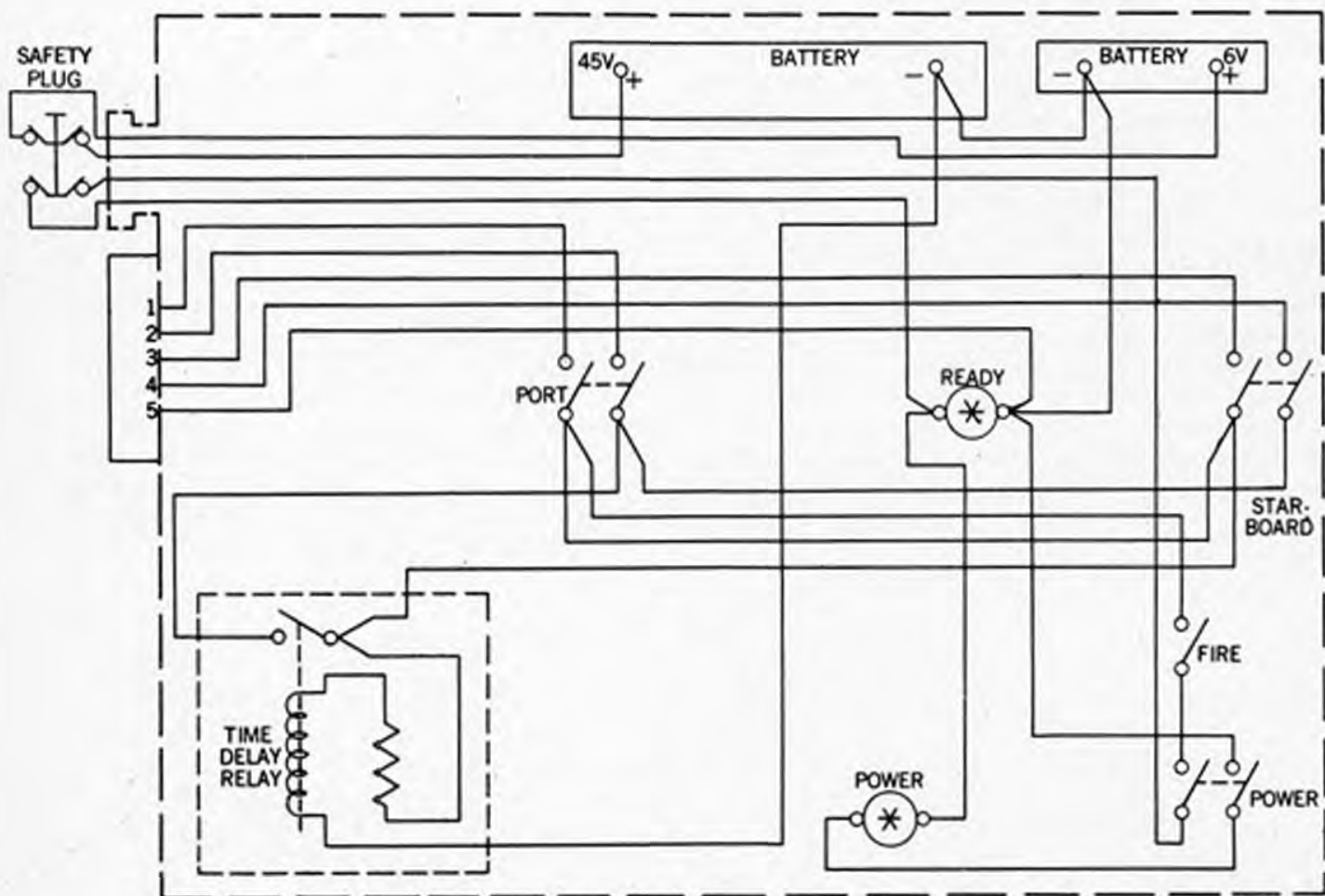
the other two are port and starboard selector switches. When the safety plug is inserted, the red power-indicator lamp is illuminated. When the power switch is thrown, the green safety-indicator lamp is illuminated. The firing circuit is completed by pushing the firing button after the port or starboard selector switch has been thrown. A time delay relay in the panel supplies power to the even-numbered guides in each bank 1/8 second after the odd-numbered guides have been fired.

Electrical power is supplied by batteries in the firing panel.

DATA

Used with	Rocket Launcher Mk 22 Mod 0
Voltage:-	
Firing, v DC	45
Lighting, v DC	6
Number of firing circuits	4
Firing interval, sec	0.12
Type of safety plug	Type E
Mounting	bulkhead

Weight, lb	15
Dimensions, in.	8 x 8 x 12
List of drawings	not assigned
General arrangement drawing.....	not assigned
Wiring diagram	Dr 330312
Applicable publications.....	OP 1002 (First Revision)
	Ordalt 1383
	Ordalt 1803



Firing Panel Mk 2 Mod 2

FIRING PANEL MARK 2 MOD 3

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Panel Mk 2 Mod 3 was proposed to adapt Firing Panel Mk 2 Mod 0 for use with Rocket Launcher Mk 22 Mod 0. The devel-

opment was completed, but the panel was superseded by Firing Panel Mk 3 before manufacture.

DATA

Used with..... Rocket Launcher Mk 22 Mod 0
Voltage:-
 Firing, v DC 45
 Lighting, v DC 6
Number of firing circuits 4
Firing interval, sec 0.12
Type of safety plug.....Type E

Mounting..... bulkhead
Weight, lb 15
Dimensions, in. 8 x 8 x 12
List of drawings.....not assigned
General arrangement drawing..... Dr 875799
Wiring diagram Dr 375802
Applicable publications none

FIRING PANEL MARK 3 MOD 0

OBSOLETE

DESCRIPTION

Firing Panel Mk 3 Mod 0 is an electrical fire control device used to fire Rocket Launcher Mk 20 Mod 0. The panel is designed for firing eight rockets mounted in two banks of four each, but additional banks of four may be connected in parallel with either or both banks. The unit is enclosed in a watertight cast metal housing that has a safety plug receptacle, three push-pull switches, an indicator lamp, and a push-button firing switch.

The safety plug is a four-pole, watertight, plug-in, connector-type plug mounted in a separate watertight receptacle outside the panel.

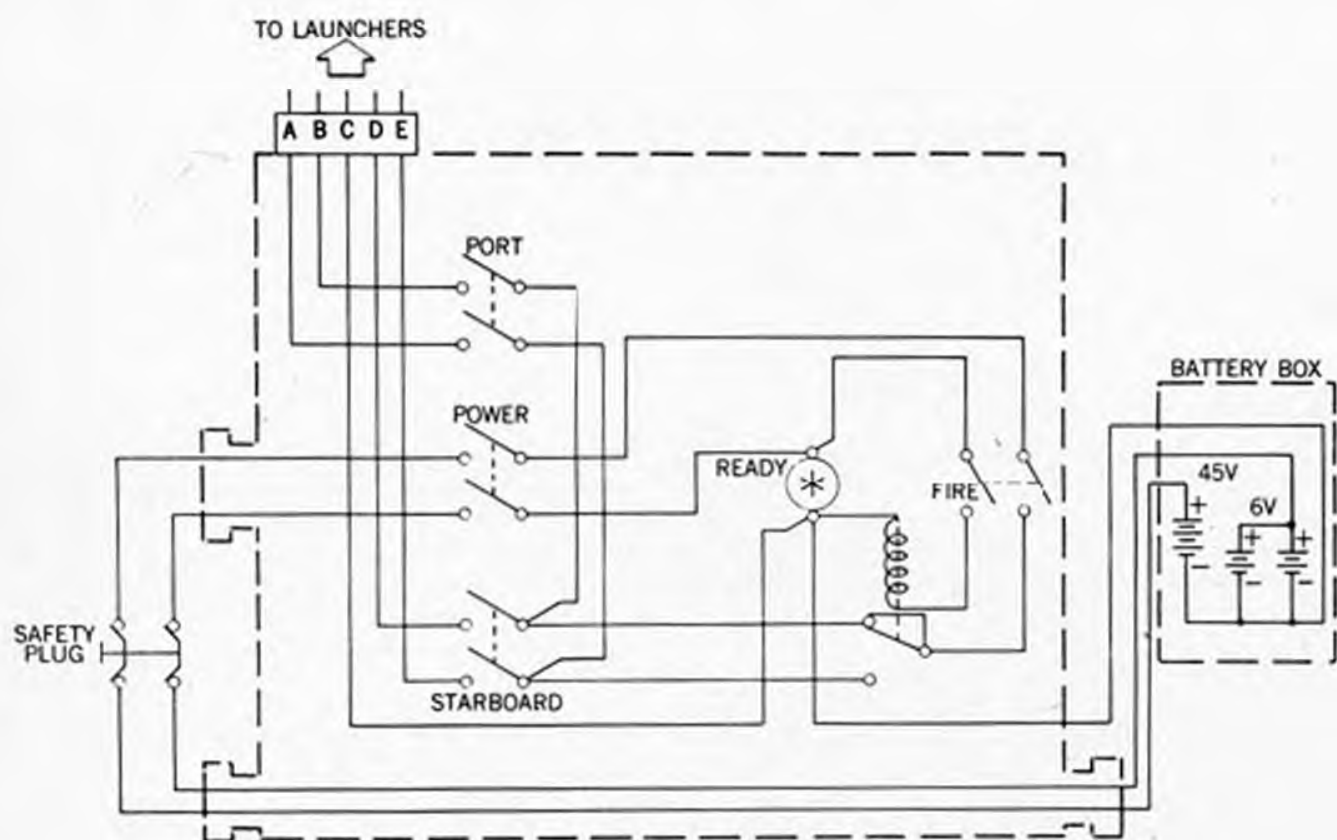
One of the push-pull switches is a power switch; the other two are port and starboard selector switches. When the safety plug is inserted and the power switch is thrown, the ready indicator lamp is illuminated. The firing circuit is completed by pushing the firing button after the port or starboard selector switch has been thrown. A time delay relay in the panel supplies power to the even-numbered guides in each bank 1/8 second after the odd-numbered guides have been fired.

Electrical power is supplied by batteries in an external box.

DATA

Used with Rocket Launcher Mk 20 Mod 0
 Voltage:-
 Firing, v DC 45
 Lighting, v DC 6
 Number of firing circuits 4
 Firing interval, sec 0.12
 Type of safety plug Type E

Mounting bulkhead
 Weight, lb 5
 Dimensions, in. 5 x 7 x 10.5
 List of drawings Sk 165089
 General arrangement drawing Dr 329538
 Wiring diagram Dr 329541
 Applicable publications Ordalt 1803



Firing Panel Mk 3 Mod 0

• FIRING PANEL MARK 3 MOD 1

OBSOLETE

DESCRIPTION

Firing Panel Mk 3 Mod 1 is an electrical fire control device used to fire Rocket Launcher Mk 22 Mod 0. The panel is designed for firing eight rockets mounted in two banks of four each, but additional banks of four may be connected in parallel with either or both banks. The unit is enclosed in a watertight cast metal housing that has a safety plug receptacle, three push-pull switches, an indicator lamp, and a push-button firing switch. Firing Panel Mk 3 Mod 1 is identical with Firing Panel Mk 3 Mod 0 except for the change in selector switch identities.

The safety plug is a four-pole, watertight, plug-in, connector-type plug mounted in a sep-

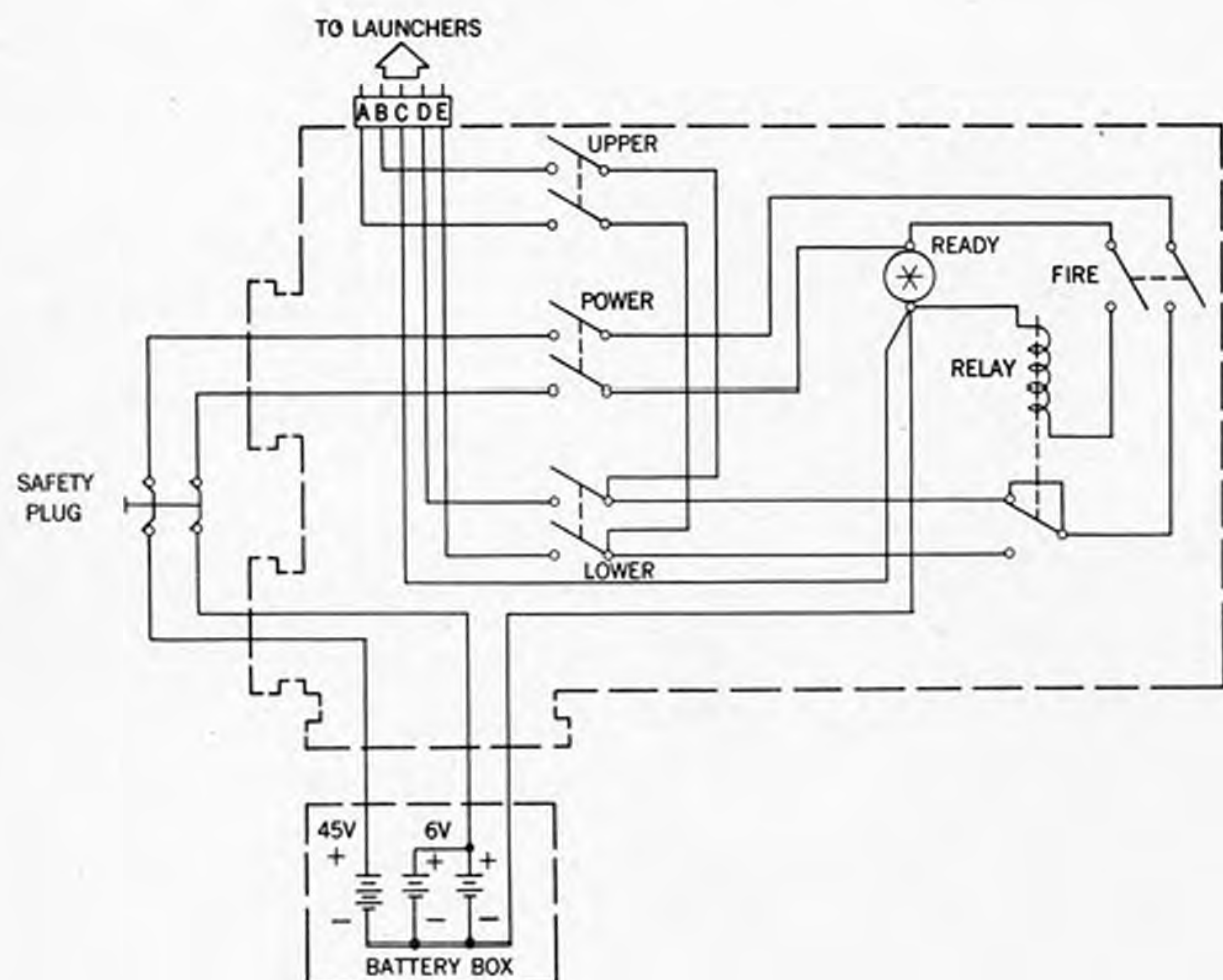
arate watertight receptacle outside the panel. One of the push-pull switches is a power switch; the other two are upper and lower selector switches. When the safety plug is inserted and the power switch is thrown, the ready-indicator lamp is illuminated. The firing circuit is completed by pushing the firing button after the upper or lower selector switch has been thrown. A time delay relay in the panel supplies power to the even-numbered guides in each bank 1/8 second after the odd-numbered guides have been fired.

Electrical power is supplied by batteries in an external battery box.

DATA

Used with	Rocket Launcher Mk 22 Mod 0
Voltage:-	
Firing, v DC	45
Lighting, v DC	6
Number of firing circuits.....	4
Firing interval, sec	0.12
Type of safety plug.....	Type E
Mounting	bulkhead

Weight, lb	5
Dimensions, in.	5 x 7 x 10.5
List of drawings	Sk 139972
General arrangement drawing	Dr 329538
Wiring diagram	Dr 375801
Applicable publications	OP 1002 (First Revision)
	Ordalt 1803



Firing Panel Mk 3 Mod 1

FIRING PANEL MARK 3 MOD 2

IN SERVICE

DESCRIPTION

Firing Panel Mark 3 Mod 2 is an electrical fire control device used to fire Rocket Launcher Mk 20 Mod 0. The panel is designed for firing eight rockets mounted in two banks of four each, but additional banks of four may be connected in parallel with either or both banks. The unit is enclosed in a watertight cast metal housing that has a safety plug receptacle, three push-pull switches, an indicator lamp, and a push-button firing switch. Firing Panel Mk 3 Mod 2 is identical with Firing Panel Mk 3 Mod 0 except for the size of batteries used and for a minor internal wiring change.

The safety plug is a four-pole, watertight, plug-in, connector-type plug mounted in a sep-

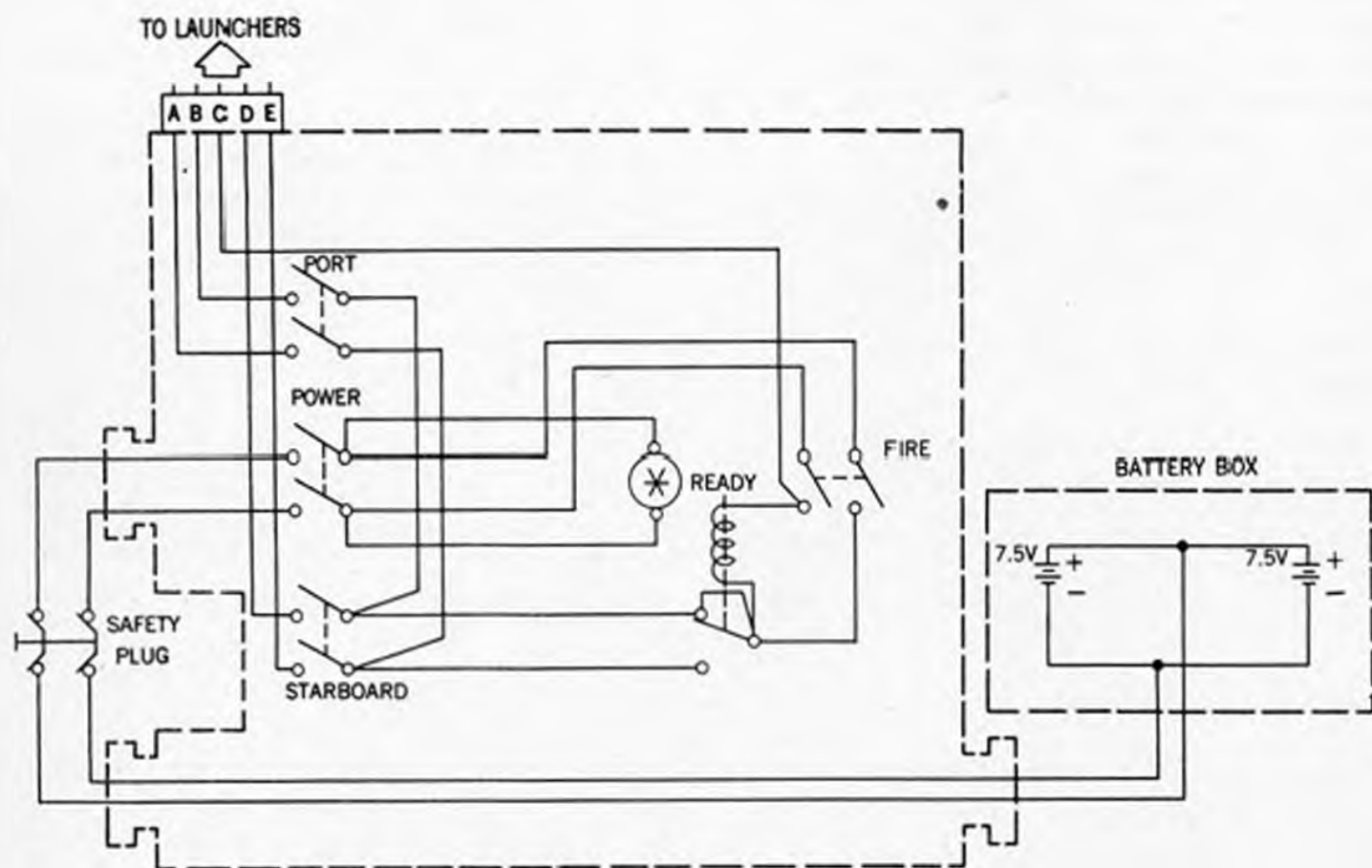
arate watertight receptacle outside the panel. One of the push-pull switches is a power switch; the other two are port and starboard selector switches. When the safety plug is inserted and the power switch is thrown, the ready-indicator lamp is illuminated. The firing circuit is completed by pushing the firing button after the port or starboard selector switch has been thrown. A time delay relay in the panel supplies power to the even-numbered guides in each bank 1/8 second after the odd-numbered guides have been fired.

Electrical firing power is supplied by two 7 1/2-volt batteries in an external battery box. These batteries are connected in parallel.

DATA

Used with Rocket Launcher Mk 20 Mod 0
Voltage, v DC 7.5
Number of firing circuits 4
Firing interval, sec 0.12
Type of safety plug Type E
Mounting bulkhead

Weight, lb 5
Dimensions, in. 5 x 7 x 10.5
List of drawings Sk 139973
General arrangement drawing Dr 329538
Wiring diagram Dr 375807
Applicable publications OP 1002 (First Revision)



Firing Panel Mk 3 Mod 2

FIRING PANEL MARK 3 MOD 3

IN SERVICE

DESCRIPTION

Firing Panel Mk 3 Mod 3 is an electrical fire control device used to fire Rocket Launcher Mk 22 Mod 0. The panel is designed for firing eight rockets mounted in two banks of four each, but additional banks of four may be connected in parallel with either or both banks. The unit is enclosed in a watertight cast metal housing that has a safety plug receptacle, three push-pull switches, an indicator lamp, and a push-button firing switch. Firing Panel Mk 3 Mod 3 is identical with Firing Panel Mk 3 Mod 1 except for the size of the batteries used and for a minor internal wiring change.

The safety plug is a four-pole, watertight, plug-in, connector-type plug mounted in a sep-

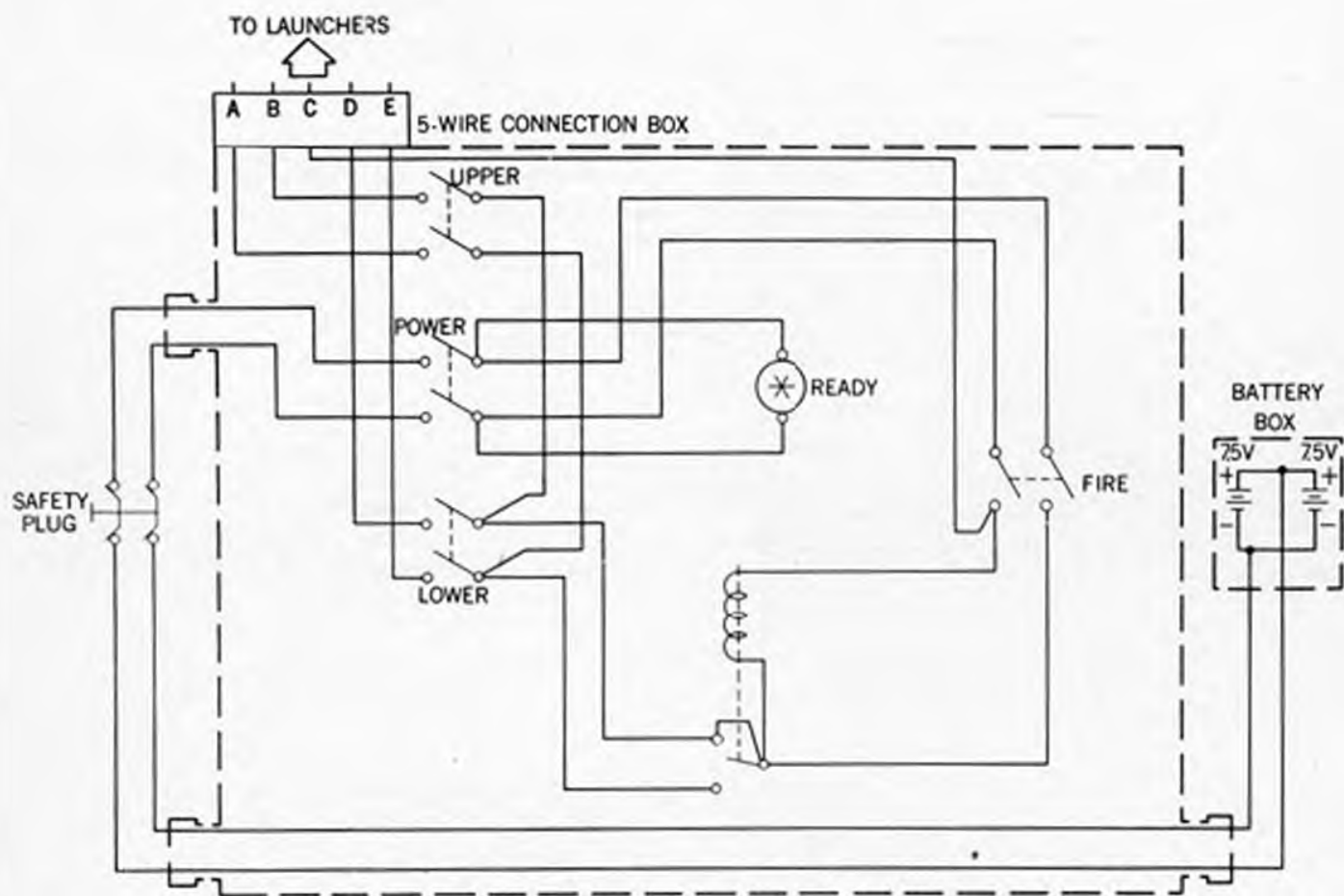
arate watertight receptacle outside the panel. One of the push-pull switches is a power switch; the other two are upper and lower selector switches. When the safety plug is inserted and the power switch is thrown, the ready-indicator lamp is illuminated. The firing circuit is completed by pushing the firing button after the port or starboard selector switch has been thrown. A time delay relay in the panel supplies power to the even-numbered guides 1/8 second after the odd-numbered guides have been fired.

Electrical power is supplied by batteries in an external battery box. These batteries are connected in parallel.

DATA

Used with..... Rocket Launcher Mk 22 Mod 0
Voltage, v DC 7.5
Number of firing circuits 4
Firing interval, sec 0.12
Type of safety plug.....Type E
Mounting.....bulkhead

Weight, lb 5
Dimensions, in. 5 x 7 x 10.5
List of drawings..... Sk 139974
General arrangement drawing..... Dr 329538
Wiring Diagram..... Dr 375807
Applicable publications..... OP 1002 (First Revision)



Firing Panel Mk 3 Mod 3

FIRING PANEL MARK 4 MOD 0

OBSOLETE

DESCRIPTION

Firing Panel Mk 4 Mod 0 is an electrical fire control device used to fire Rocket Launchers Mk 1 Mods 0 and 1. The unit is enclosed in a metal box with a protecting hinged cover, and has two safety plug receptacles, two safety plugs, three toggle switches, an indicator lamp, a rotary circuit selector switch, and a push-button firing switch.

The safety plugs are contact-type plugs mounted in receptacles adjacent to the port and starboard selector toggle switches. When the third toggle switch (the power switch) is thrown,

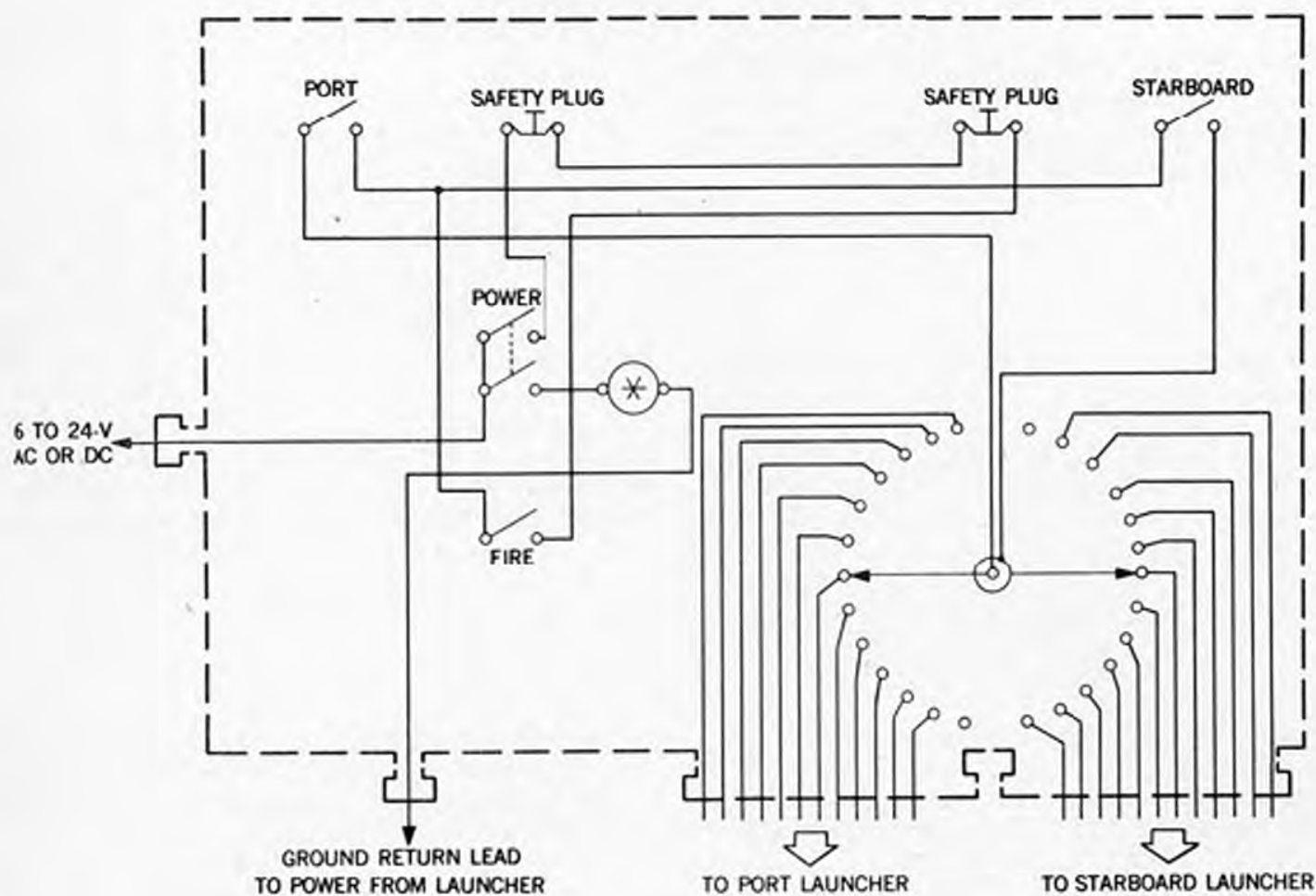
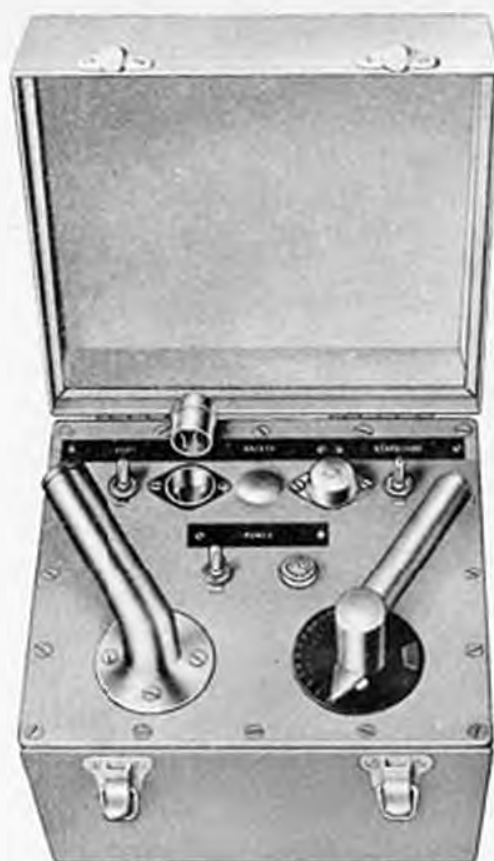
the power pilot light indicator lamp is illuminated, even though the safety plugs are not inserted. The rotary circuit switch has dual contacts so that the two banks of rockets may be fired independently or simultaneously by using the bank selector switches. The firing push-button, mounted in the end of the stationary handle, cannot be used to complete the firing circuit until both safety plugs have been inserted.

Electrical power to the panel is supplied by an external source.

DATA

Used withRocket Launcher Mk 1 Mods 0,1
Voltage, v AC or DC6 to 24
Number of firing circuits24
Firing interval (approx), sec0.5
Type of safety plugType A
Mountingshelf

Weight, lb15
Dimensions, in.10 x 10 x 10
List of drawingsnot assigned
General arrangement drawingnot assigned
Wiring diagramnot assigned
Applicable publications.....OP 1003 (First Revision)



Firing Panel Mk 4 Mod 0

FIRING PANEL MARK 5 MOD 0

DESIGN COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Panel Mk 5 Mod 0 is an experimental design of an electrical fire control device used with two Rocket Launchers Mk 1. The panel has five push buttons labeled POWER, RANGE, PORT, STBD, and FIRE. When the POWER switch is closed, a ready light is illuminated, and power is supplied to the firing and range switches. Closing the range switch fires a rocket to establish range. The port and starboard switches select

the launcher to be fired, while the firing switch closes the firing circuit to the selected solenoid-operated ripple switch. A single firing circuit can then be closed by depressing the RANGE push button. If the FIRE push button is depressed, one of two 15-position ripple switches is actuated to close all firing circuits for the launcher that is selected by depressing either the PORT or STBD push buttons, or both.

DATA

Voltage, v DC 24
 Number of firing circuits 30
 List of drawings none; see Dr 393841

General arrangement drawing none
 Wiring diagram Dr 330322
 Applicable publications none

FIRING PANEL MARK 5 MOD 1

DESIGN COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Panel Mk 5 Mod 1 is similar to Firing Panel Mk 5 Mod 0 but is used with only one launcher. The panel has a three-position switch marked TEST, OFF, DC and a RANGE and FIRE push button. The selector switch selects power

for either a firing circuit test or for firing. Closing the range switch fires a rocket to establish range, while the firing switch initiates the normal firing action.

DATA

Voltage, v DC 12
 Number of firing circuits 15
 List of drawings none; see Dr 393841

General arrangement drawing none
 Wiring diagram Dr 330321
 Applicable publications none

FIRING PANEL MARK 6 MOD 0
DESIGN COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Panel Mk 6 Mod 0 is similar to Firing Panel Mk 5 Mod 1, but has facilities for testing and firing from a remote station.

DATA

Voltage	List of drawings	none; see Dr 393841
v AC	General arrangement drawing	none
v DC	Wiring diagram	Dr 330323
Number of firing circuits	Applicable publications	none

FIRING PANEL MARK 7 MOD 0
DESIGN COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Panel Mk 7 Mod 0 is an experimental design of an electrical fire control device for firing two banks of rocket launchers. The panel has a six-position selector switch; the positions are labeled PORT, STBD, BOTH, TEST, EMER, and OFF. When the switch is in any of the first three positions, firing is controlled by depressing a READY push button that illuminates a power-

available lamp, and then depressing a push button labeled FIRE. For testing purposes, the firing circuits can be energized by throwing the selector switch to the TEST position. The panel is provided with a meter for testing the firing circuits when the selector switch is in the TEST position.

DATA

Voltage, v DC	General arrangement drawing	Dr 393844
Number of firing circuits	Wiring diagram	Dr 393852
List of drawings	Applicable publications	none

FIRING PANEL MARK 8 MOD 0
DESIGN COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Panel Mk 8 Mod 0 is an experimental design of an electrical fire control device for firing two Rocket Launchers Mk 2 Mod 1. The panel has three firing push buttons; each push button closes a circuit within the panel. The firing circuits of the launchers are connected to the panel by seven-pin female plugs; the connections are such that each circuit within the panel supplies energy to the firing circuit of one of the three guides on each launcher. Thus, by depressing all three firing push buttons, firing power is supplied to all six guides of the rocket launchers. This firing panel was abandoned in favor of Firing Key Mk 21.

DATA

Voltage, v DC	General arrangement drawing	none
Number of firing circuits	Wiring diagram	Sk 124379
List of drawings	Applicable publications	none

FIRING PANEL MARK 9 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 9 Mod 0 is an electrical fire control device used to fire 12-guide rocket launchers or 12 single-guide rocket launchers. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, a 12-circuit rotary selector switch, and a push-button firing switch. The panel also has three lugs for mounting launcher cable terminal tubes, and one lug for a drain plug.

The safety plug is a contact-type plug mounted in a receptacle opposite the firing push button. The plug must be inserted for the firing switch to complete a firing circuit. The rotary selector

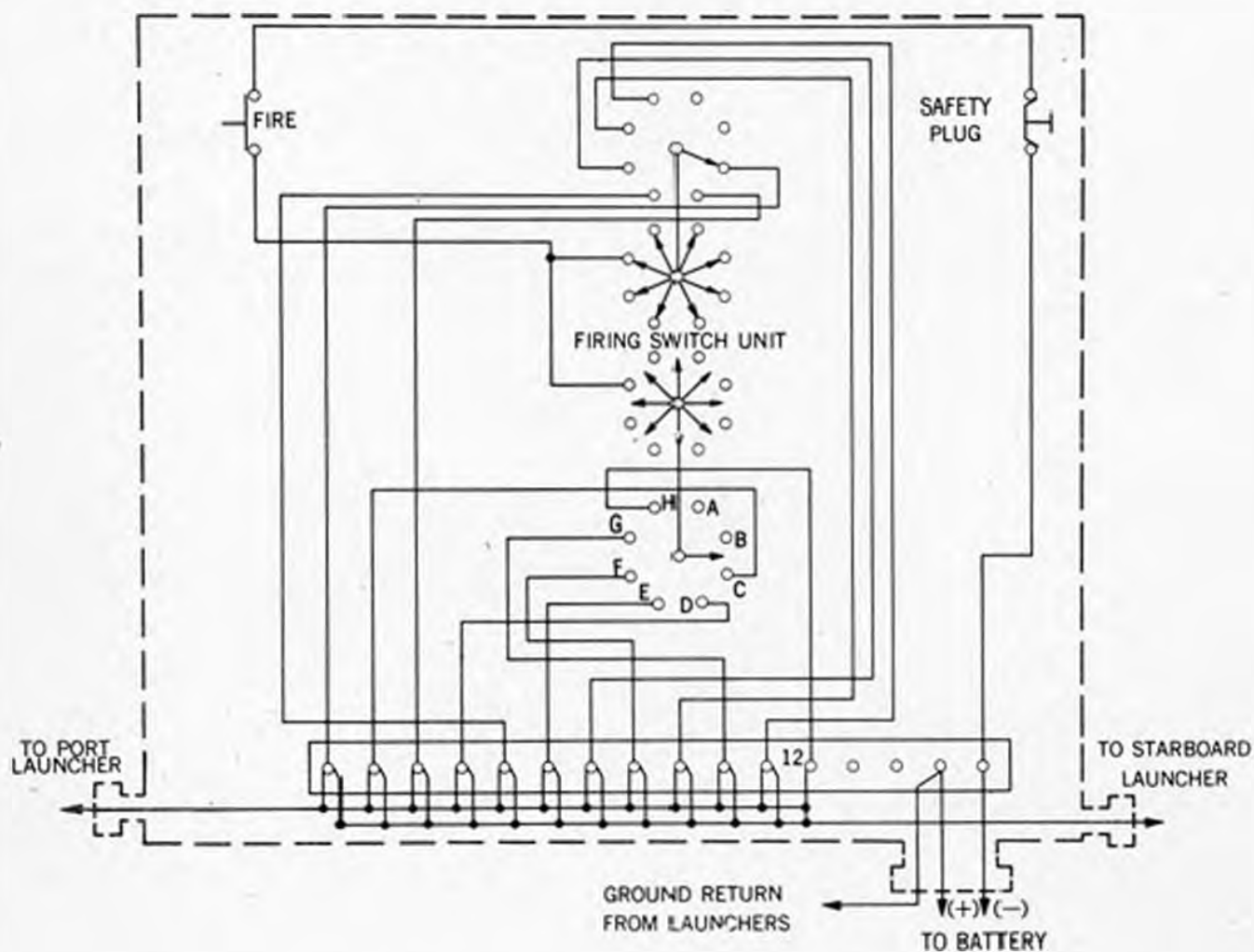
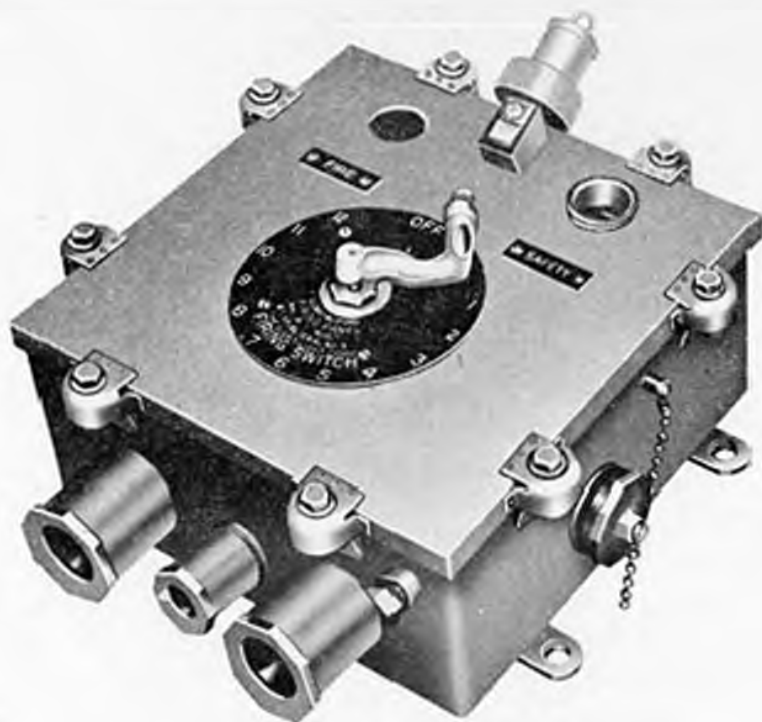
switch has a total of 16 positions: two dead positions between the OFF position and the number 1 position, 12 numbered positions, and one dead position between the number 12 position and the OFF position. This type of panel is easily adaptable to firing large numbers of rockets in ripple salvo. The firing interval is determined by the speed with which the selector switch is rotated, and is limited only by the time required to transmit the firing impulse in any one position.

Electrical power to the panel is supplied by an external source.

DATA

Used with Rocket Launchers Mk 8 Mods 0,1;
Mk 7 (Exp)
Voltage, v AC or DC 6 to 24
Number of firing circuits 12
Firing interval (approx), sec 0.4
Type of safety plug Type A
Mounting bulkhead

Weight, lb 17
Dimensions, in. 6.5 x 12 x 13
List of drawings Sk 109072
General arrangement drawing Dr 422358
Wiring diagram Dr 422362
Applicable publications OP 1173
OP 1131



Firing Panel Mk 9 Mod 0

FIRING PANEL MARK 9 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 9 Mod 1 is an electrical fire control device used to fire eight-guide rocket launchers or eight single-guide rocket launchers. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, a 12-circuit selector switch, and a push-button firing switch. The panel also has three lugs for mounting launcher cable terminal tubes, and one lug for a drain plug. Firing Panel Mk 9 Mod 1 is identical with Firing Panel Mk 9 Mod 0 except that only eight of the 12 circuits on the selector switch are firing circuits; the first four are designed to fire four individual rockets for ranging purposes.

The safety plug is a contact-type plug mounted in a receptacle opposite the firing button. The

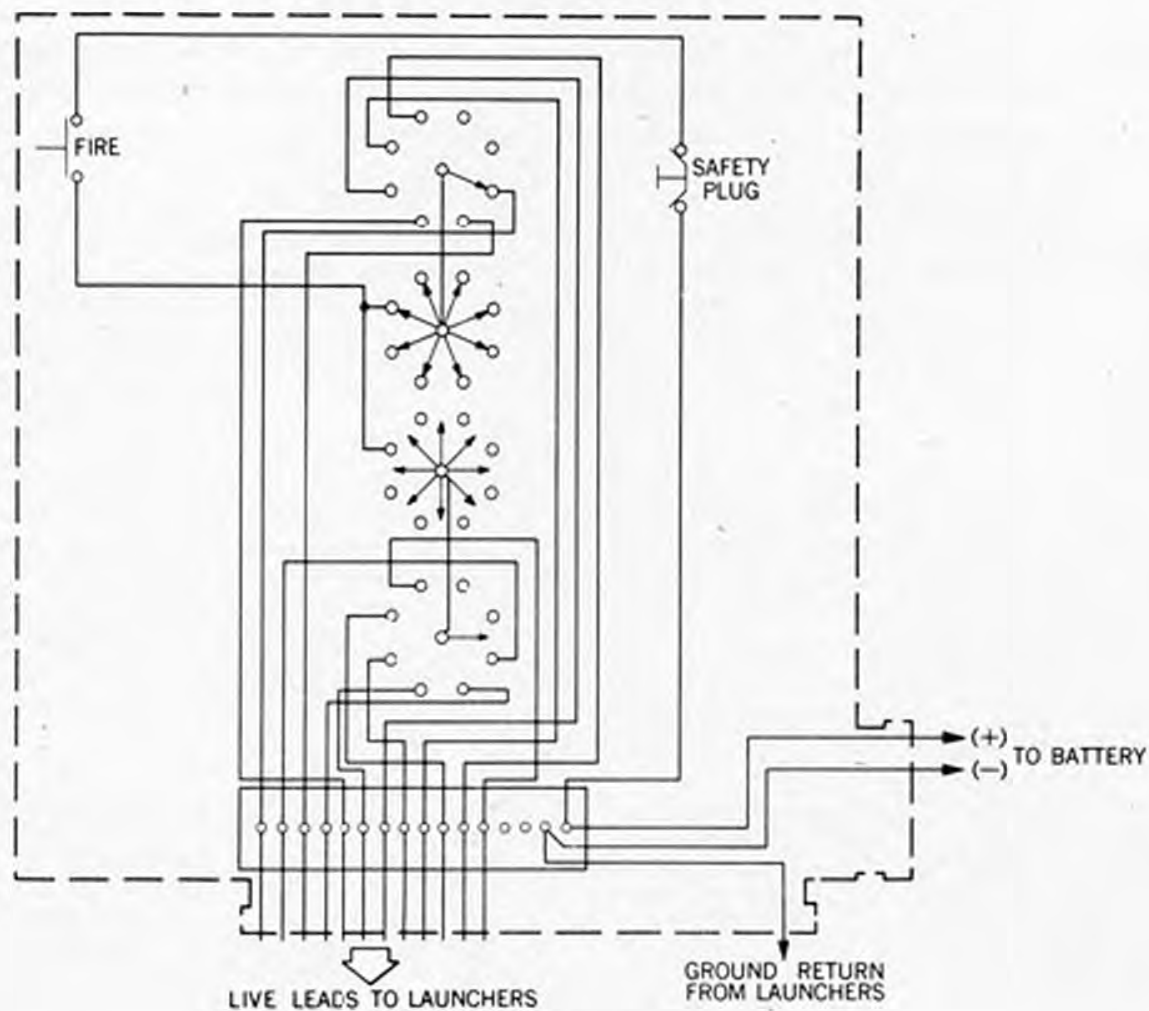
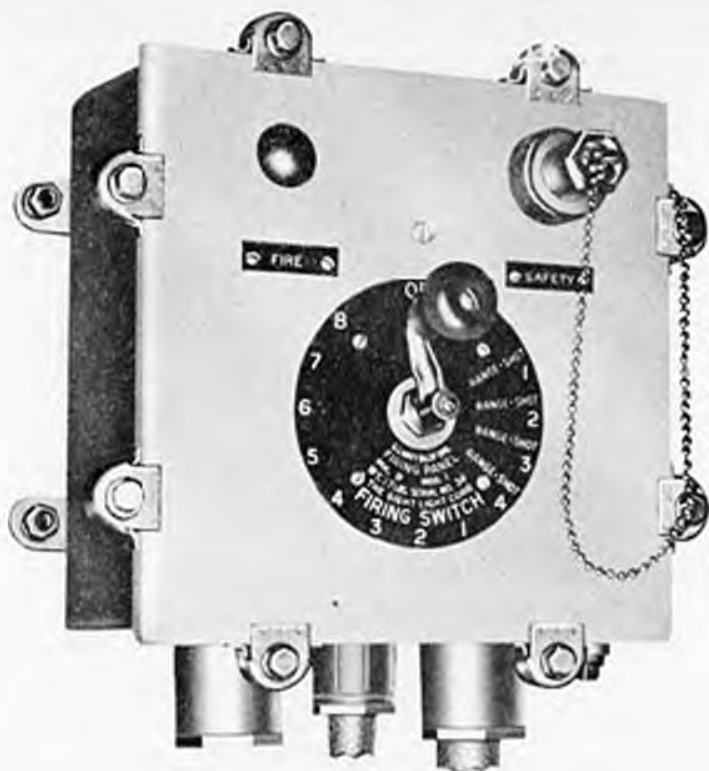
plug must be inserted for the firing switch to complete either a range-shot circuit or a firing circuit. The rotary selector switch has a total of 16 positions: two dead positions between the OFF position and the first range-shot position, four range-shot positions, eight firing circuit positions, and one dead position between the last firing circuit position and the OFF position. The firing interval is determined by the speed with which the selector switch is rotated through the firing positions, and is limited only by the time required to transmit the firing impulse in any one position.

Electrical power to the panel is supplied by an external source.

DATA

Used with Rocket Launchers Mk 9 Mod 0; Mk 24
(Exp); Mk 24 Mods 1, 2, and 3;
Mk 50 Mods 0, 1; Mk 51 Mod 0
Voltage, v AC or DC 6 to 24
Number of firing circuits 8
Number of range-shot circuits 4
Firing interval (approx), sec 0.4
Type of safety plug Type A
Mounting bulkhead

Weight, lb 17
Dimensions, in. 6.5 x 12 x 13
List of drawings Sk 165742
General arrangement drawing Dr 423671
Wiring diagram Dr 563087
Applicable publications OP 1003 (First Revision)
OP 1173
OP 1131



Firing Panel Mk 9 Mod 1

FIRING PANEL MARK 9 MOD 2

IN SERVICE

DESCRIPTION

Firing Panel Mk 9 Mod 2 is an electrical fire control device used to fire eight-guide rocket launchers or eight single-guide rocket launchers. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, an eight-circuit rotary selector switch, and a push-button firing switch. The panel also has three lugs for mounting launcher cable terminal tubes, and one lug for a drain plug. Firing Panel Mk 9 Mod 2 is identical with Firing Panel Mk 9 Mod 1 except that the four range-shot circuits have been eliminated.

The safety plug is a contact-type plug mounted in a receptacle opposite the firing push button.

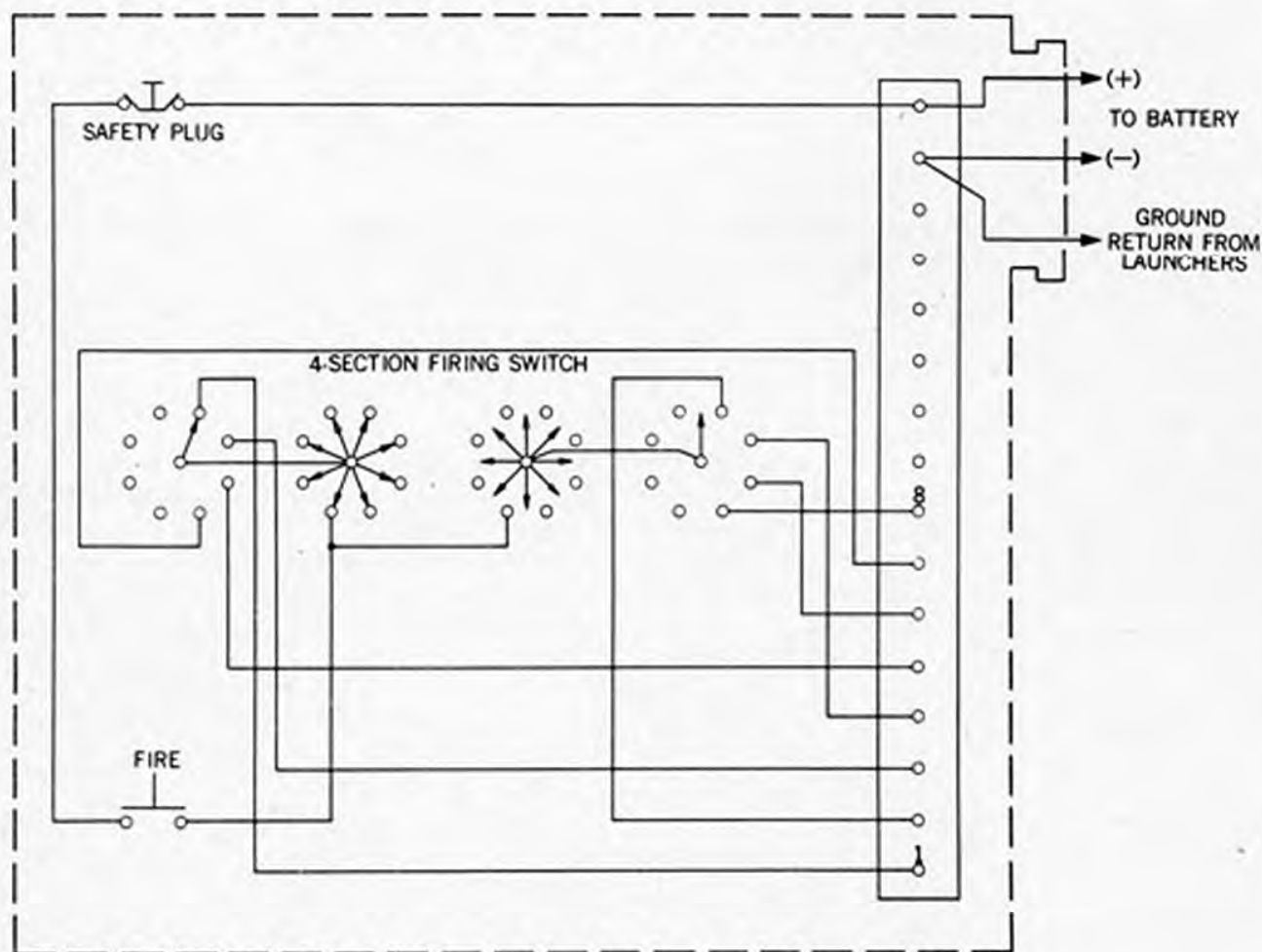
The plug must be inserted for the firing switch to complete the firing circuit. The rotary selector switch has a total of 16 positions: three dead positions between the OFF position and the number 1 position, eight numbered positions, and four dead positions between the number 8 position and the OFF position. This type of panel is easily adaptable to firing rockets in ripple salvo. The firing interval is determined by the speed with which the selector switch is rotated, and is limited only by the time required to transmit the firing impulse in any one position.

Electrical power to the panel is supplied by an external source.

DATA

Used with Rocket Launchers Mk 9 Mod 0;
Mk 24 All Mods
Voltage, v AC or DC 6 to 24
Number of firing circuits 8
Firing interval (approx), sec 0.4
Type of safety plug Type A
Mounting bulkhead

Weight, lb 17.5
Dimensions, in. 6.5 x 12 x 13
List of drawings Sk 109347
General arrangement drawing Dr 423671
Wiring diagram Dr 422364
Applicable publications OP 1173
OP 1131



Firing Panel Mk 9 Mod 2

FIRING PANEL MARK 10 MOD 0

OBSOLETE

DESCRIPTION

Firing Panel Mk 10 Mod 0 is a wooden box that contains a 10-cap blasting machine, two connection boards, a cable, and two circuit testers. One of the connection boards is carried in an upright position in the box; the other board is stowed on its side. The panel can be used to fire Rocket Launcher Mk 6 Mod 0.

The blasting machine is a standard hand-powered magneto that is enclosed in a waterproof metal case. A wooden handle on the machine

can be detached for safety while the equipment is being set up. When this handle is attached to the machine and is given a quick clockwise twist, current for firing as many as 10 series-connected blasting caps is generated. The circuit testers are used for test purposes prior to firing.

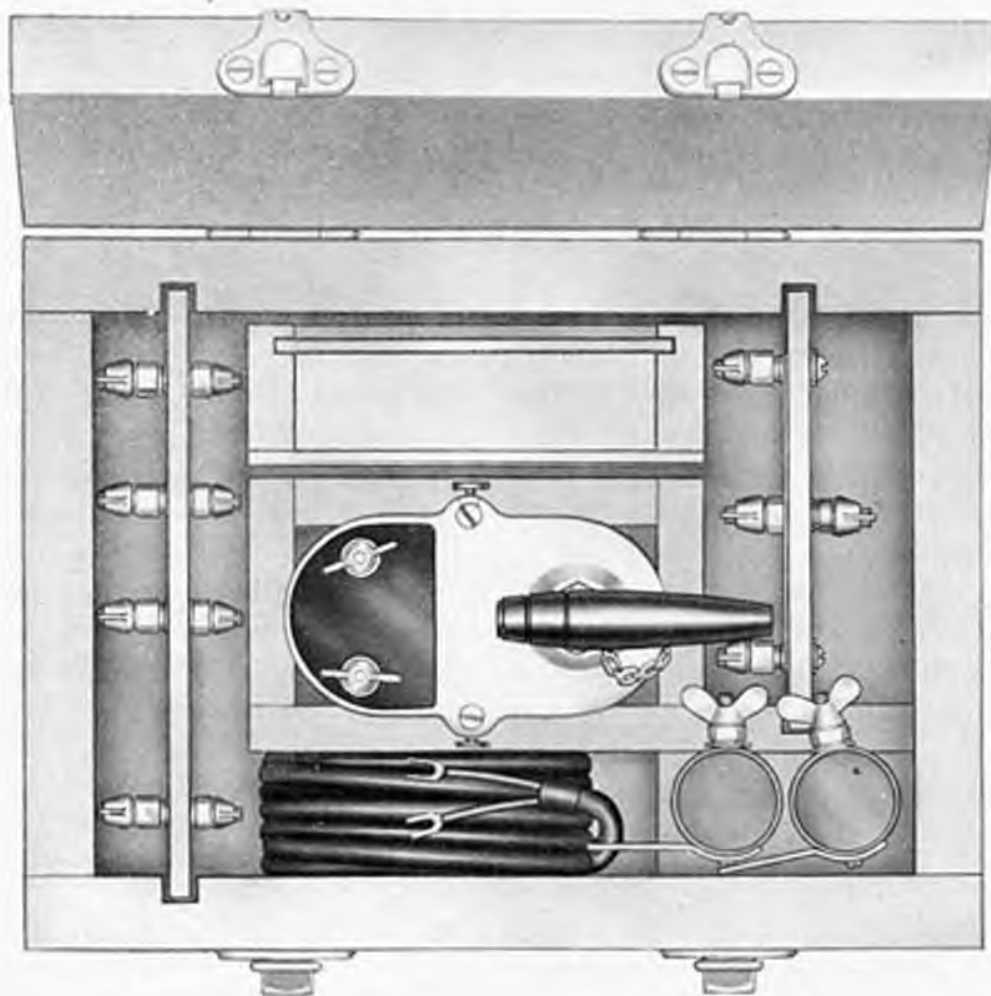
A carrying strap can be attached to the blasting machine when the machine is to be carried outside of the box. The entire unit can be carried by a carrying handle on top of the box.

DATA

Used with Rocket Launcher Mk 6 Mod 0
Voltage, v DC 5*
Number of firing circuits 1
Type of safety plug none
Mounting portable
Weight, lb 10*

Dimensions, in. 6 x 10.6 x 7.6
List of drawings none
General arrangement drawing Dr 424898,899,900
Wiring diagram none
Applicable publications OP 1130

*Estimated



Firing Panel Mk 10 Mod 0

FIRING PANEL MARK 11 MOD 0

OBSOLETE

DESCRIPTION

Firing Panel Mk 11 Mod 0 is an electrical fire control device used to fire Rocket Launcher Mk 7 Mod 0. The unit is enclosed in two watertight metal boxes. One of the boxes, which is oblong in shape, contains three diaphragm-covered push buttons. One of these buttons is a power button; the other two are selector firing switches. The second of the two boxes, which is square in shape, contains a safety plug receptacle and safety plug. The safety plug, which is of the plug-in connector type, must be inserted into the receptacle before the firing circuits can be

completed. The receptacle is provided with a watertight screw cover for use when the safety plug is not in place.

Firing Panel Mk 11 Mod 0 is designed to be used with two automatic launchers, but additional launchers can be connected in parallel if desired. To fire a launcher both the power button and the circuit button must be depressed simultaneously. Electrical power is supplied by an external source.

DATA

Used with Rocket Launcher Mk 7 Mod 0
Voltage, v AC or DC 6 to 24
Number of firing circuits 2
Firing interval determined by launcher
Type of safety plug Type A
Mounting bulkhead

Weight, lb 7
Dimensions, in. 4 x 6 x 14
List of drawings not assigned
General arrangement drawing Dr 422573
Wiring diagram none
Applicable publications none



Firing Panel Mk 11 Mod 0

FIRING PANEL MARK 11 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 11 Mod 1 is an electrical fire control device used to fire Rocket Launchers Mk 7 Mod 0 and Mk 51 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, safety plug, dummy receptacle, three diaphragm-covered push buttons, an indicator lamp, and a drain plug.

The safety plug, which is of the plug-in connector type, is mounted in the dummy receptacle when not in use. The safety plug receptacle has a watertight cover that is placed on the dummy receptacle when the safety plug is in use. One of the push buttons is a power button; the other

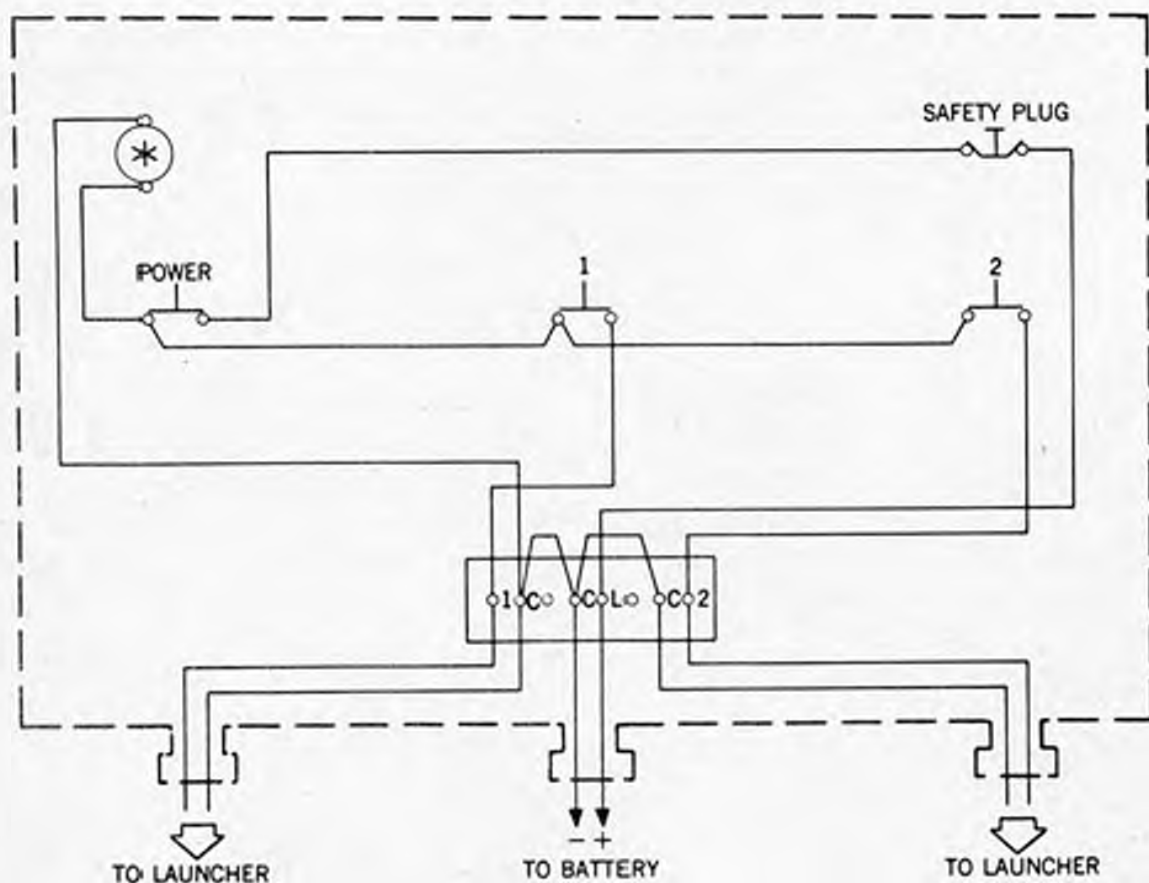
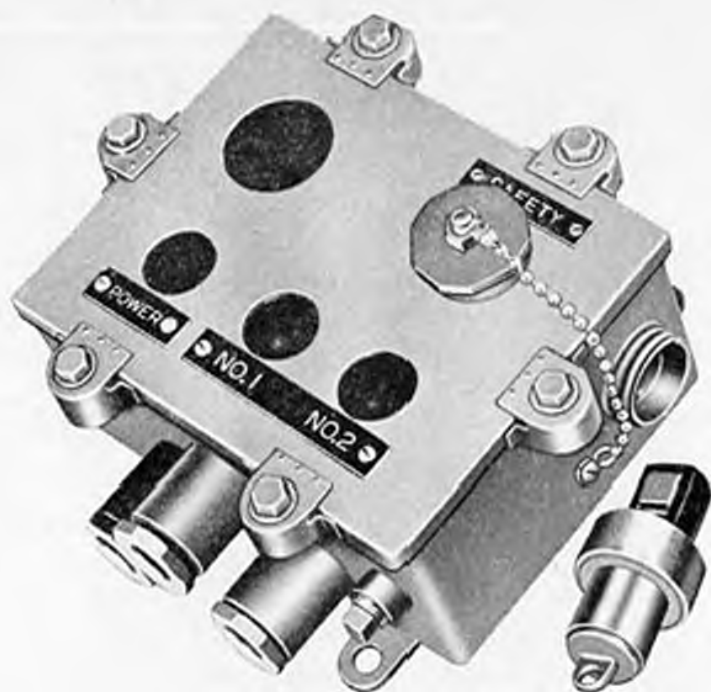
two are selector firing switches. The power indicator lamp, which is mounted in a sealed red glass window on the metal box, is illuminated when the power button is depressed and the safety plug is in place.

Firing Panel Mk 11 Mod 1 is designed to be used with two automatic rocket launchers; additional launchers can be connected in parallel if desired. To fire a launcher, the power button and one of the selector firing buttons must be depressed simultaneously. The push buttons and safety plug interrupt the positive power supply. Electrical power is supplied by an external source.

DATA

Used with..... Rocket Launcher Mk 7 Mod 0
 Rocket Launcher Mk 51 Mod 0
 Voltage, v AC or DC 6 to 24
 Number of firing circuits 2
 Firing interval.....determined by launcher
 Type of safety plug Type A
 Mounting..... bulkhead or portable

Weight, lb	9
Dimensions, in.	4.5 x 9 x 9
List of drawings	Sk 109099
General arrangement drawing	Dr 422579
Wiring diagram	Dr 422583
Applicable publications	OP 1131



Firing Panel Mk 11 Mod 1

FIRING PANEL MARK 11 MOD 2
IN SERVICE

DESCRIPTION

Firing Panel Mk 11 Mod 2 is an electrical fire control device used to fire Rocket Launchers Mk 7 Mod 0 and Mk 51 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, safety plug, three diaphragm-covered push buttons, an indicator lamp, and a drain plug.

The safety plug, which is of the bayonet-locking, double-action type, contains a spring-actuated push button on the top of the safety plug that must be depressed in the same manner as a firing push button. One of the diaphragm-covered push buttons on the firing panel is a power button; the

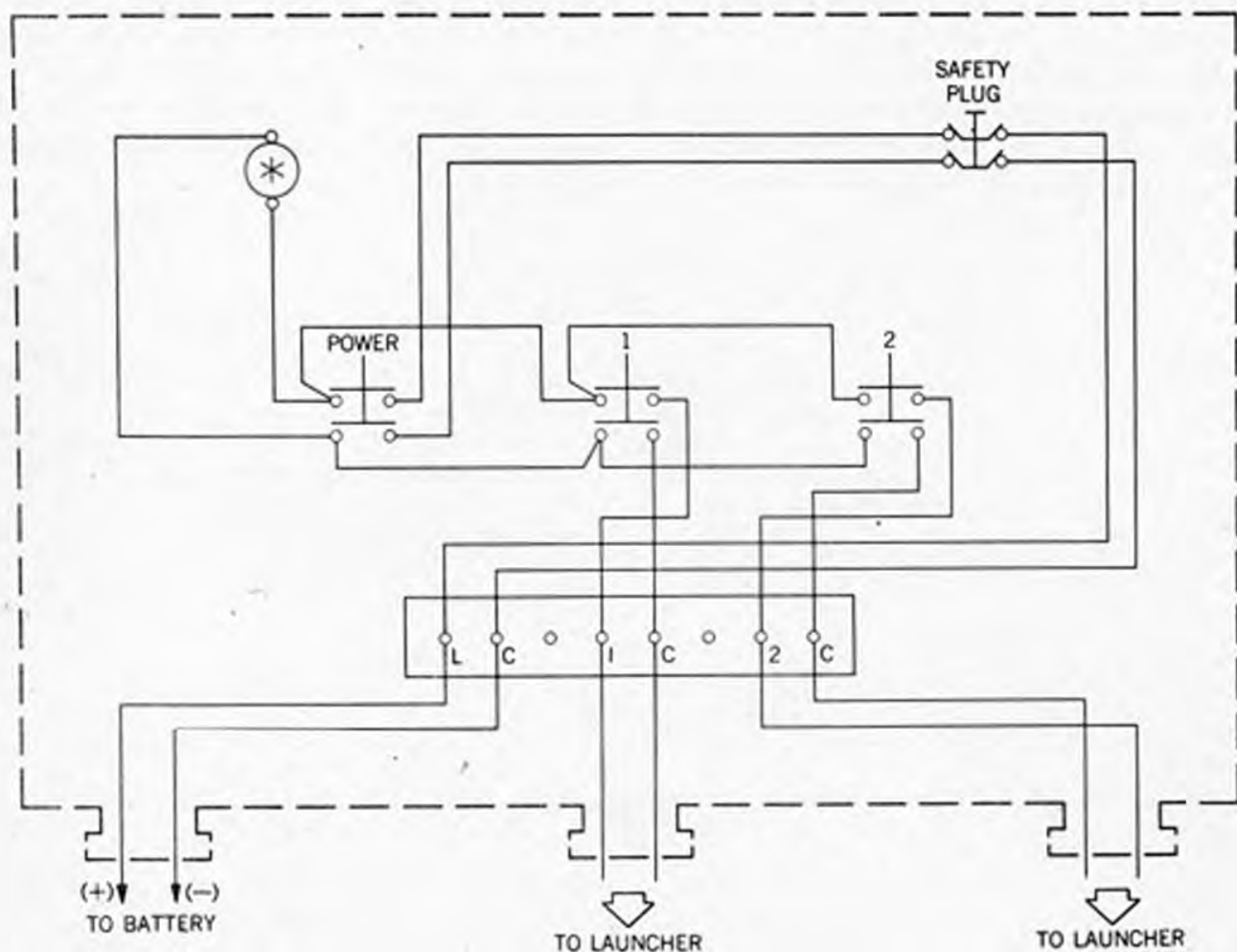
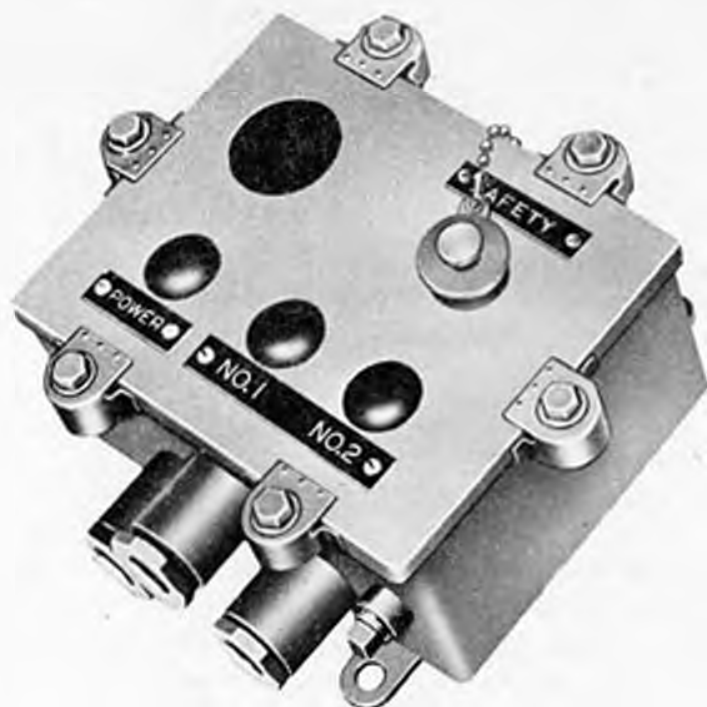
other two are selector firing switches. The power indicator lamp, which is mounted in a sealed glass window, is illuminated when the power button is depressed and the safety plug is inserted and depressed.

Firing Panel Mk 11 Mod 2 differs from Firing Panel Mk 11 Mod 1 in that it utilizes a different type of safety plug and has no dummy safety plug receptacle. Also, the safety plug and push buttons interrupt both positive and negative power source leads. Electrical power is supplied by an external source.

DATA

Used with	Rocket Launcher Mk 7 Mod 0	Weight, lb	9*
	Rocket Launcher Mk 51 Mod 0	Dimensions, in.	4.5 x 9 x 9*
Voltage, v AC or DC	6 to 24	List of drawings	Sk 165056
Number of firing circuits	2	General arrangement drawing	Dr 439207
Firing interval	determined by launcher	Wiring diagram	Dr 439206
Type of safety plug	Type B	Applicable publications	none
Mounting	bulkhead		

*Estimated



Firing Panel Mk 11 Mod 2

FIRING PANEL MARK 11 MOD 3

IN SERVICE

DESCRIPTION

Firing Panel Mk 11 Mod 3 is an electrical fire control device used in conjunction with Firing Panel Mk 28 Mod 0. Firing Panel Mk 11 Mod 3 is enclosed in two watertight metal boxes that are connected by a conduit. The larger of the boxes has a safety plug receptacle, safety plug, three diaphragm-covered push buttons, an indicator lamp, and a drain plug. This box is similar to Firing Panel Mk 11 Mod 2 except for the addition of the connecting conduit and a curved terminal tube on the side of the box. The smaller of the two boxes contains a single diaphragm-covered push button.

The safety plug, which is of the bayonet-locking, double-action type, contains a spring-actuated

push button that must be depressed in the same manner as a firing push button before the firing circuit is closed. One of the push buttons in the larger box is a power button; the other two are selector firing switches. The power indicator lamp, which is mounted in a sealed glass window, is illuminated when the power button is depressed and the safety plug is inserted and depressed. The push button in the smaller box is an abeam firing switch that is used to fire both port and starboard launchers simultaneously.

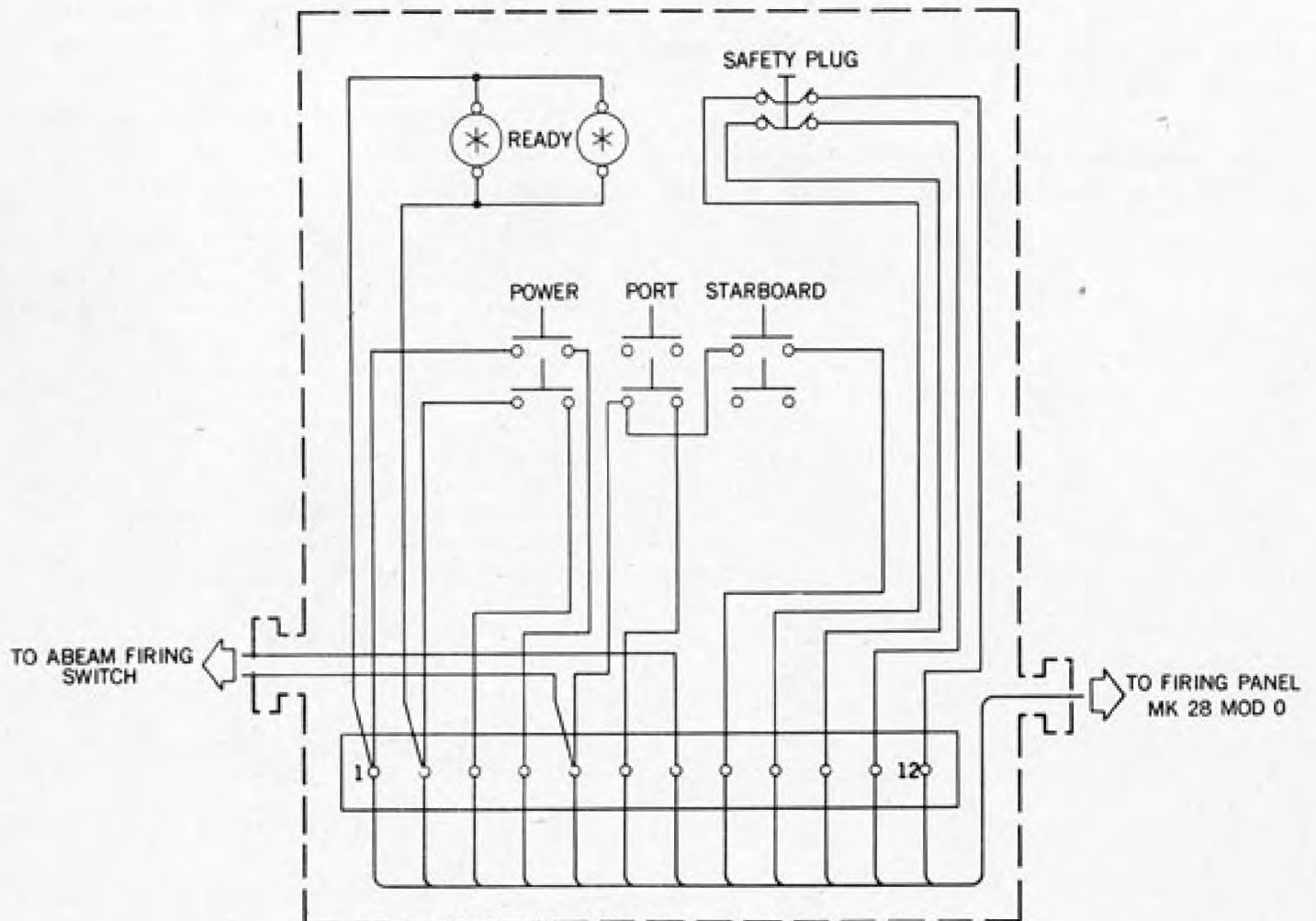
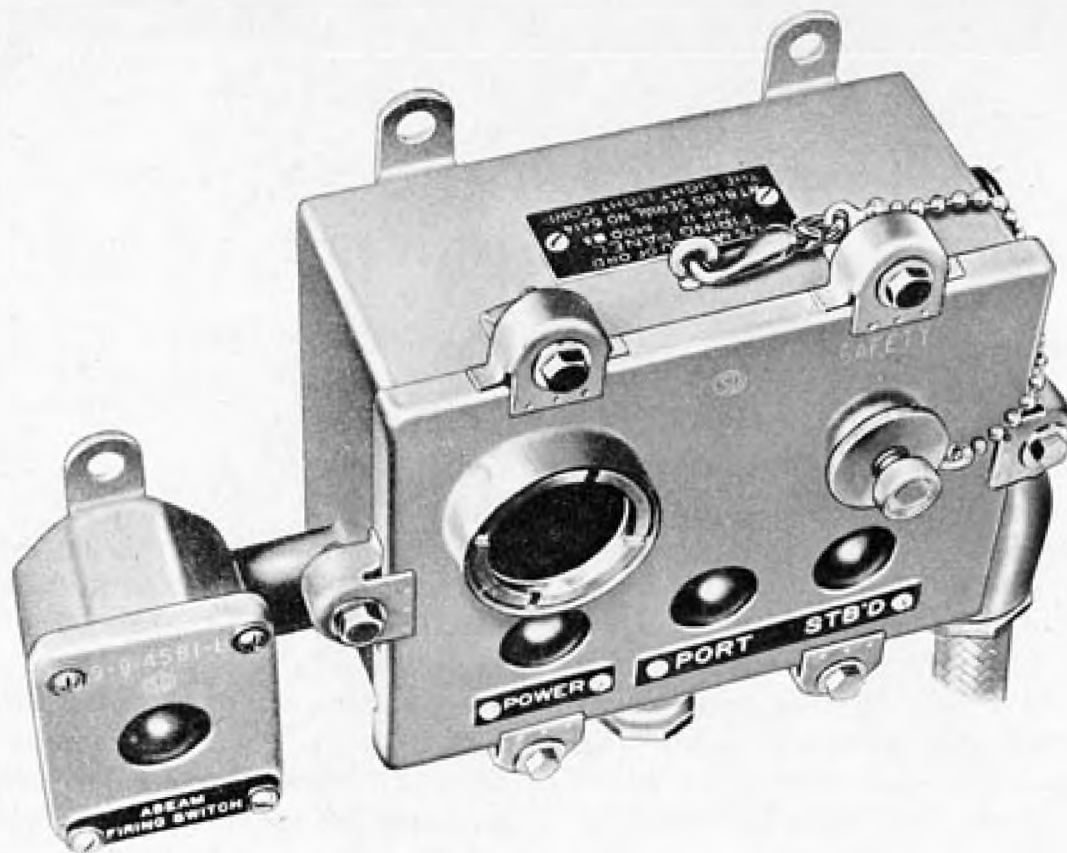
The power circuit of the panel is supplied with 115-volt alternating current; 26- to 30-volt direct current is used in the firing circuit.

DATA

Used with Rocket Launchers Mk 38,39
Voltage
 v AC 115
 v DC 26 to 30
Number of firing circuits 2
Firing interval, sec 0.5*
Type of safety plug Type B

Mounting bulkhead
Weight, lb 12*
Dimensions, in. 4.5 x 9 x 14*
List of drawings LD 256761
General arrangement drawing Dr 513745
Wiring diagram Dr 513746
Applicable publications OP 1826

*Estimated



Firing Panel Mk 11 Mod 3

FIRING PANEL MARK 12 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 12 Mod 0 is an electrical fire control device used to fire Rocket Launcher Mk 7 (Jeep mount). The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, two diaphragm-covered push buttons, an indicator lamp, and a watertight fitting for a multi-conductor cable.

The safety plug, which is of the bayonet-locking, double-action type, contains a push button that is operated in the same manner as a firing push button. When the plug is inserted in the receptacle and the push button is depressed,

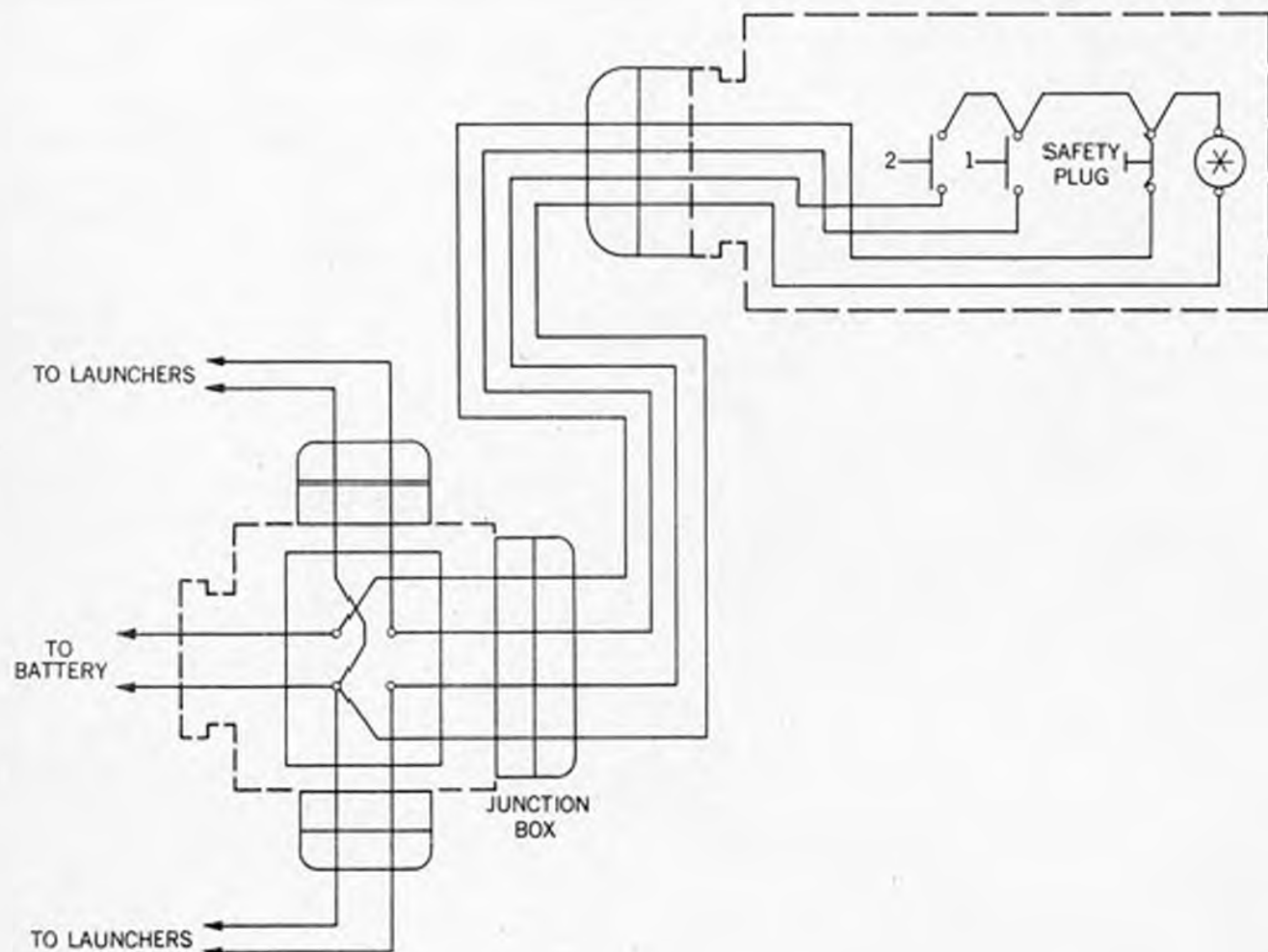
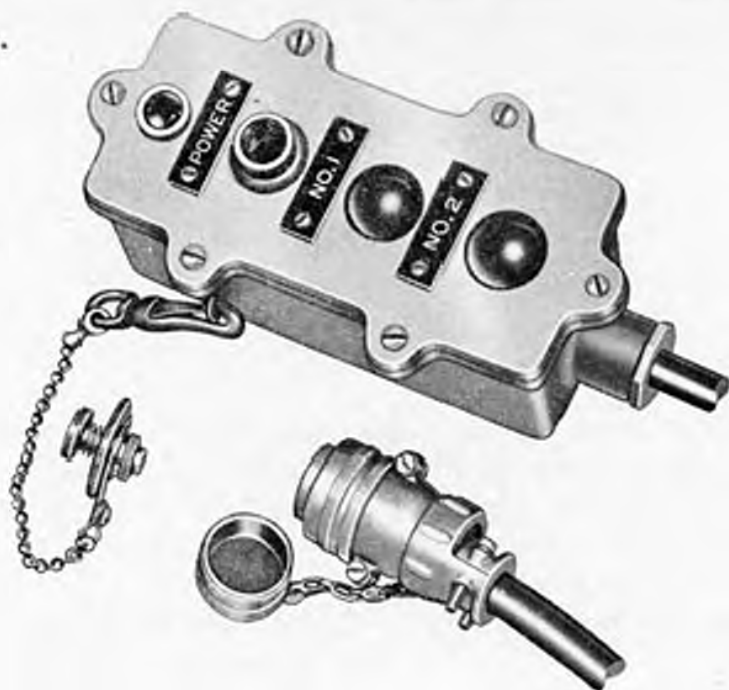
the power circuit of the panel is energized, and the power pilot indicator lamp is illuminated. The diaphragm-covered push buttons on the firing panel are selector firing switches.

Electrically, the safety plug and the firing push buttons interrupt only one power source lead. Electrical power for operation is supplied by an external source. An external junction box is used with the panel to facilitate wiring. Although the firing panel is designed to be used with one rocket launcher, additional launchers can be connected in parallel.

DATA

Used with.....Rocket Launcher Mk 7 (Jeep mount)
Voltage, v AC or DC6 to 24
Number of firing circuits2
Firing interval, sec0.6
Type of safety plugType B
Mounting.....portable or bulkhead

Weight, lb4
Dimensions, in.4 x 4.5 x 8.5
List of drawingsSk 165050
General arrangement drawingDr 437743
Wiring diagramDr 437741
Applicable publicationsnone



Firing Panel Mk 12 Mod 0

FIRING PANEL MARK 12 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 12 Mod 1 is an electrical fire control device used to fire Rocket Launchers Mk 7 (Jeep mount) and Mk 51 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, two diaphragm-covered push buttons, an indicator lamp, and a watertight fitting for a multi-conductor cable. Externally, Firing Panel Mk 12 Mod 1 is an opposite-hand version of Firing Panel Mk 12 Mod 0.

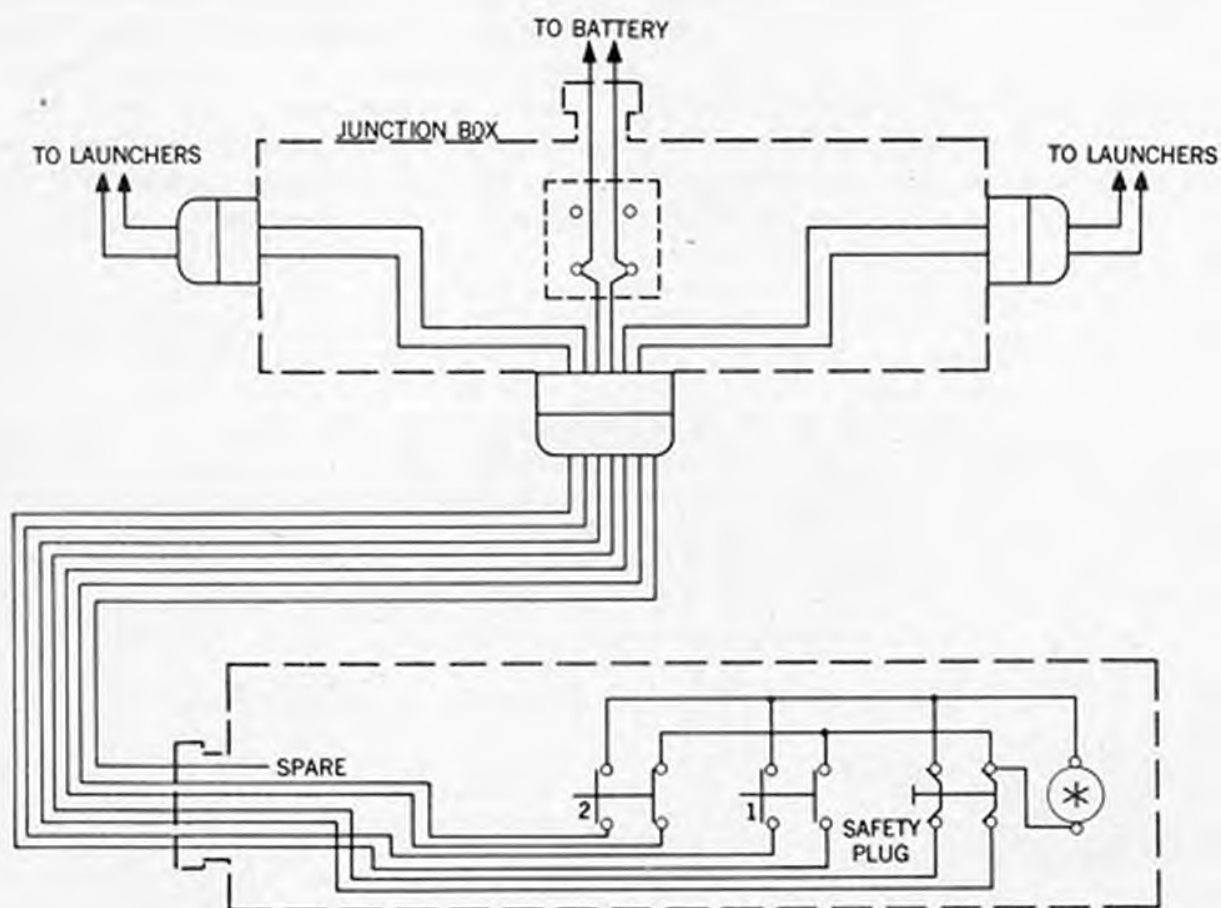
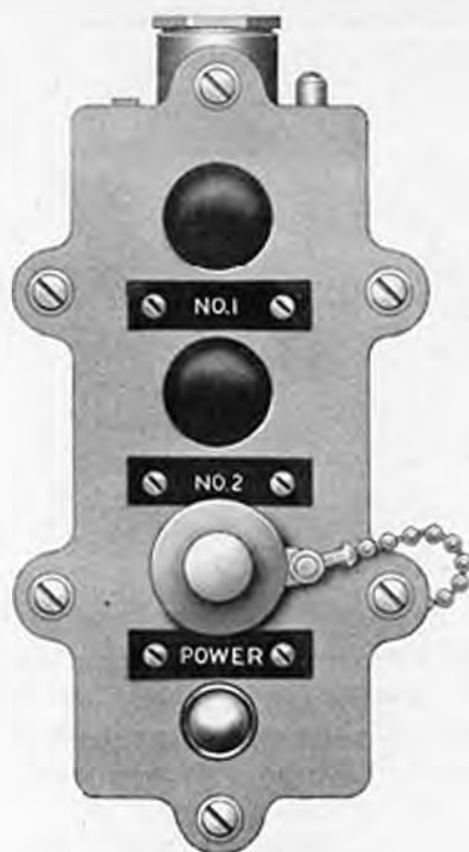
The safety plug, which is of the bayonet-locking, double-action type, contains a push button that is operated in the same manner as a firing push button. When the plug is inserted in the recep-

tacle and the push button is depressed, the power circuit of the panel is energized, and the power indicator lamp is illuminated. The diaphragm-covered push buttons on the firing panel are selector firing switches.

Electrically, Firing Panel Mk 12 Mod 1 differs from Firing Panel Mk 12 Mod 0 in that the safety plug and the firing push buttons interrupt both positive and negative power leads. Electrical power is supplied by an external source. An external junction box is used with the panel. Although the firing panel is designed to be used with one rocket launcher, additional launchers can be connected in parallel.

DATA

Used with	Rocket Launcher Mk 7 (Jeep mount)	Weight, lb	4
	Rocket Launcher Mk 51 Mod 0	Dimensions, in.	4 x 4.5 x 8.5
Voltage, v AC or DC	6 to 24	List of drawings	Sk 165053
Number of firing circuits	2	General arrangement drawing	Dr 438599
Firing interval	varies with launcher	Wiring diagram	Dr 437744
Type of safety plug	Type B	Applicable publications	OP 1246
Mounting	bulkhead or portable		



Firing Panel Mk 12 Mod 1

FIRING PANEL MARK 12 MOD 2

IN SERVICE

DESCRIPTION

Firing Panel Mk 12 Mod 2 is an electrical fire control device used to fire Rocket Launchers Mk 26 Mod 0 and Mk 51 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, two diaphragm-covered push buttons, an indicator lamp, and two watertight fittings for multi-conductor cables. Firing Panel Mk 12 Mod 2 differs from Firing Panel Mk 12 Mod 1 in that it contains a terminal board that eliminates the need for an external junction box.

The safety plug, which is of the bayonet-locking, double-action type, contains a push button that is operated in the same manner as a firing push

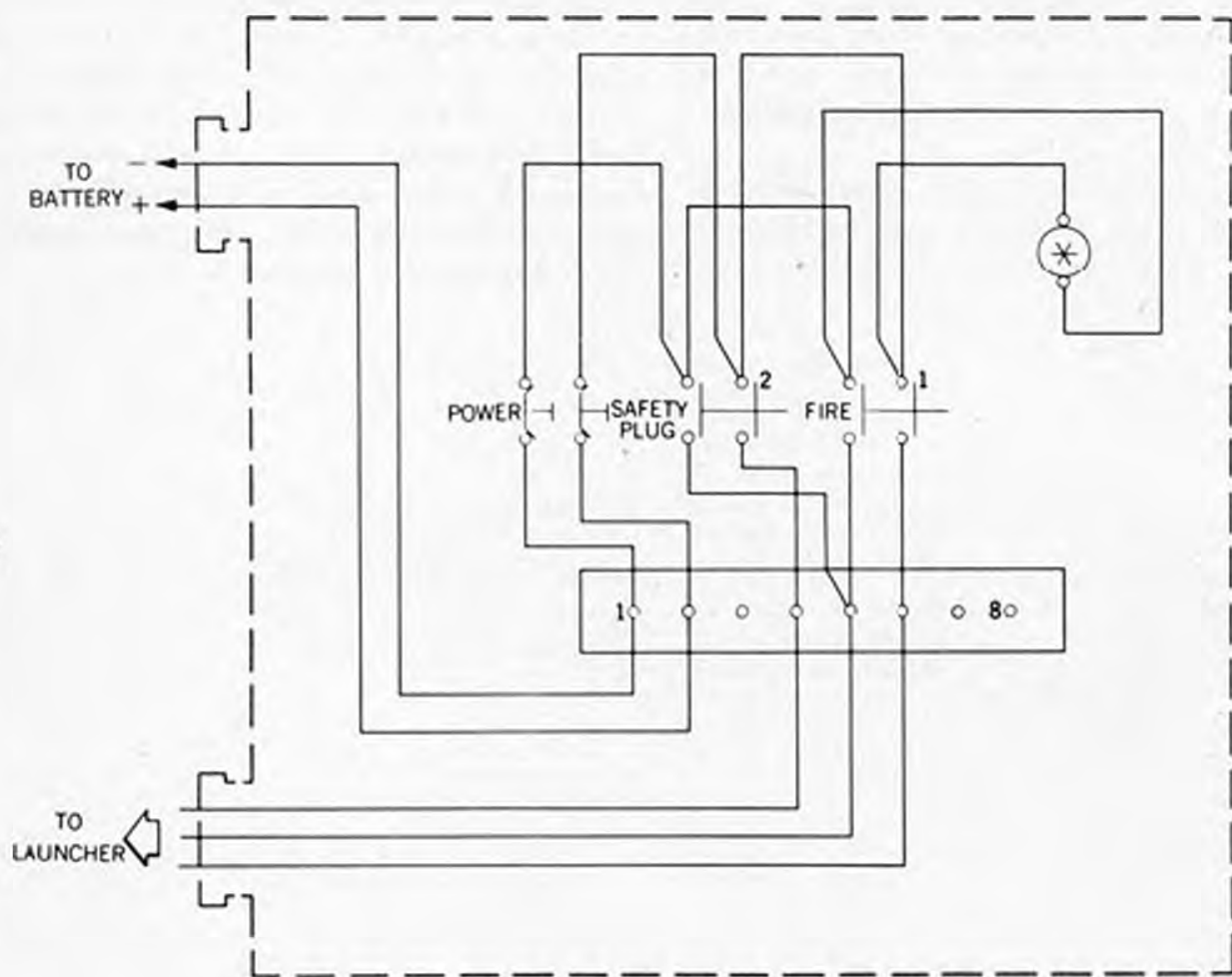
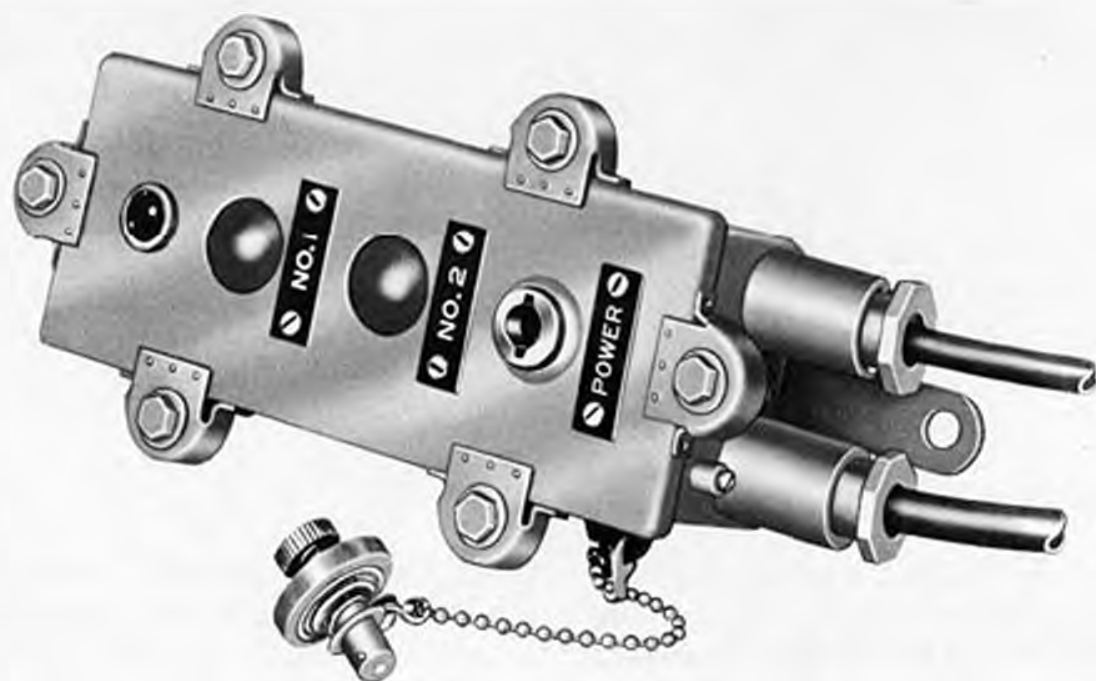
button. When the plug is inserted in the receptacle and the push button is depressed, the power circuit of the panel is energized, and the power indicator lamp is illuminated. The diaphragm-covered push buttons are selector firing switches.

Electrically, Firing Panel Mk 12 Mod 2 is similar to Firing Panel Mk 12 Mod 1 in that the safety plug and the firing push buttons interrupt both positive and negative power leads. Electrical power is supplied by an external source. Although the firing panel is designed to be used with one rocket launcher, additional launchers can be connected in parallel.

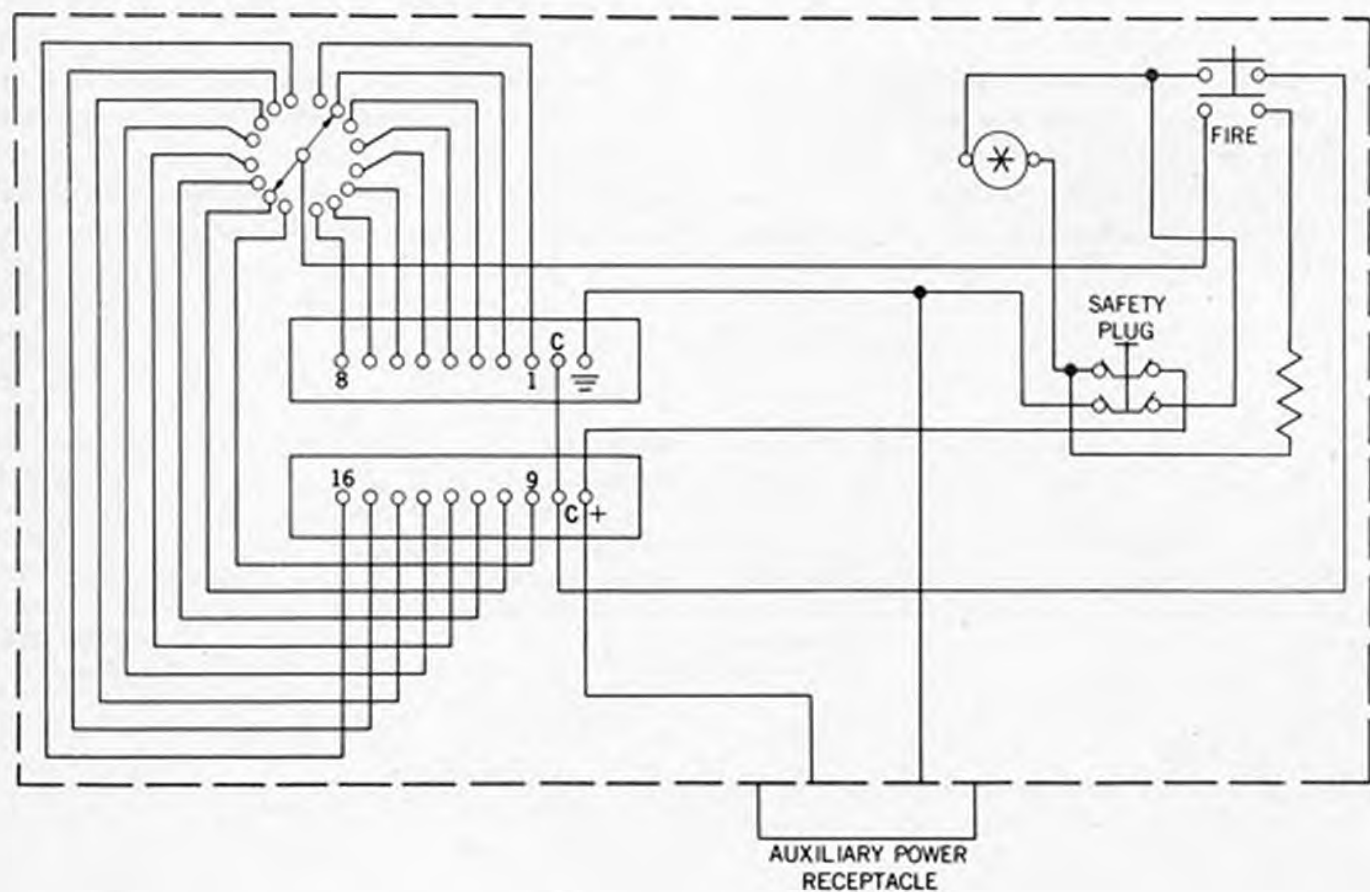
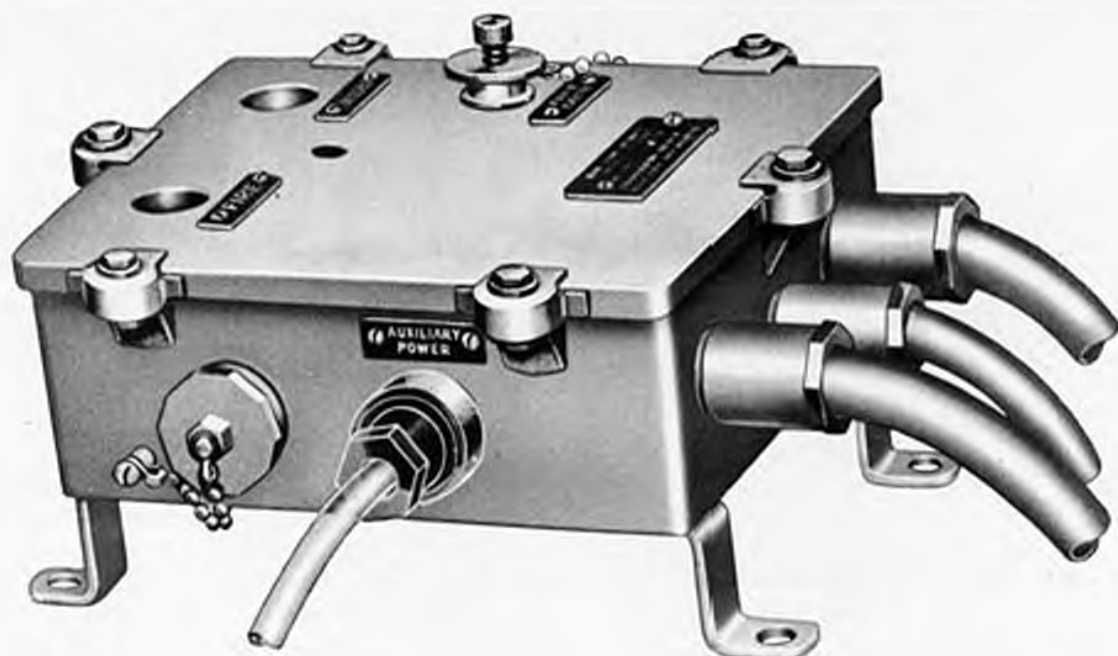
DATA

Used with	Rocket Launcher Mk 26 Mod 0
	Rocket Launcher Mk 51 Mod 0
Voltage, v AC or DC	6 to 24
Number of firing circuits.....	2
Firing interval	varies with launcher
Type of safety plug	Type B
Mounting	portable or bulkhead

Weight, lb	5
Dimensions, in.	4 x 5 x 11.25
List of drawings	Sk 165053
General arrangement drawing	Sk 145437
Wiring diagram	Sk 145536
Applicable publications	OP 1246
	OP 1558



Firing Panel Mk 12 Mod 2



Firing Panel Mk 13 Mod 0

FIRING PANEL MARK 13 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 13 Mod 1 is an electrical fire control device used to fire Rocket Launchers Mk 30 Mod 0, Mk 35 Mod 0, and Mk 50 Mods 0 and 1. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, two diaphragm-covered push buttons, a selector dial, an indicator lamp, an auxiliary power receptacle, and three watertight fittings for multi-conductor cables. Firing Panel Mk 13 Mod 1 is identical in appearance to Firing Panel Mk 13 Mod 0.

The safety plug, which is of the bayonet-locking, double-action type, contains a push button that is operated in the same manner as a firing push button. When the plug is inserted into the receptacle and the push button is depressed, the power circuit of the panel is energized, and the power

indicator lamp is illuminated. This lamp illuminates the selector dial, which indicates the position of a rotary circuit selector switch. Unlike the selector switch of Firing Panel Mk 13 Mod 0, which has 16 circuits, Firing Panel Mk 13 Mod 1 has only eight circuits wired to the selector switch. The selector switch is operated by one of the diaphragm-covered push buttons; the other push button is a firing switch.

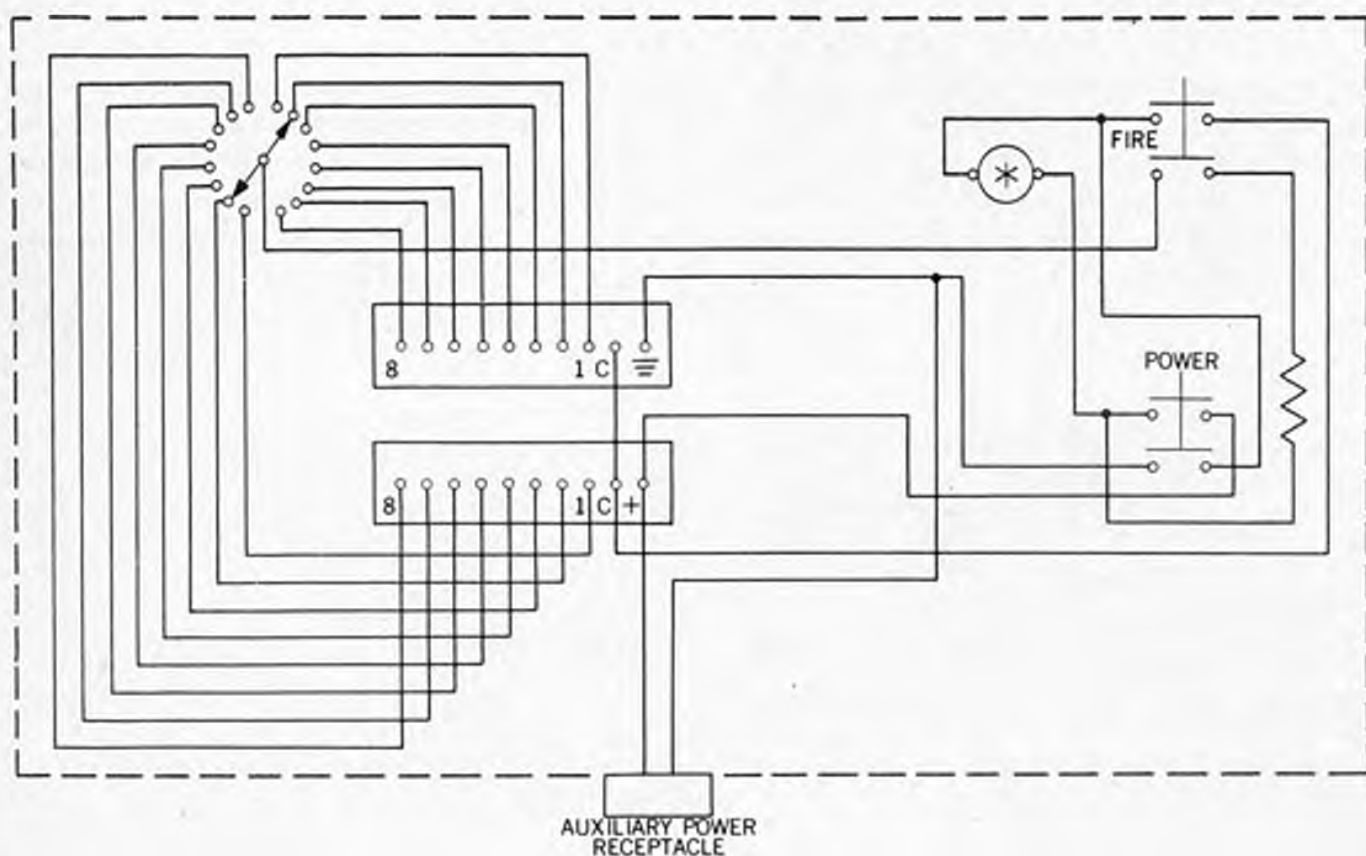
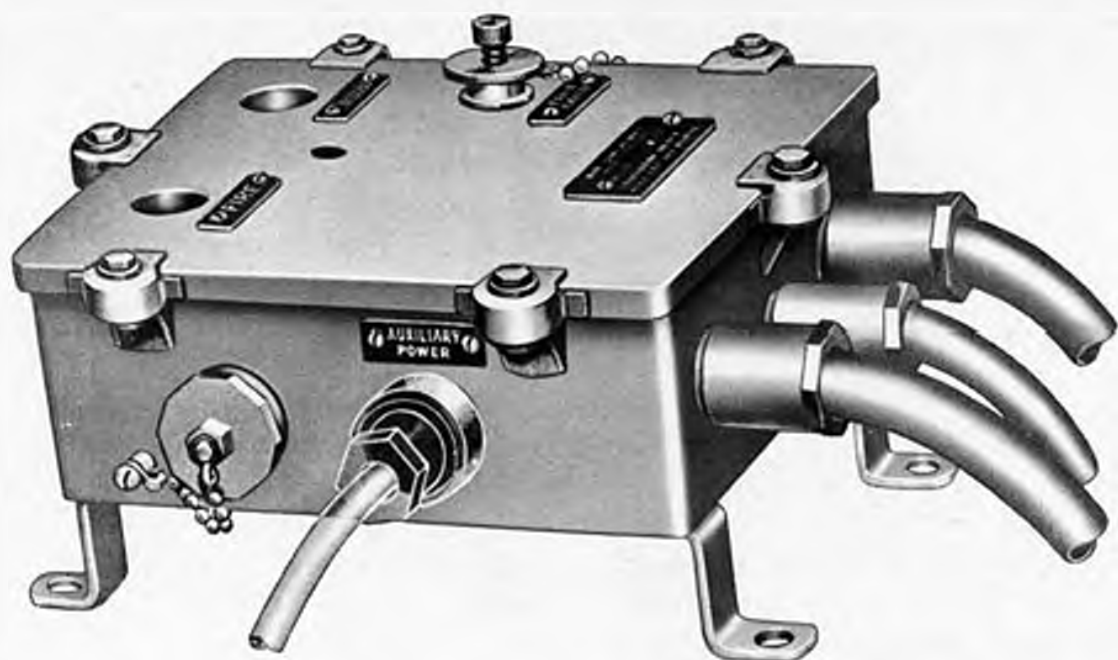
Electrical power is supplied by an external source. The auxiliary power receptacle, which is mounted on the side of the panel, should not be used unless the normal source is disconnected or de-energized. Although the firing panel is designed to be used with two launchers, additional launchers can be connected in parallel.

DATA

Used with Rocket Launcher Mk 30 Mod 0
 Rocket Launcher Mk 35 Mod 0
 Rocket Launcher Mk 50 Mods 0,1
 Voltage, v AC or DC 6 to 24
 Number of firing circuits 8
 Firing interval, sec 0.5*
 Type of safety plug Type B

Mounting bulkhead
 Weight, lb 10
 Dimensions, in. 6 x 11 x 11.5
 List of drawings Sk 165082
 General arrangement drawing Dr 580951
 Wiring diagram Dr 580953
 Applicable publications OP 1244 (2nd Revision)

*Estimated



Firing Panel Mk 13 Mod 1

FIRING PANEL MARK 13 MOD 2

IN SERVICE

DESCRIPTION

Firing Panel Mk 13 Mod 2 is an electrical fire control device used to fire Rocket Launchers Mk 50 Mods 0 and 1 and, for training purposes, a machine gun either separately or simultaneously with the launchers. The unit is enclosed in a watertight metal box that has two safety plug receptacles, two safety plugs, two diaphragm-covered push buttons, a dial indicator, an indicator lamp, an auxiliary power receptacle, and three watertight fittings for multi-conductor cables. Firing Panel Mk 13 Mod 2 differs in appearance from Firing Panel Mk 13 Mod 1 in the addition of one safety plug and receptacle.

One of the safety plugs is a screw-in double-action type with a receptacle in series with a machine-gun firing switch. This switch is attached to a rotary circuit-selector switch within the firing panel. The other safety plug is a bayonet-locking double-action type with a push button that must be depressed in the same manner

as a firing push button. When the plug is inserted into its receptacle and the push button depressed, the power circuit of the launcher is energized, and the power indicator lamp is illuminated. This lamp illuminates the dial indicator, which indicates the position of the rotary circuit-selector switch. This switch is operated by one of the diaphragm-covered push buttons; the other push button is a launcher firing switch. Since the machine-gun firing switch is attached to the selector switch, the machine-gun will fire whenever the selector switch push button is depressed, provided the machine gun safety plug is in its receptacle.

Electrical power is supplied by an external source. The auxiliary power receptacle, which is mounted on one side of the panel, is used whenever the normal power source is disconnected or de-energized. Although the firing panel is designed to be used with two launchers, additional launchers can be connected in parallel.

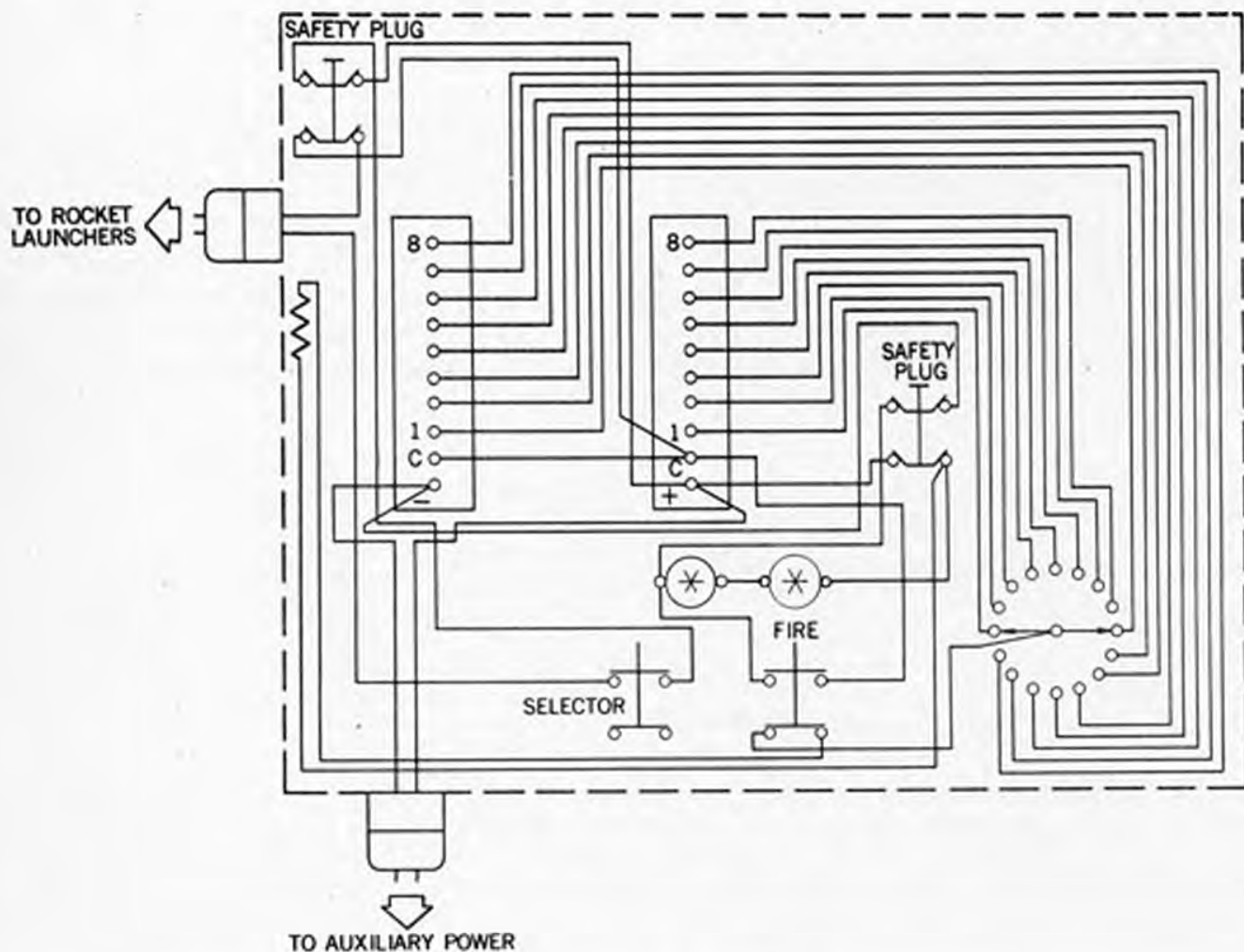
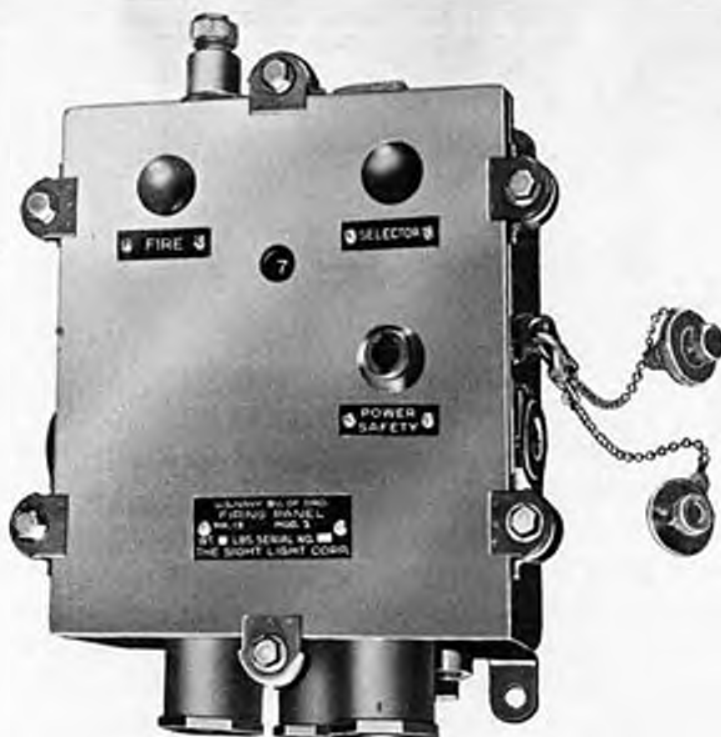
DATA

Used with Rocket Launchers Mk 50 Mods 0,1
Voltage, v AC or DC 6 to 24
Number of firing circuits 8*
Firing interval, sec 0.5**
Type of safety plugs Types B and C
Mounting bulkhead
Weight, lb 12

Dimensions, in. 6 x 11 x 11.5
List of drawings not assigned
General arrangement drawing see Crdalt 2517
Wiring diagram Dr 562429
Applicable publications OP 1244 (Second Revision)
Ordalt 2517

*Plus machine gun firing circuit

**Estimated



Firing Panel Mk 13 Mod 2

FIRING PANEL MARK 14 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 14 Mod 0 is an electrical fire control device used to fire rocket launchers or torpedo tubes. The unit is enclosed in a watertight metal box that contains a safety plug receptacle, a safety plug, four diaphragm-covered push buttons, an indicator lamp, and a watertight fitting for a multi-conductor cable.

The safety plug, which is of the bayonet-locking, double-action type, contains a push button that is operated in the same manner as a firing push button. When the plug is inserted into the receptacle and the push button is depressed, the power

circuit of the panel is energized, and the power indicator lamp is illuminated. This safety plug interrupts both positive and negative power leads. The four diaphragm-covered push buttons on the panel are selector firing switches.

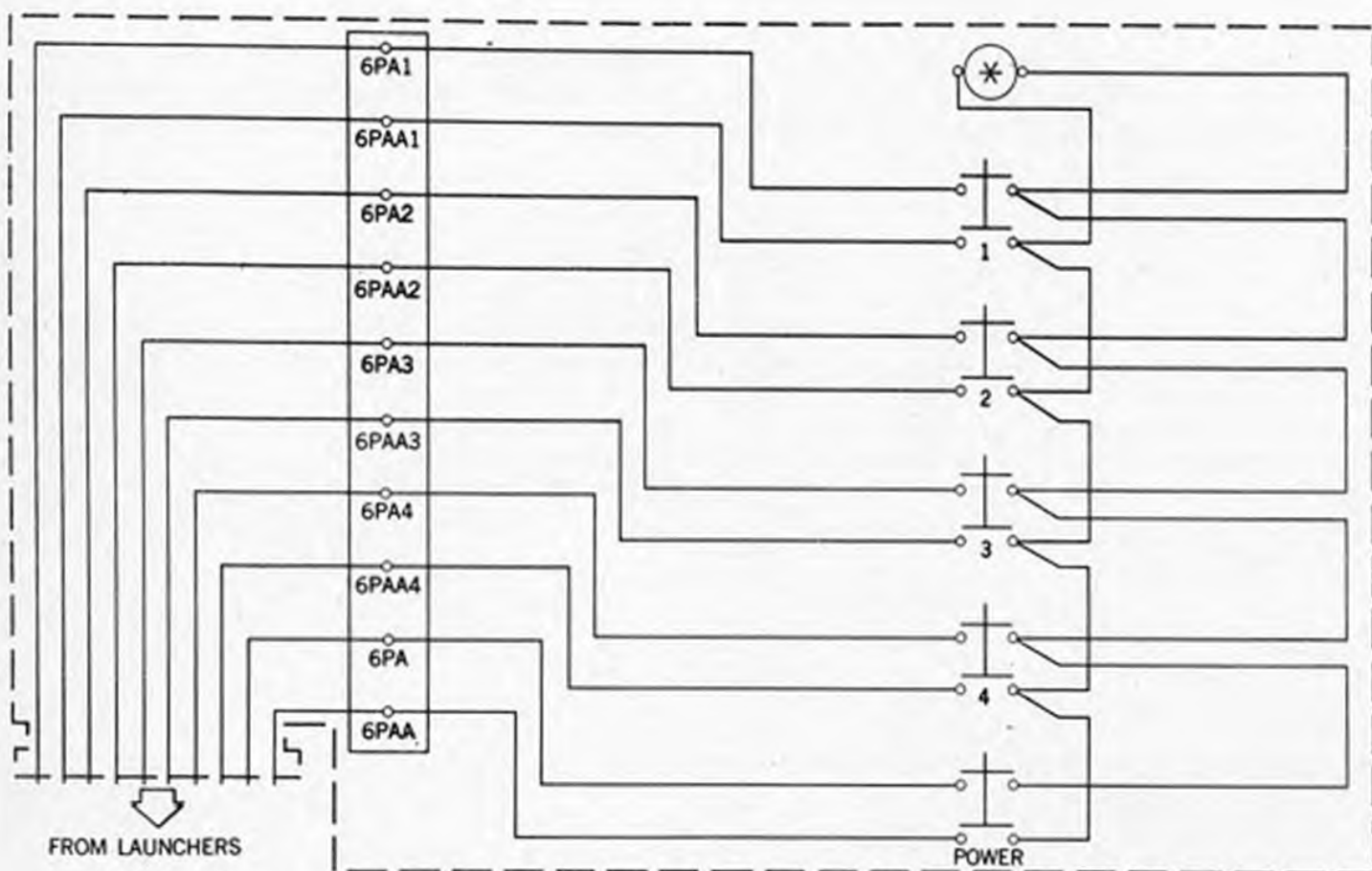
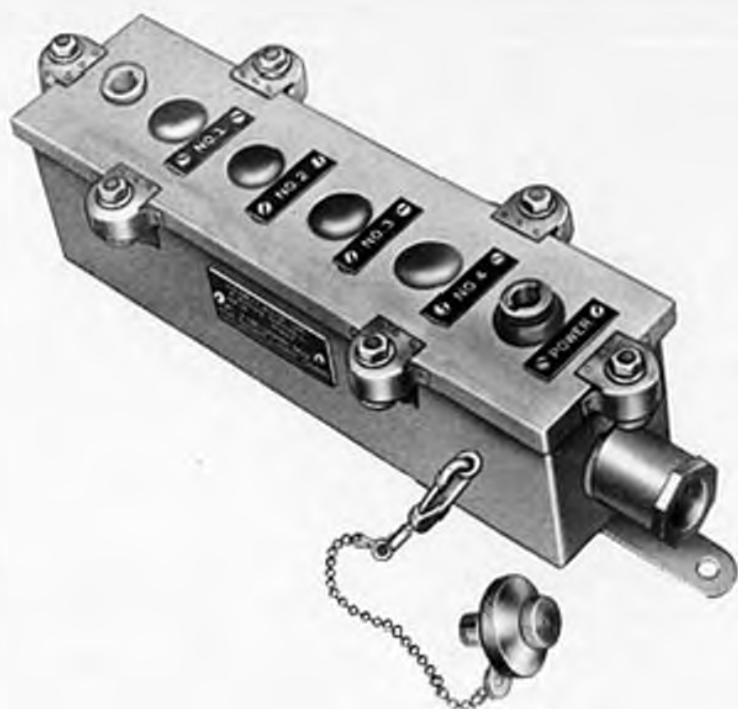
Electrically, Firing Panel Mk 14 Mod 0 contains four independent firing circuits; each circuit has its own return lead to the panel. Electrical power is supplied by an external source. If more than one rocket launcher is used with the panel, the additional launchers must be connected in parallel.

DATA

Used with..... Rocket Launcher Mk 31 Mod 0
 Voltage, v AC or DC 6 to 24
 Number of firing circuits 4
 Firing interval, sec 0.5*
 Type of safety plug Type B
 Mounting portable or bulkhead

Weight, lb 8
 Dimensions, in. 4.5 x 5 x 14
 List of drawings Sk 165055
 General arrangement drawing Dr 393688
 Wiring diagram Dr 393689
 Applicable publications..... none

*Estimated



Firing Panel Mk 14 Mod 0

FIRING PANEL MARK 14 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 14 Mod 1 is an electrical fire control device used to fire Rocket Launcher Mk 31 Mod 0. The unit is enclosed in a watertight metal box that contains a safety plug receptacle, safety plug, four diaphragm-covered push buttons, an indicator lamp, and a watertight fitting for the multi-conductor cable. The external appearance of Firing Panel Mk 14 Mod 1 is identical with that of Firing Panel Mk 14.

The safety plug, which is of the bayonet-locking, double-action type, contains a push button that is operated in the same manner as a firing push button. When the plug is inserted into the receptacle and the push button is depressed, the power

circuit in the panel is energized, and the power indicator lamp is illuminated. This safety plug interrupts both positive and negative power leads. The four diaphragm-covered push buttons on the panel are selector firing switches.

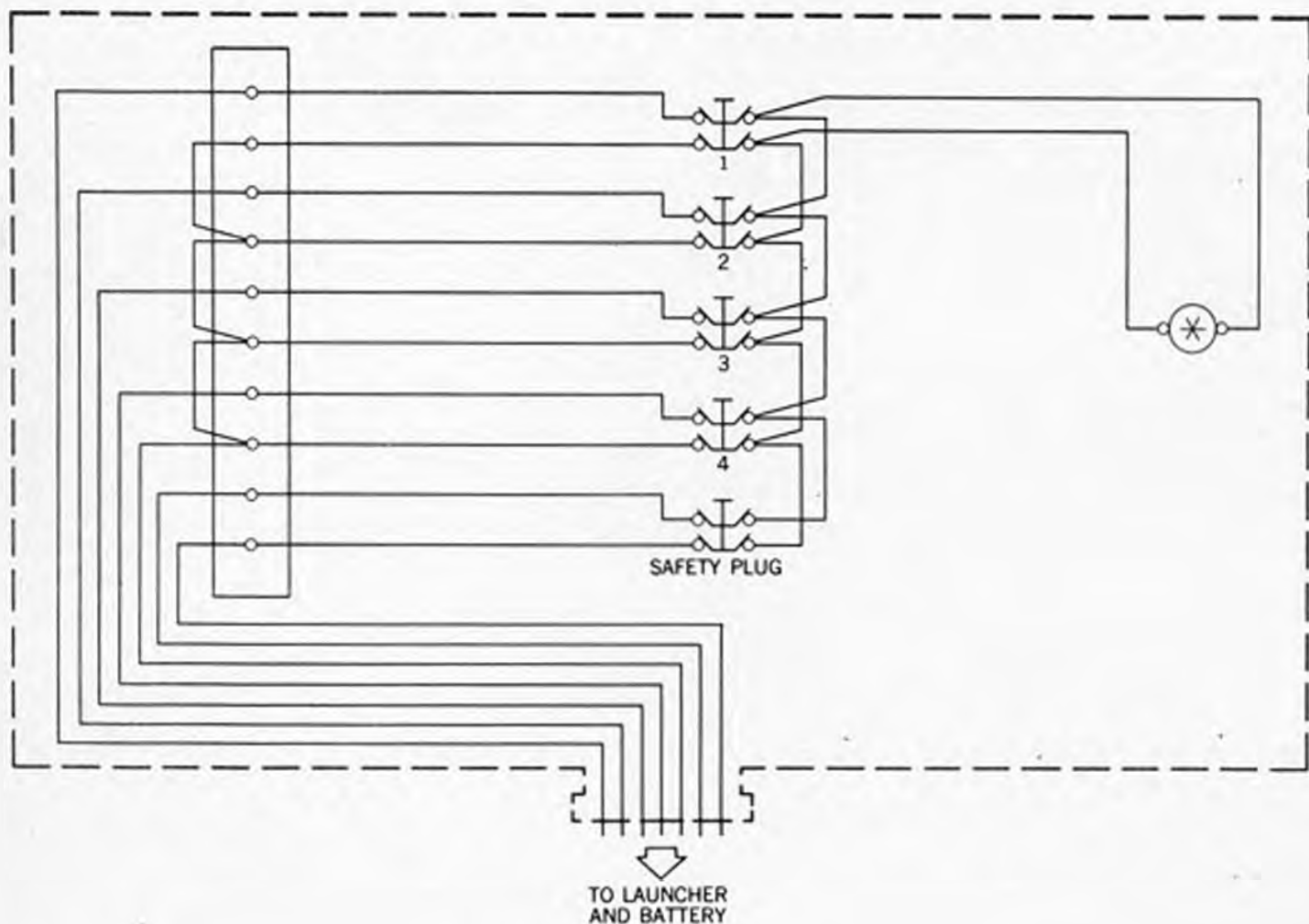
Electrically, Firing Panel Mk 14 Mod 1 is similar to Firing Panel Mk 14 Mod 0 except that the return leads have all been connected so that a common return line is used. Electrical power is supplied by an external source. Although the panel is designed for use with one four-guide launcher, additional launchers may be connected in parallel.

DATA

Used with Rocket Launcher Mk 31 Mod 0
Voltage, v AC or DC 6 to 24
Number of firing circuits 4
Firing interval, sec 0.5*
Type of safety plug Type B
Mounting portable or bulkhead

Weight, lb 8
Dimensions, in. 4.5 x 5 x 14
List of drawings Sk 165083
General arrangement drawing Dr 439835
Wiring diagram Dr 330325
Applicable publications OP 1279

*Estimated



Firing Panel Mk 14 Mod 1

FIRING PANEL MARK 16 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 16 Mod 0 is an electrical fire control device used to fire from one to ten Rocket Launchers Mk 7 (Exp). The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, 11 selector switches, two indicator lamps, and three watertight fittings for multi-conductor cables.

The safety plug, which is of the screw-in, double-action type, contains a push button that must be depressed in the same manner as a firing push button. The push button on the safety plug is utilized as a firing push button after the safety plug has been inserted in the receptacle. Electrically, the combination safety plug and push button interrupts only one of the two power source leads. One of the selector switches is a power selector switch that is used to select

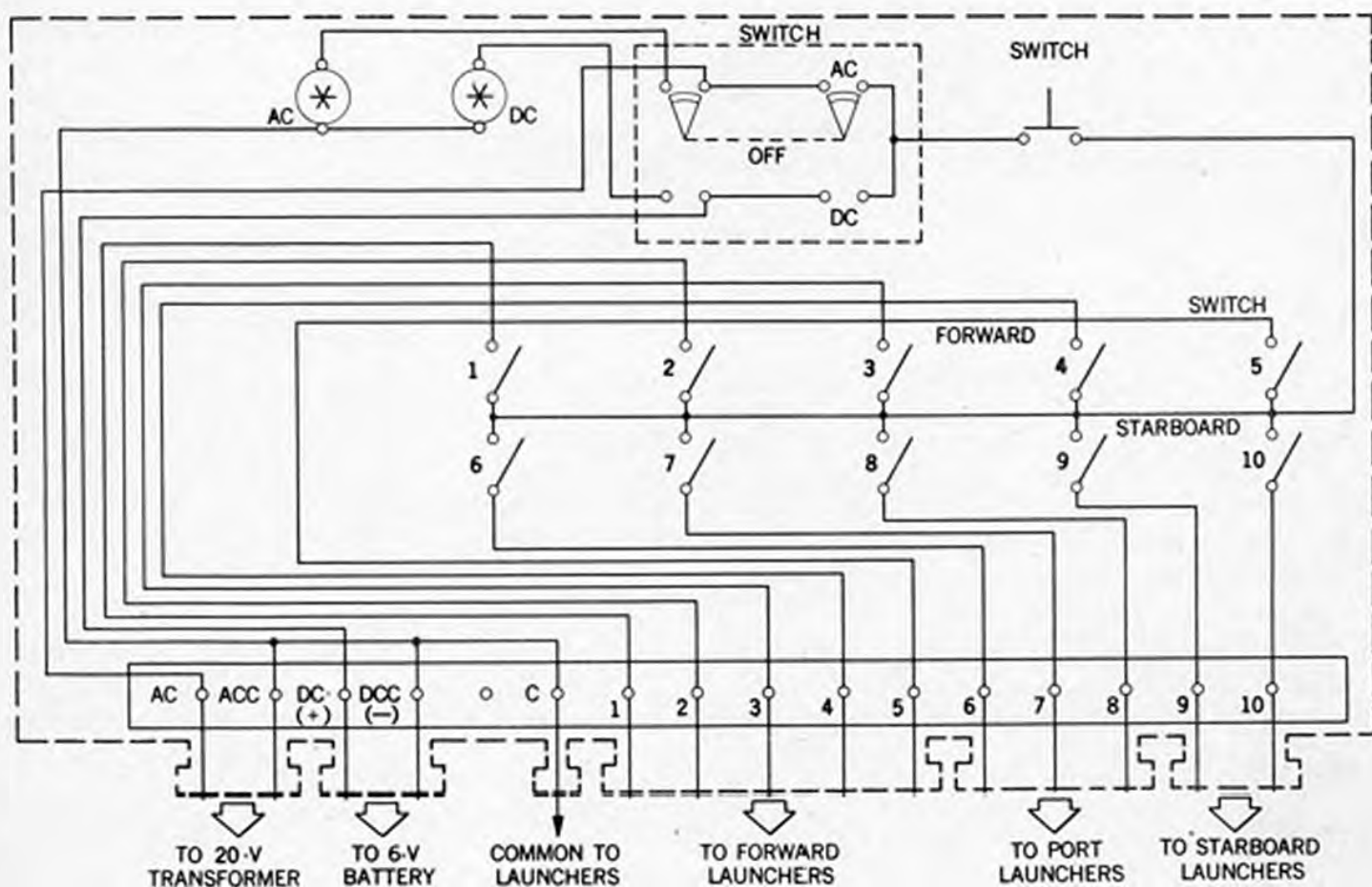
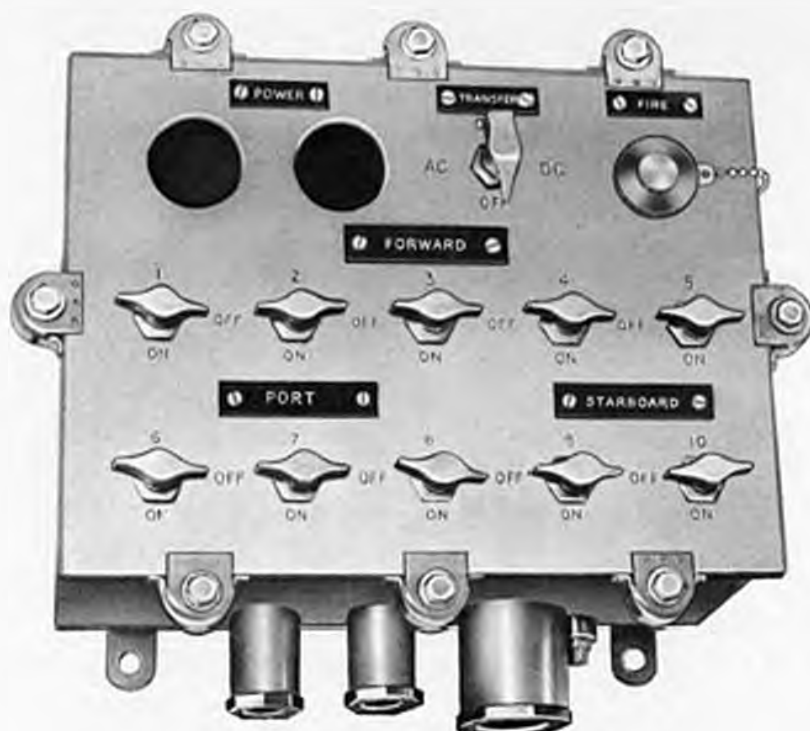
either alternating or direct current for operation; the other ten switches are circuit selector switches. The left-hand power pilot indicator lamp is illuminated when the power selector switch is thrown to the AC position; the right-hand power pilot indicator lamp is illuminated when the power selector switch is thrown to the DC position. The circuit selector switches are numbered with respect to the launcher groupings: numbers 1 through 5, FORWARD; numbers 6 through 8, PORT; and numbers 9 and 10, STARBOARD. By preselection of the ten circuit selector switches, any one of the ten launchers or any combination of the launchers can be fired.

Electrical power is supplied by an external source.

DATA

Used with Rocket Launcher Mk 7 (Exp)
 Voltage
 v AC 20
 v DC 6
 Number of firing circuits 10
 Firing interval, sec 0.3
 Type of safety plug Type C

Mounting bulkhead
 Weight, lb 18
 Dimensions, in. 5 x 12 x 13.5
 List of drawings Sk 165084
 General arrangement drawing Dr 604936
 Wiring diagram Dr 604939
 Applicable publications OP 1131



Firing Panel Mk 16 Mod 0

FIRING PANEL MARK 16 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 16 Mod 1 is an electrical fire control device used to fire from one to ten Rocket Launchers Mk 7 (Exp) or Mk 51 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, 11 selector switches, two indicator lamps, and three watertight fittings for multi-conductor cables. Firing Panel Mk 16 Mod 1 differs from Firing Panel Mk 16 Mod 0 in the position of the indicator lights and safety plug receptacles, and in labels for the launcher groups.

The safety plug, which is of the screw-in, double-action type, contains a push button that must be depressed in the same manner as a firing push button. In this panel, the push button on the safety plug is utilized as a firing push button after the safety plug has been inserted in the receptacle. Electrically, Firing Panel Mk 16 Mod 1 differs from Firing Panel Mk 16 Mod 0 in that the

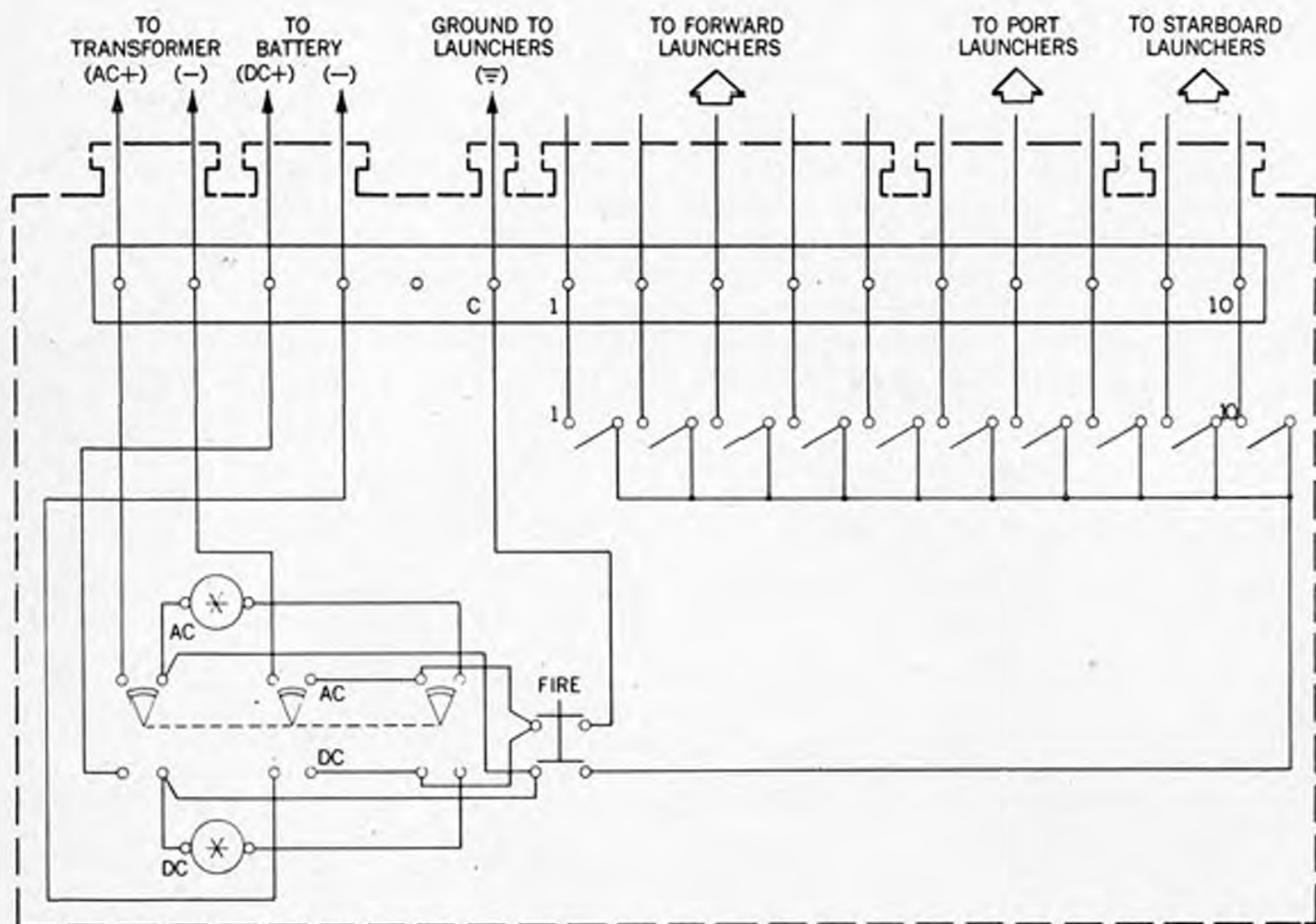
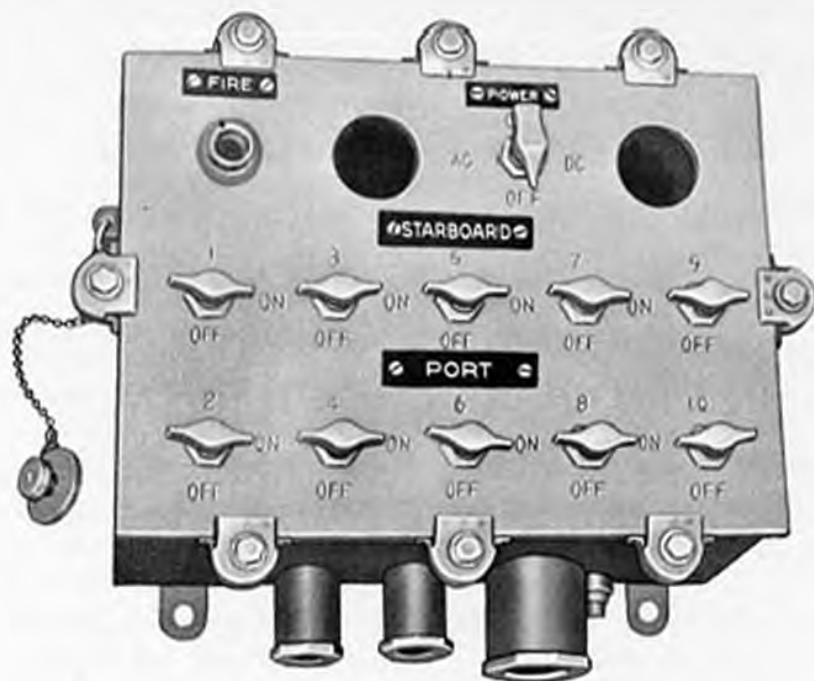
combination safety plug and push button interrupts both power source leads. One of the selector switches is a power selector switch that is used to select either alternating or direct current for operation; the other ten switches are circuit selector switches. The left-hand power pilot indicator lamp is illuminated when the power selector switch is thrown to the AC position; the right-hand power pilot indicator lamp is illuminated when the power selector switch is thrown to the DC position. The circuit selector switches are numbered with respect to the launcher groupings: the odd numbers are for the starboard launchers and the even numbers are for the port launchers. By preselection of the ten circuit selector switches, any one of the ten launchers or any combination of the launchers can be fired.

Electrical power is supplied by an external source.

DATA

Used with	Rocket Launcher Mk 7 (Exp)
	Rocket Launcher Mk 51 Mod 0
Voltage	
v AC	20
v DC	6
Number of firing circuits	10
Firing interval.....	determined by launcher
Type of safety plug	Type C

Mounting.....	bulkhead
Weight, lb	18
Dimensions, in.	5 x 12 x 13.5
List of drawings	Sk 165085
General arrangement drawing.....	Dr 580919
Wiring diagram	Dr 580924
Applicable publications	OP 1131
	OP 1246



Firing Panel Mk 16 Mod 1

FIRING PANEL MARK 17 MOD 0

IN SERVICE

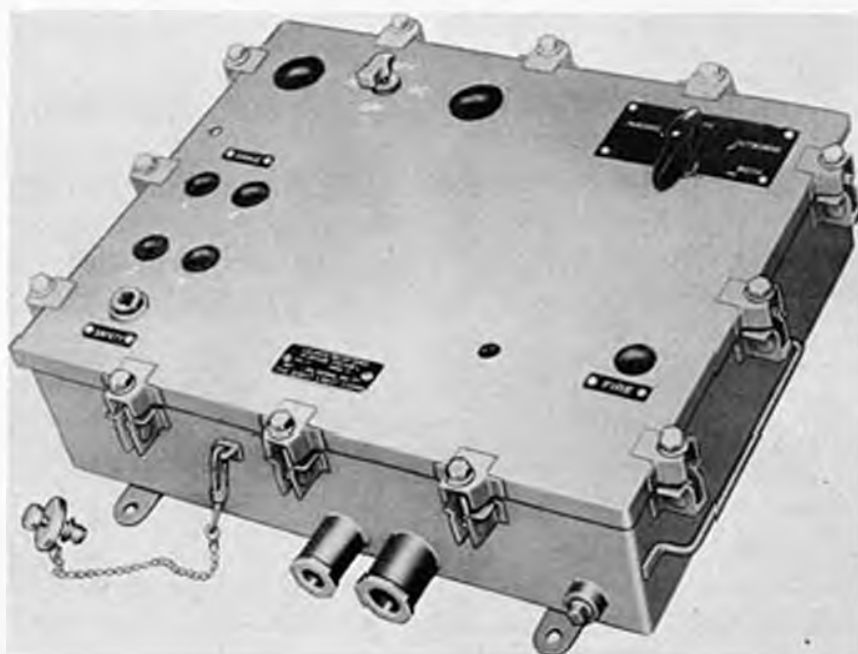
DESCRIPTION

Firing Panel Mk 17 Mod 0 is an electrical fire control device used to fire multiple installations of Rocket Launchers Mk 30 Mod 0 and Mk 36 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, two selector switches, a selector dial, five diaphragm-covered push buttons, two indicator lamps, and two watertight fittings for multi-conductor cables.

The safety plug, which is of the bayonet-locking, double-action type, contains a push button that must be depressed in the same manner as a firing push button before the power circuit of the panel can be energized. One of the two selector switches is a power selector switch; the other is a group selector switch. When the safety plug is inserted in the receptacle and depressed, the power selector switch is used to energize the alternating-current or the direct-current power circuit. If the power selector switch is thrown to the AC position, the left-hand power pilot indicator lamp is illuminated; if the power selector switch is thrown to the DC position, the right-hand power pilot indicator lamp is illuminated.

The group selector switch, which has four positions (INBOARD, OFF, OUTBOARD, and BOTH), controls the circuits connected to a rotary circuit switch. This rotary circuit switch consists of two ganged rotors, each having 30 circuit contacts. One of the contacts is an OFF position, so a total of 58 circuits is available—29 on each rotor. The group selector switch is used to select the circuits of either one of the rotors, or of both rotors for parallel operation. One of the five diaphragm-covered push buttons on the panel is a firing button that advances the rotors one position each time it is depressed; the other four push buttons control four range-shot circuits. The selector dial on the rotor indicates the position of the rotor. Approximately one-half second should be allowed between each of the rotor positions; the time required for ripple fire through the 29 rotor positions should be approximately 15 seconds. If the four range-shot circuits are fired first, only rotor positions numbered 1 through 25 can be utilized for firing additional rockets.

Electrical power is supplied by an external source.



Firing Panel Mk 17 Mod 0

DATA

Used with Rocket Launcher Mk 30 Mod 0
Rocket Launcher Mk 36 Mod 0

Voltage

v AC 20

v DC 12

Number of firing circuits 58

Firing interval, sec (approx) 0.5

Type of safety plug.....Type B

Mountingbulkhead

Weight, lb 40

Dimensions, in.9 x 16.5 x 20

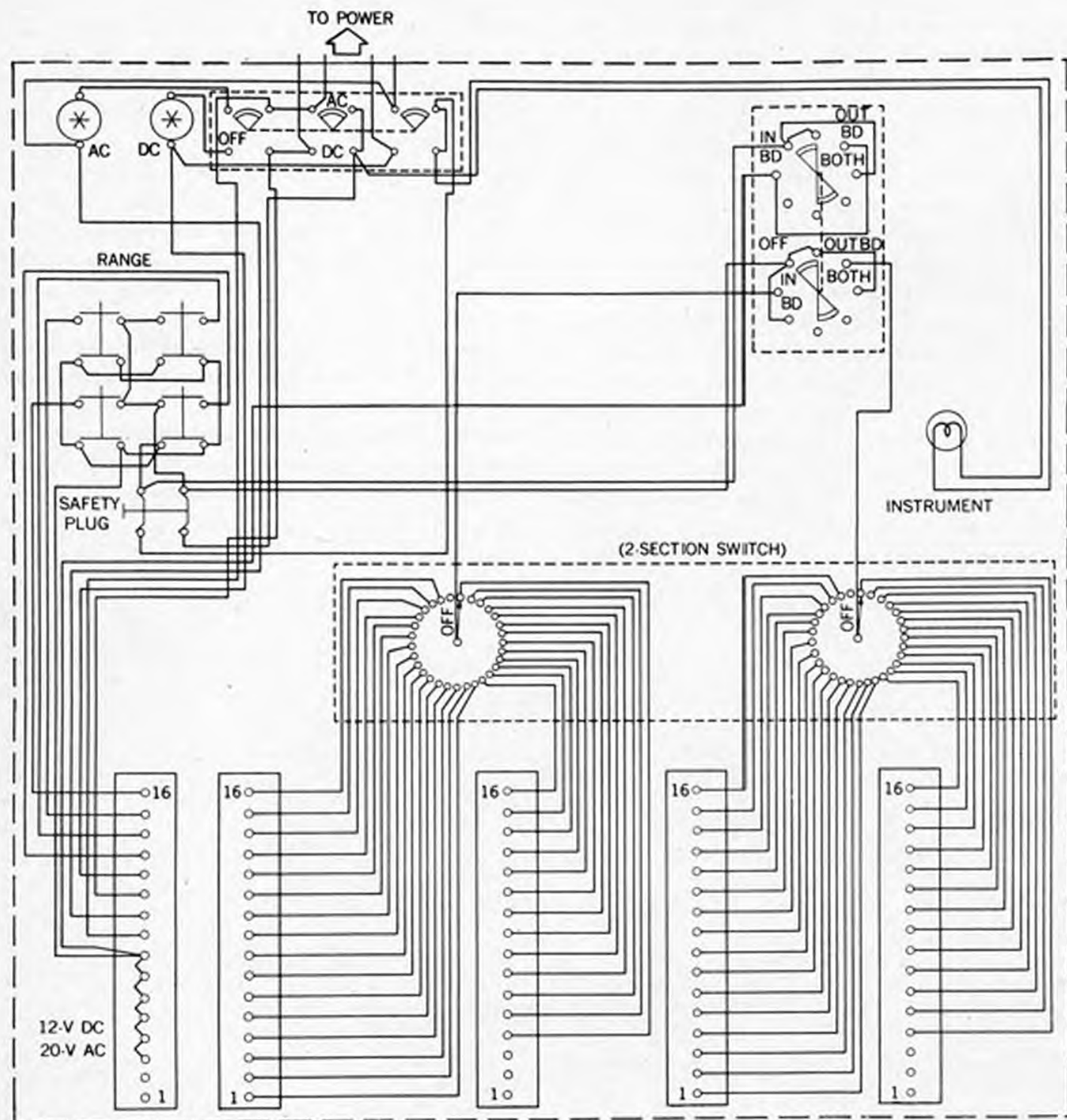
List of drawings Sk 165086

General arrangement drawing Dr 580927

Wiring diagram Dr 580931

Applicable publications OP 1318

OP 1135



Firing Panel Mk 17 Mod 0

FIRING PANEL MARK 18 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Panel Mk 18 Mod 0 was designed as an electrical fire control device to be used with Rocket Launcher Mk 51 Mod 0. The design was abandoned in favor of later model firing panels. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, three diaphragm-covered push buttons, an indicator lamp, and a watertight fitting for a multi-conductor cable. Firing Panel Mk 18 Mod 0 is similar to Firing Panel Mk 12 Mod 1 except that a third firing circuit is added.

The safety plug, which is of the bayonet-locking,

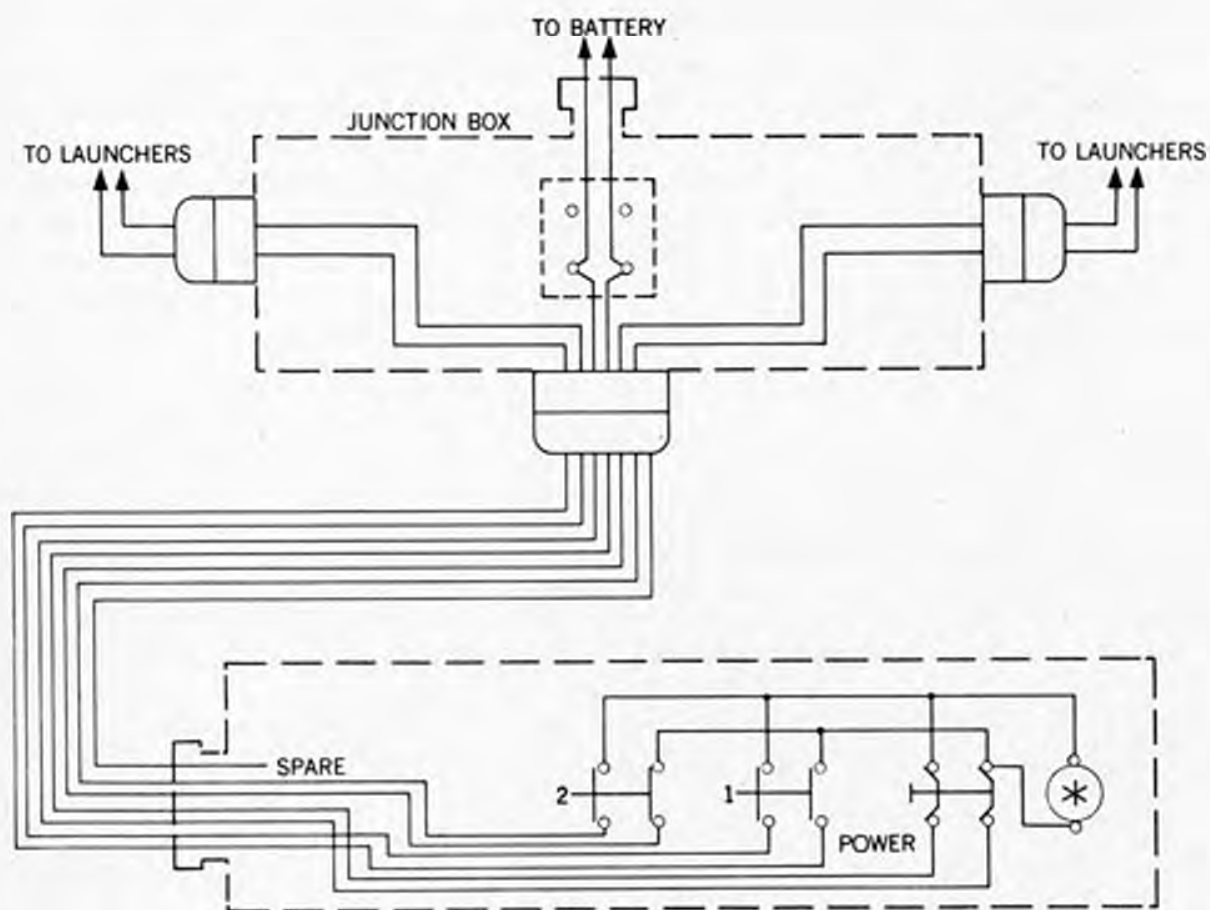
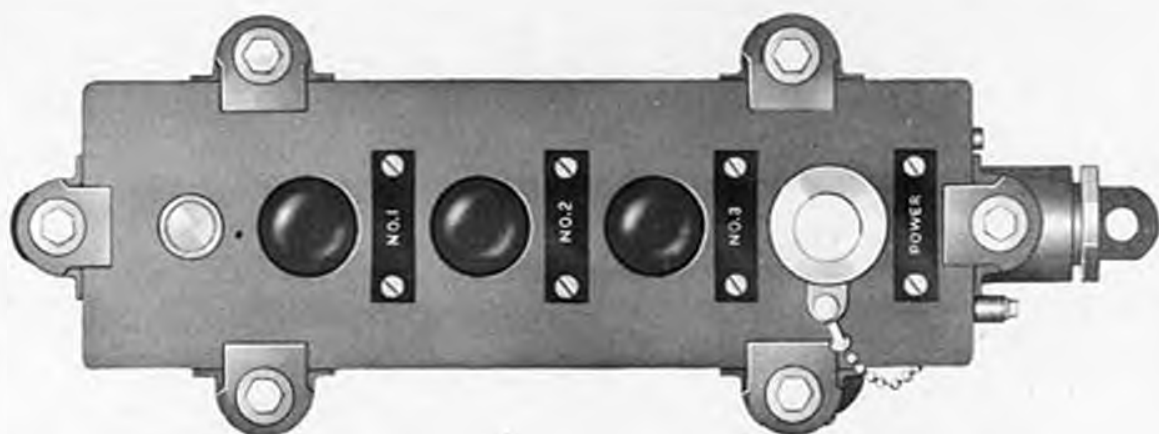
double-action type, contains a push button that is operated in the same manner as a firing push button. When the plug is inserted into the receptacle and the push button depressed, the power circuit of the panel is energized, and the power indicator lamp is illuminated. The diaphragm-covered push buttons are selector firing switches.

An external junction box is used with the panel; electrical power is supplied by an outside source. Although the firing panel is designed to be used with one rocket launcher, additional launchers can be connected in parallel.

DATA

Used with (not manufactured)
Voltage, v AC or DC 6 to 24
Number of firing circuits 3
Firing interval, sec manually operated
Type of safety plug Type B
Mounting bulkhead or portable

Weight, lb 4.5
Dimensions, in. 5 x 5 x 12
List of drawings not assigned
General arrangement drawing Sk 144986
Wiring diagram not assigned
Applicable publications OP 1246



Firing Panel Mk 18 Mod 0

FIRING PANEL MARK 19 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 19 Mod 0 is an electrical fire control device used to fire multiple installations of Rocket Launchers Mk 7 (Exp) and Mk 51 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, a four-position rotary switch, a 16-position rotary switch, two indicator lamps, and three watertight fittings for multi-conductor cables.

The safety plug, which is of the bayonet-locking, double-action type, contains a push button that must be depressed in the same manner as a firing push button before the power circuit of the panel can be energized.

The four-position rotary switch, which is a power selector switch, has AC, DC, and two OFF positions. When the safety plug is inserted in the receptacle and depressed, the power selector switch is used to select either the alternating-current or direct-current power circuit. The power

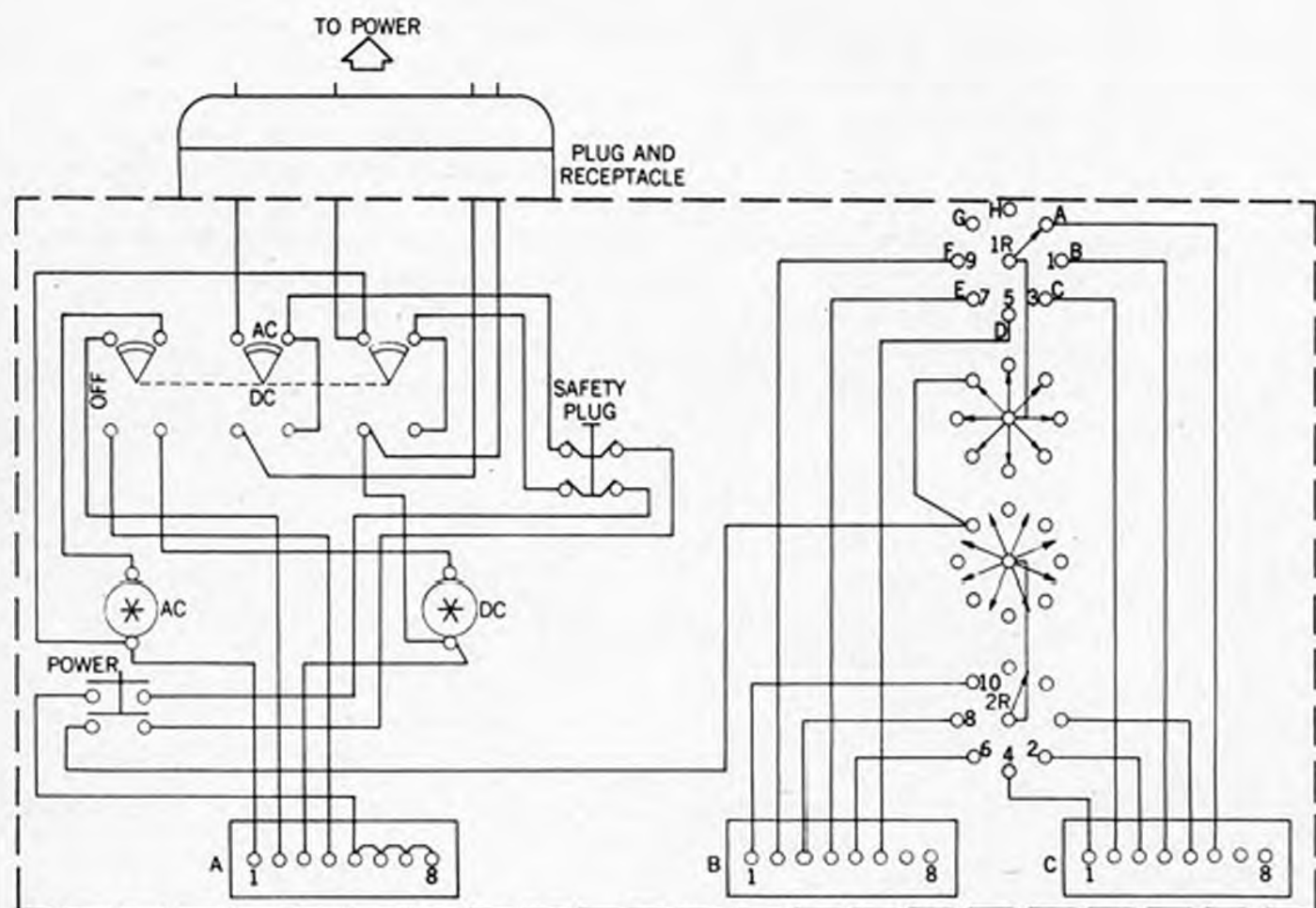
circuit is energized by depressing the diaphragm-covered push button labeled POWER; when the power circuit is energized, the power pilot indicator lamp adjacent to the position in which the power selector switch has been thrown is illuminated. The 16-position rotary switch, which is a circuit selector switch, has four adjacent OFF positions, two range-shot positions identified as R1 and R2, and ten consecutively numbered firing circuit positions. When the power circuit is energized, the range-shot circuits and the firing circuits can be energized by rotating the selector switch handle. The firing interval is determined by the speed with which the selector handle is rotated through the firing positions, and is limited only by the time required to transmit the firing impulse in any one position. Approximately 5 seconds are required to rotate the switch through the ten firing positions.

Electrical power is supplied by an external source.

DATA

Used with	Rocket Launcher Mk 7 (Exp)
	Rocket Launcher Mk 51 Mod 0
Voltage, v AC or DC	12 to 24
Number of firing circuits	12
Firing interval, sec (approx)	0.5
Type of safety plug	Type B
Mounting	bulkhead

Weight, lb	17
Dimensions, in.	7.5 x 11 x 12
List of drawings	Sk 165081
General arrangement drawing.....	Dr 580943
Wiring diagram	Dr 580946
Applicable publications	OP 1246
	OP 1131



Firing Panel Mk 19 Mod 0

FIRING PANEL MARK 20 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 20 Mod 0 is an electrical fire control device used in conjunction with Intervalometer Mk 6 Mods 0 and 1 to fire Rocket Launcher Mk 102 Mod 0. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, a three-position selector switch, three indicator lamps, and four watertight fittings for multi-conductor cables.

The safety plug, which may be of the single-action or double-action, bayonet-locking type, must be inserted in the receptacle and depressed before firing power is transmitted to the intervalometer. The three-position selector switch is a three-pole, double-throw switch with DIRECTOR, LOCAL and OFF positions. The OFF position

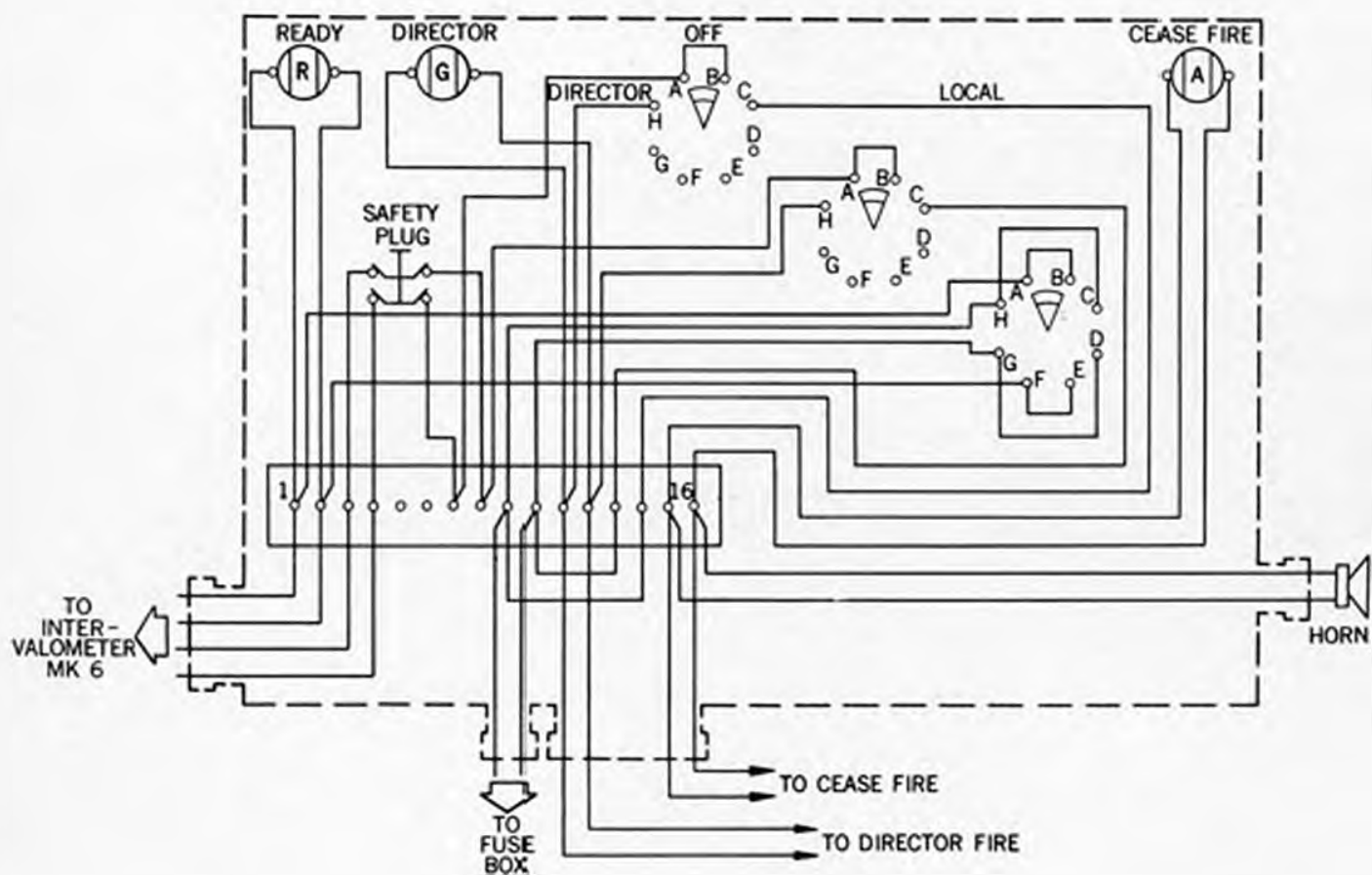
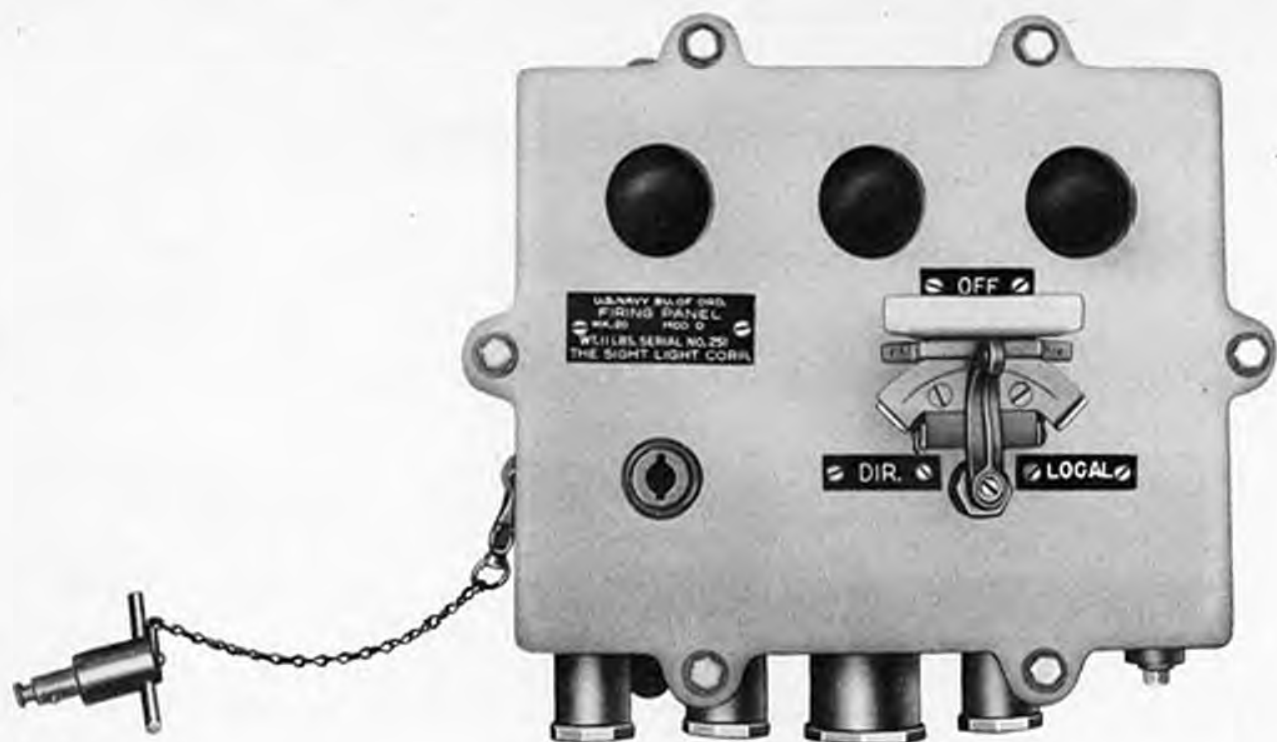
has a lock to prevent accidental movement of the switch to the DIRECTOR or LOCAL position. The three indicator lamps show the electrical condition of the panel. When the selector switch is in the DIRECTOR or the LOCAL position and power is being supplied to the firing panel, a red lens marked READY is illuminated. When a firing circuit from a fire control station director is energized, a green lens marked DIRECTOR is illuminated. When a cease-fire signal is given, an amber lens marked CEASE FIRE is illuminated, and energy is supplied simultaneously to a cease-fire horn.

Electrical power is supplied by an external source.

DATA

Used with Rocket Launcher Mk 102 Mod 0
Voltage, v AC 115
Number of firing circuits 1
Firing interval, sec (approx) 0.7
Type of safety plug Type B or D
Mounting bulkhead

Weight, lb 11
Dimensions, in. 6.5 x 10.5 x 12
List of drawings not assigned
General arrangement drawing Sk 145117
Wiring diagram Sk 145117
Applicable publications OP 1424 (Preliminary)



Firing Panel Mk 20 Mod 0

FIRING PANEL MARK 20 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 20 Mod 1 is an electrical fire control device used in conjunction with Intervalometer Mk 6 Mods 0 and 1 to fire Rocket Launcher Mk 101 Mods 0 and 1. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, a three-position selector switch, three indicator lamps, and four watertight fittings for multi-conductor cables. Externally, Firing Panel Mk 20 Mod 1 is identical with Firing Panel Mk 20 Mod 0 except for a change in one of the labels on the selector switch.

The safety plug, which may be of the single-action or double-action, bayonet-locking type, must be inserted in the receptacle and depressed before firing power is transmitted to the intervalometer. The three-position selector switch is a three-pole, double-throw switch with DIRECTOR, OFF, and DIRECTOR positions. The OFF position has a lock to prevent accidental movement of the switch to either of the DIRECTOR positions.

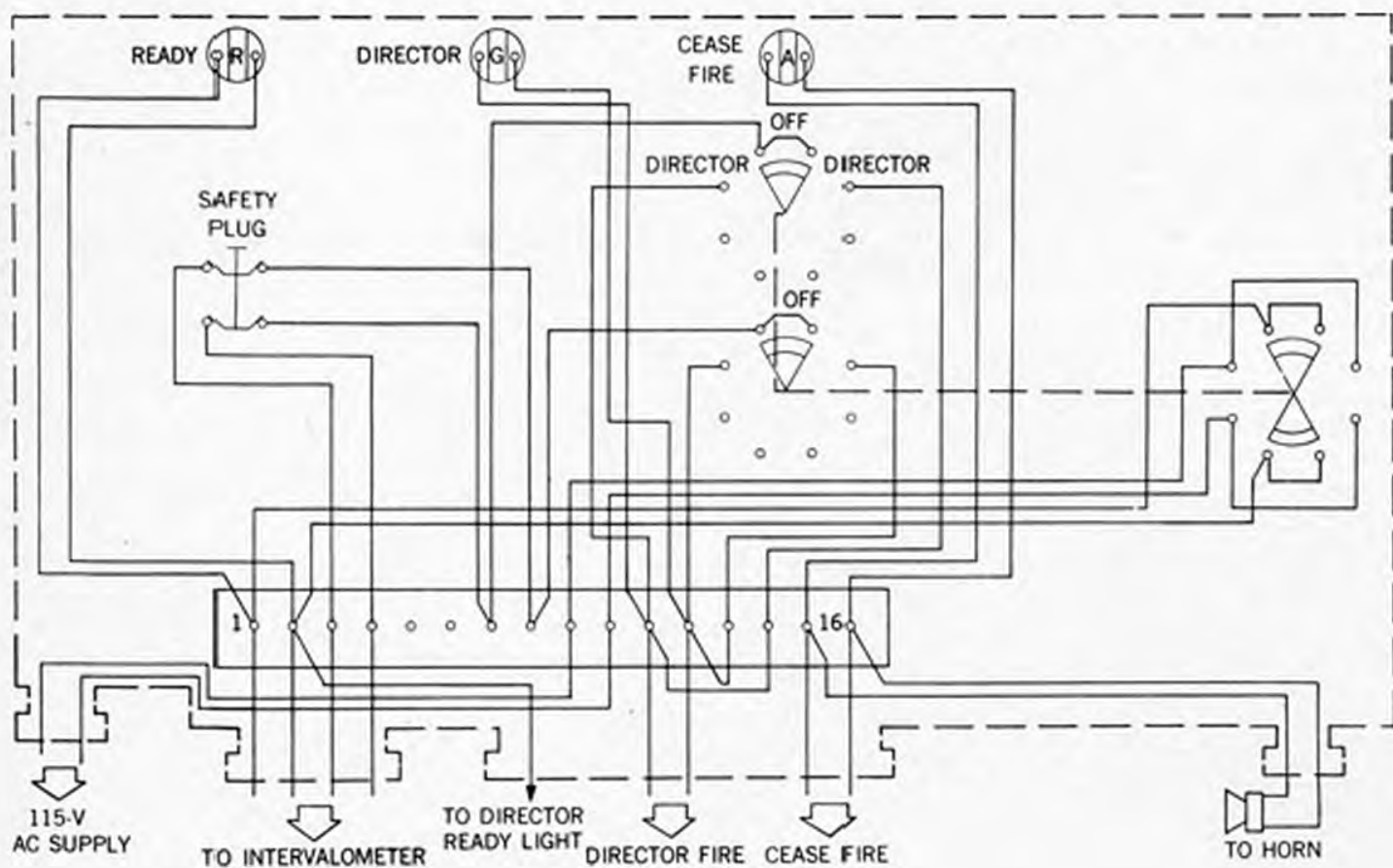
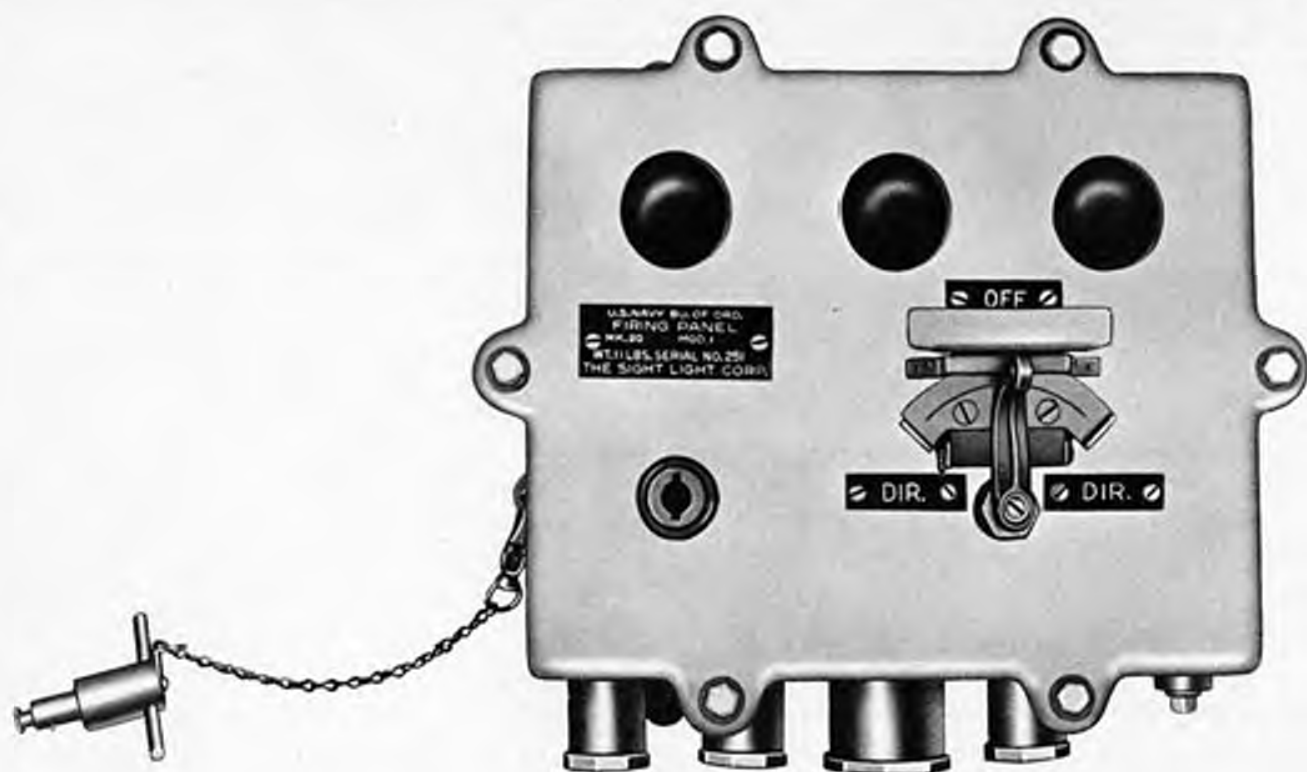
The three indicator lamps show the electrical condition of the panel. When the selector switch is in either of the DIRECTOR positions and power is being supplied to the firing panel, a red lens marked READY is illuminated. When a firing circuit from a fire control station director is energized, a green lens marked DIRECTOR is illuminated. When a cease-fire signal is given, an amber lens marked CEASE FIRE is illuminated, and energy is supplied simultaneously to a cease-fire horn. Electrically, Firing Panel Mk 20 Mod 1 differs from Firing Panel Mk 20 Mod 0 in that the LOCAL selector position has been replaced by a DIRECTOR position. The wiring of Firing Panel Mk 20 Mod 1 is such that the functions of the circuit are the same when the selector switch is in either of the DIRECTOR positions.

Electrical power is supplied by an external source.

DATA

Used with Rocket Launcher Mk 101 Mods 0, 1
Voltage, v AC 115
Number of firing circuits 1
Firing interval, sec (approx) 0.7
Type of safety plug Type B or D
Mounting bulkhead

Weight, lb 11
Dimensions, in. 6.5 x 10.5 x 12
List of drawings not assigned
General arrangement drawing Sk 145117
Wiring diagram Sk 145117
Applicable publications none



Firing Panel Mk 20 Mod 1

FIRING PANEL MARK 24 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 24 Mod 0 is an electrical fire control device used for local control of the firing circuit of Rocket Launcher Mk 108. The unit is enclosed in a watertight metal box that has a safety plug receptacle, a safety plug, a three-position selector switch, a diaphragm-covered push button, four indicator lamps, and five watertight fittings for multi-conductor cables.

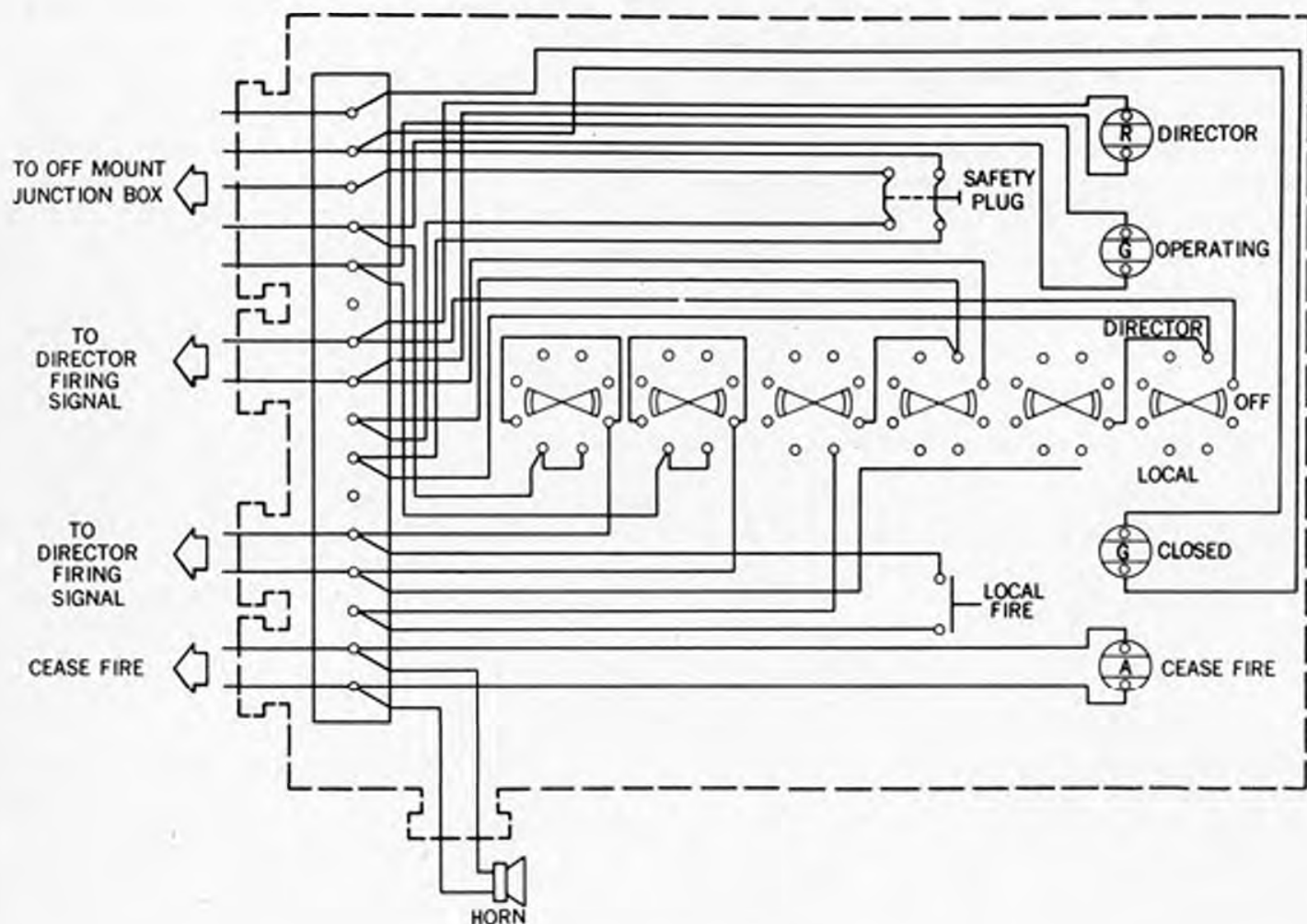
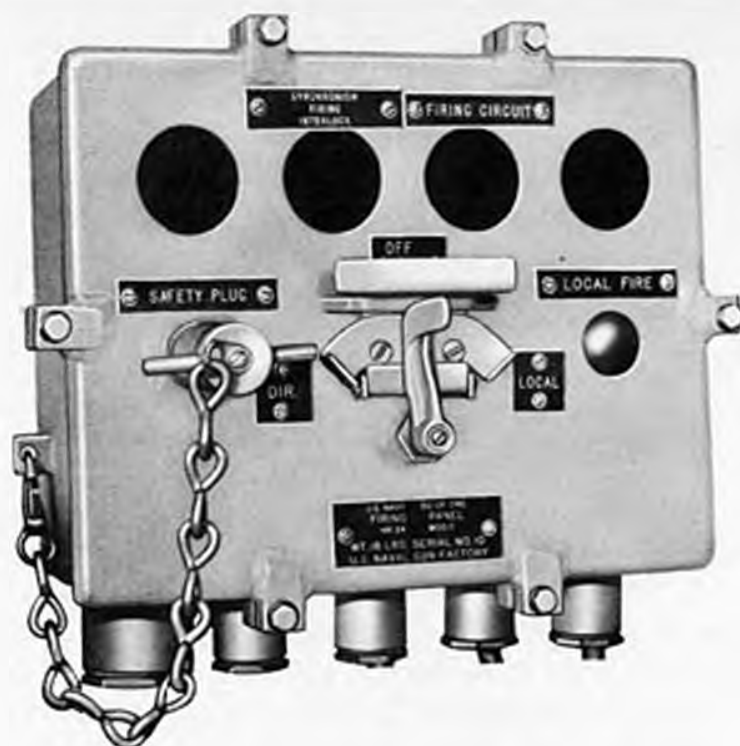
The safety plug, which is of the bayonet-locking, single-action type, must be inserted into the receptacle before the firing circuit can be completed. The safety plug interrupts both positive and negative power leads. The three-position selector switch is a multi-pole rotary switch with DIR., LOCAL, and OFF positions. The four indicator lamps (marked DIRECTOR, OPERATING, CLOSED, and CEASE FIRE) show the electrical

condition of the panel. When the selector switch is in the DIR. position and a firing circuit from a fire control station director is energized, the indicator lamp marked DIRECTOR is illuminated. A synchronism firing interlock is used with the firing panel; when this interlock is operating, the pilot indicator lamp marked OPERATING is illuminated. When the firing circuit is energized, the pilot indicator lamp marked CLOSED is illuminated. If the selector switch is thrown to the LOCAL position, the firing circuit can be completed only when the diaphragm-covered push button marked LOCAL FIRE is depressed. When a cease-fire signal is transmitted to the firing panel, the pilot indicator lamp marked CEASE FIRE is illuminated, and energy is supplied to a cease-fire horn. Electrical power is supplied by an external source.

DATA

Used with.....Rocket Launcher Mk 108 Mods 1,2, and 3
Voltage, v AC 115
Number of firing circuits..... 1
Firing interval none
Type of safety plug.....Type D
Mounting bulkhead
Weight, lb 18

Dimensions, in. 4 x 9 x 11
List of drawings Sk 260403
General arrangement drawing..... Dr 713825
Wiring diagram..... Dr 788836
Applicable publications..... OP 1754
OP 1894 (Preliminary)
OD 7567



Firing Panel Mk 24 Mod 0

FIRING PANEL MARK 26 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 26 Mod 0 is an electrical fire control device used for underwater battery plot control of the firing circuit of Projectors Mk 10 and 11. The unit is enclosed in a watertight metal box that has a range dial, crank, two-position selector switch, three-position selector switch, pistol-grip type firing key, and four indicator lamps marked INTERLOCK CLOSED, INTERLOCK OPEN, READY, and FIRE.

The range dial has two indicators, one of which is controlled by synchro inputs of advance range received from a computer external to the firing panel, and the other by manual inputs of effective range set in by the crank marked PUSH TO OPERATE. The indicator lamp labeled MOUNT READY is illuminated by personnel at the weapon. When this lamp is illuminated, the three-position selector switch (used to select the type of fire desired) is moved from the OFF position to either the AUTO or MANUAL position. This action

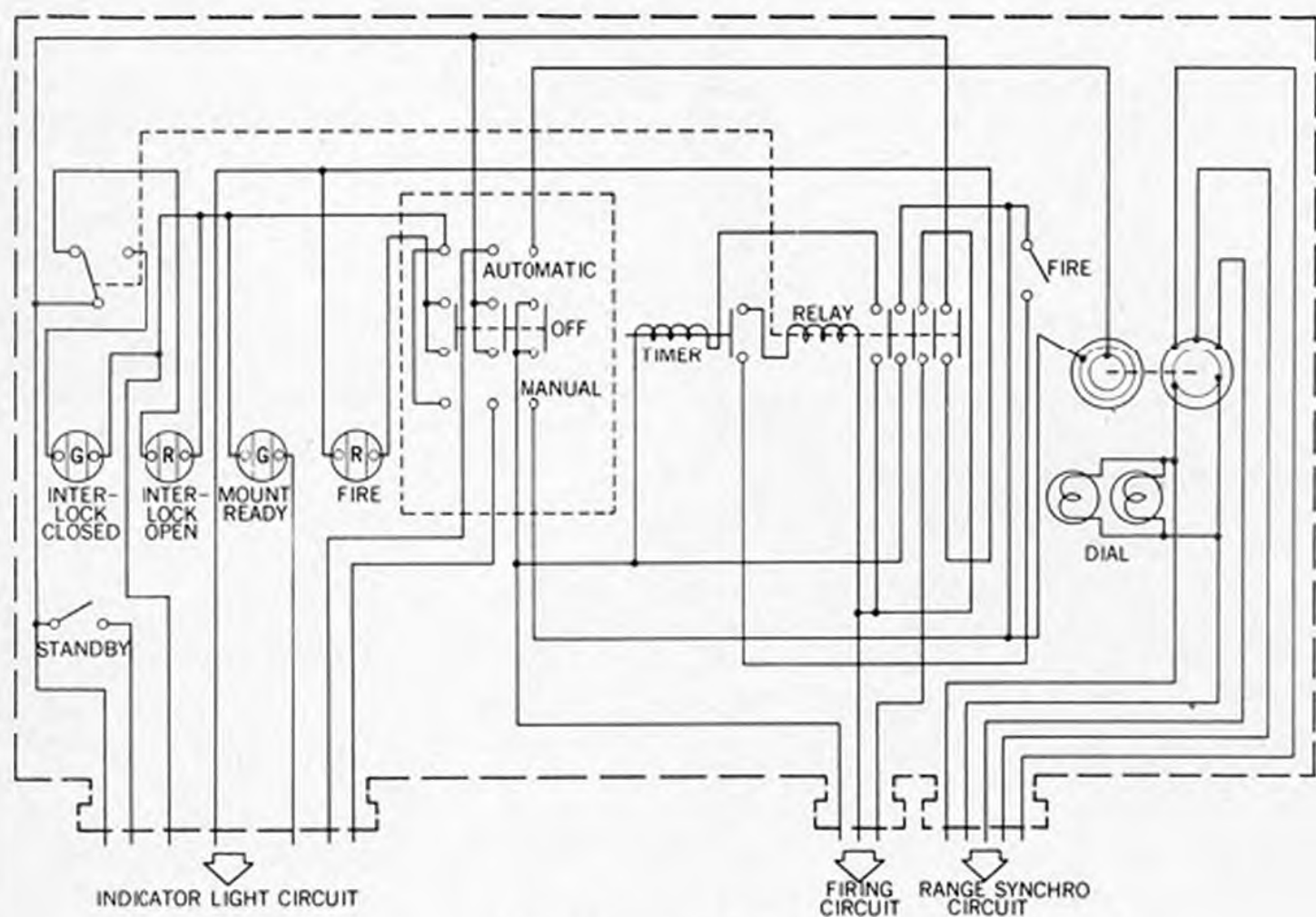
cocks a solenoid within the panel and illuminates the indicator lamp labeled INTERLOCK CLOSED. The two-position selector switch, which has an OFF and a STANDBY position, is used to warn personnel at the mount prior to firing. When the three-position selector switch is in the AUTO position, the firing circuit is not energized until the advance range from the computer matches the effective range set in by hand. When the switch is in the MANUAL position, the firing circuit is energized by squeezing the firing key. When the firing circuit is energized by either of these actions, a timer within the panel holds the firing circuit closed for a short period (approximately 2.5 seconds). During this period, the indicator lamp marked FIRE is illuminated; at the end of the period the solenoid is released, extinguishing the INTERLOCK CLOSED lamp and illuminating the INTERLOCK OPEN lamp. In order to close the firing circuit again, it is necessary to first cock the solenoid by momentarily throwing the three-position selector switch to the OFF position.

DATA

Used withProjectors Mk 10 and 11
Voltage, v AC115
Number of firing circuits 1
Firing interval, sec2.5*
Type of safety plug none
Mountingbulkhead

*Maximum time firing circuit is energized

Weight, lb71
Dimensions, in.9 x 13.5 x 17.5
List of drawings Sk 105464
General arrangement drawing Dr 698479,80
Wiring diagramDr 698439
Applicable publicationsOD 7376



Firing Panel Mk 26 Mod 0

FIRING PANEL MARK 26 MOD 1

IN SERVICE

DESCRIPTION

Firing Panel Mk 26 Mod 1 is an electrical fire control device used for underwater battery plot control of the firing circuit of Projector Mk 15 Mod 0. The unit is enclosed in a watertight metal box that has a range dial, crank, three-position selector, pistol-grip type firing key, and four indicator lamps marked INTERLOCK CLOSED, INTERLOCK OPEN, READY, and FIRE. Firing Panel Mk 26 Mod 1 differs from Firing Panel Mk 26 Mod 0 in that the indicator lamps are smaller, the STANDBY switch is removed, and the shape of the box is modified. Also, electronic components are improved. Functionally, the two units are identical.

The range dial has two indicators, one of which is controlled by synchro signal inputs of advance range received from a computer external to the firing panel, and the other by manual inputs of effective range set in by the crank marked PUSH TO OPERATE. The indicator lamp labeled READY is illuminated by personnel at the weapon. When this lamp is illuminated, the three-position selector switch (used to select the type of fire

desired) is moved from the OFF position to either the AUTO or MANUAL position. This action cocks a solenoid within the panel, and illuminates the indicator lamp labeled INTERLOCK CLOSED. When the three-position selector switch is in the AUTO position, the firing circuit is not energized until the advance range from the computer matches the effective range set in by hand. When the switch is in the MANUAL position, the firing circuit is energized by squeezing the firing key. When the firing circuit is energized by either of these actions, a timer within the panel holds the firing circuit closed for a short period (approximately 2.5 seconds). During this period, the indicator lamp marked FIRE is illuminated; at the end of the period the solenoid is released, extinguishing the INTERLOCK CLOSED lamp and illuminating the INTERLOCK OPEN lamp. In order to close the firing circuit again, it is necessary to first cock the solenoid by momentarily throwing the three-position selector switch to the OFF position.

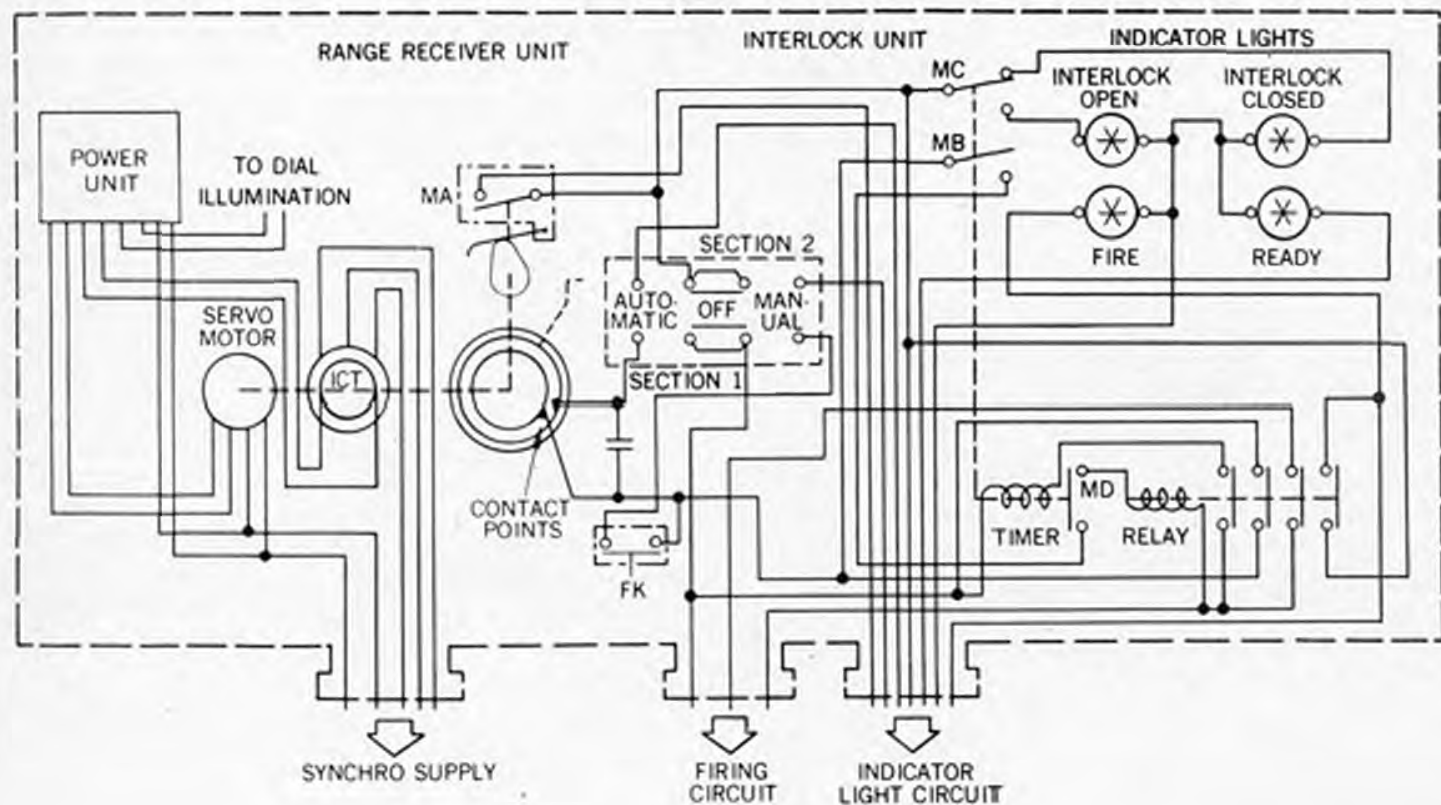
Accomplishment of Ordalt 3101 changes Firing Panel Mk 26 Mod 1 to Firing Panel Mk 26 Mod 3.

DATA

Used with Projector Mk 15 Mod 0
Voltage, v AC 115
Number of firing circuits 1
Firing interval, sec 2.5*
Type of safety plug none
Mounting bulkhead

Weight, lb 71
Dimensions, in. 9 x 13.5 x 17.5
List of drawings LD 105513
General arrangement drawing Dr D698638, 41
Wiring diagram Dr D698640
Applicable publications Ordalts 3101, 3120

*Maximum time firing circuit is energized



Firing Panel Mk 26 Mod 1

FIRING PANEL MARK 26 MOD 2

IN SERVICE

DESCRIPTION

Firing Panel Mk 26 Mod 2 is an electrical fire control device used for underwater battery plot control of the firing circuit of Rocket Launcher Mk 108. The unit is enclosed in a watertight metal box that has a range dial, crank, three-position selector switch, pistol-grip type firing key, and two indicator lamps marked READY and FIRE. Firing Panel Mk 26 Mod 2 differs in appearance from Firing Panel Mk 26 Mod 1 in that it has only two indicator lamps.

The range dial has two indicators, one of which is controlled by synchro signal inputs of advance range received from a computer external to the firing panel, and the other by manual inputs of effective range set in by the crank marked PUSH TO OPERATE. The indicator lamp labeled READY is illuminated when a rocket is in the guide of the launcher. When this lamp is illuminated, the three-position selector switch (used to select the type of fire desired) is moved from the OFF position to either the AUTO or MANUAL

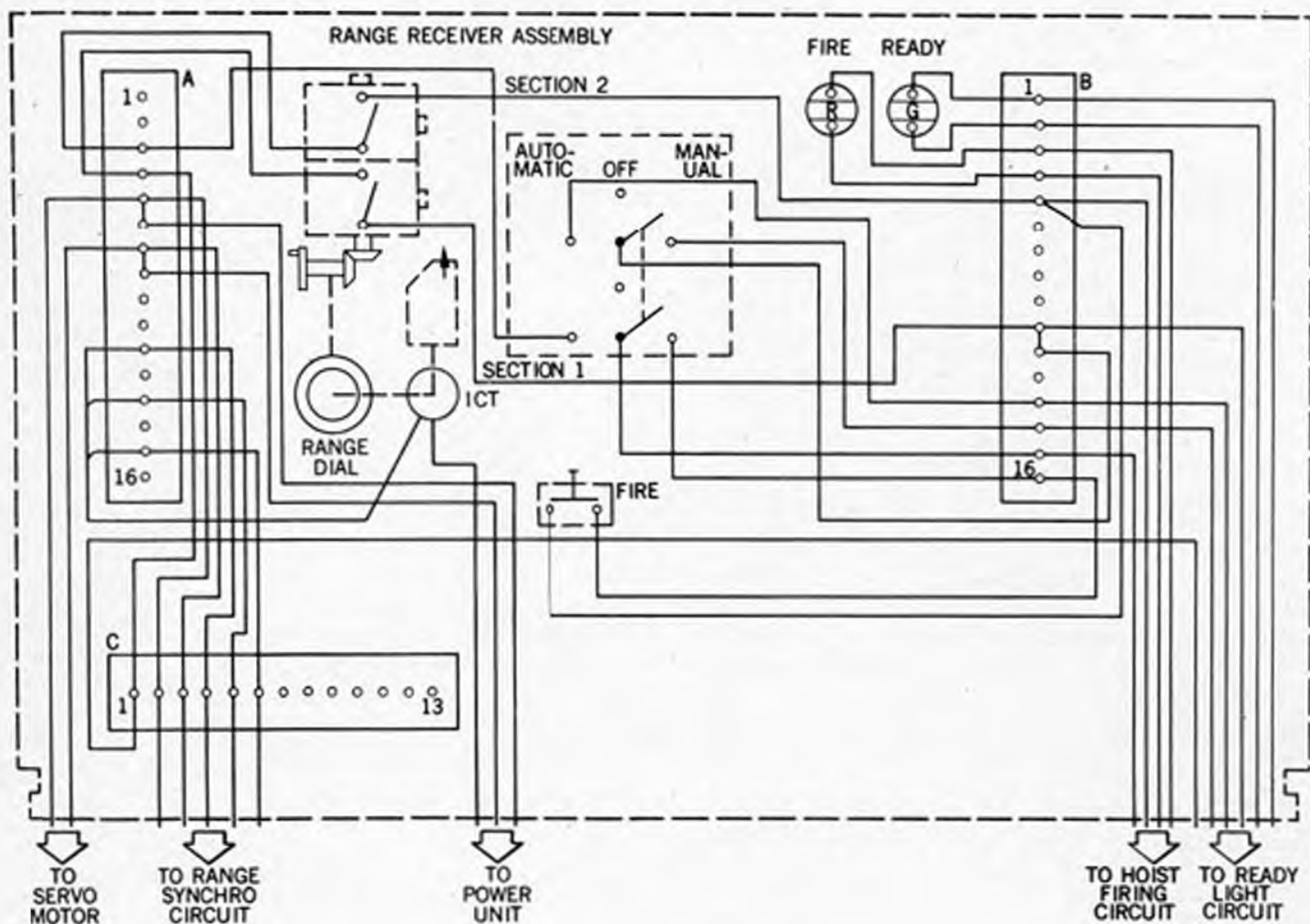
position. When the switch is in the AUTO position, a standby light at the launcher is illuminated as the advance range decreases to within 300 yards of the handset effective range. As soon as the advance range equals the effective range, the hoist circuit and the firing circuit of the launcher are energized. Firing starts as soon as the elevation and train positions of the launcher guide are matched with the director orders, and continues automatically until stopped at the launcher. When the three-position selector switch is in the MANUAL position, the rocket launcher hoist circuit and firing circuit are controlled by the firing key on the firing panel. The circuits are closed by squeezing the firing key as soon as the effective range and the advance range are equal. The indicator lamp labeled FIRE is illuminated whenever the rocket launcher hoist circuit and firing circuit are closed.

Accomplishment of Ordalt 3101 changes Firing Panel Mk 26 Mod 2 to Firing Panel Mk 26 Mod 4.

DATA

Used with..... Rocket Launcher Mk 108 All Mods
Voltage, v AC 115
Number of firing circuits..... 1
Firing interval..... dependent upon director signals
Type of safety plug..... none
Mounting..... bulkhead

Weight, lb 62
Dimensions, in. 9 x 13.5 x 17.5
List of drawings LD 105514
General arrangement drawing Dr D698605,6
Wiring diagram Dr D698602
Applicable publications Ordalt 3101, 3120



Firing Panel Mk 26 Mod 2

FIRING PANEL MARK 26 MOD 3

IN SERVICE

DESCRIPTION

Firing Panel Mk 26 Mod 3 is an electrical fire control device used for underwater battery plot control of the firing circuit of Projector Mk 15 Mod 0. The unit is enclosed in a watertight metal box that has a range dial, crank, three-position selector switch, pistol-grip type firing key, and four indicator lamps marked INTERLOCK CLOSED, INTERLOCK OPEN, READY, and FIRE. Firing Panel Mk 26 Mod 3 is identical in appearance with Firing Panel Mk 26 Mod 1; it differs in improved internal electrical components and decreased timing cycle.

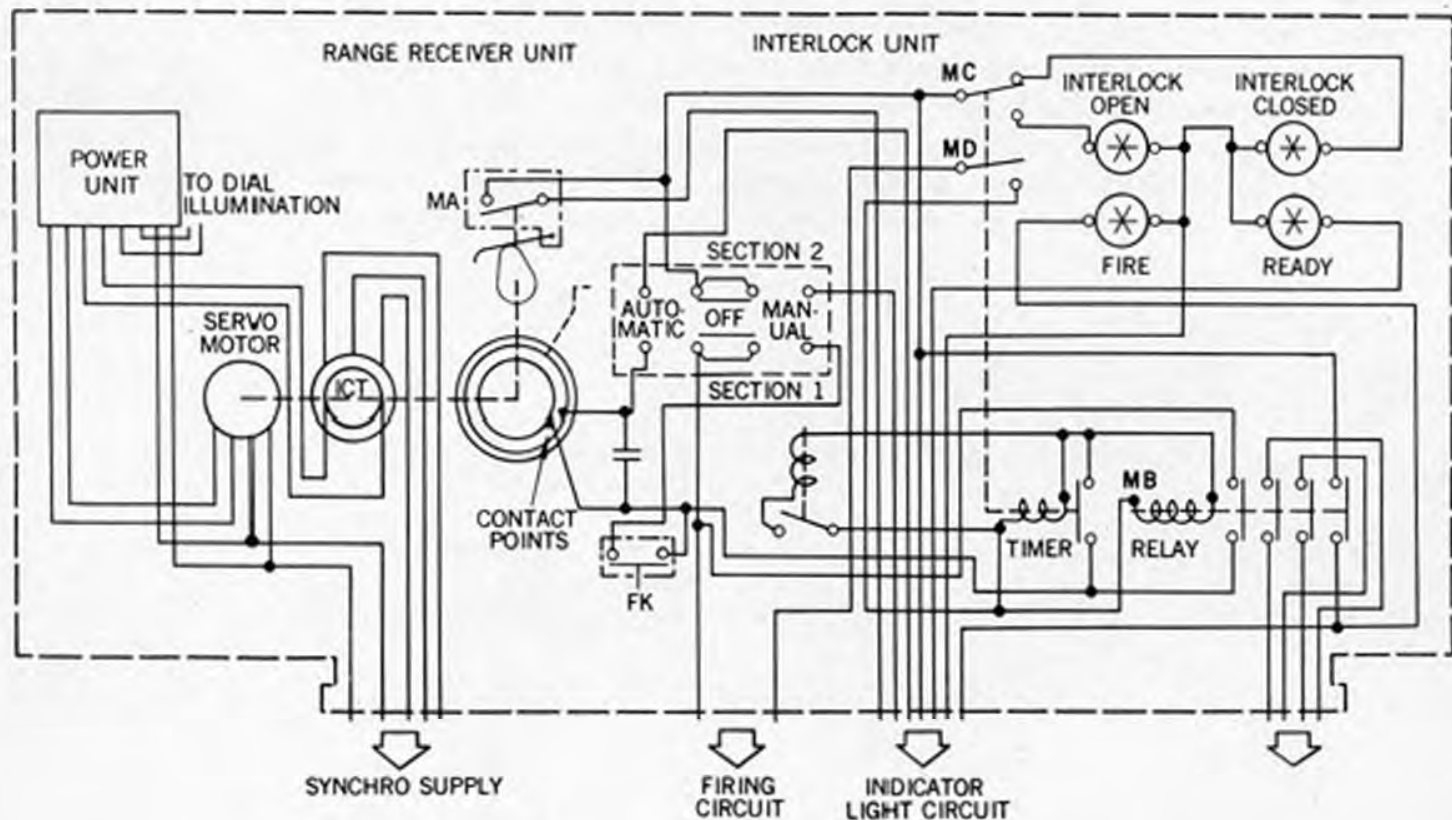
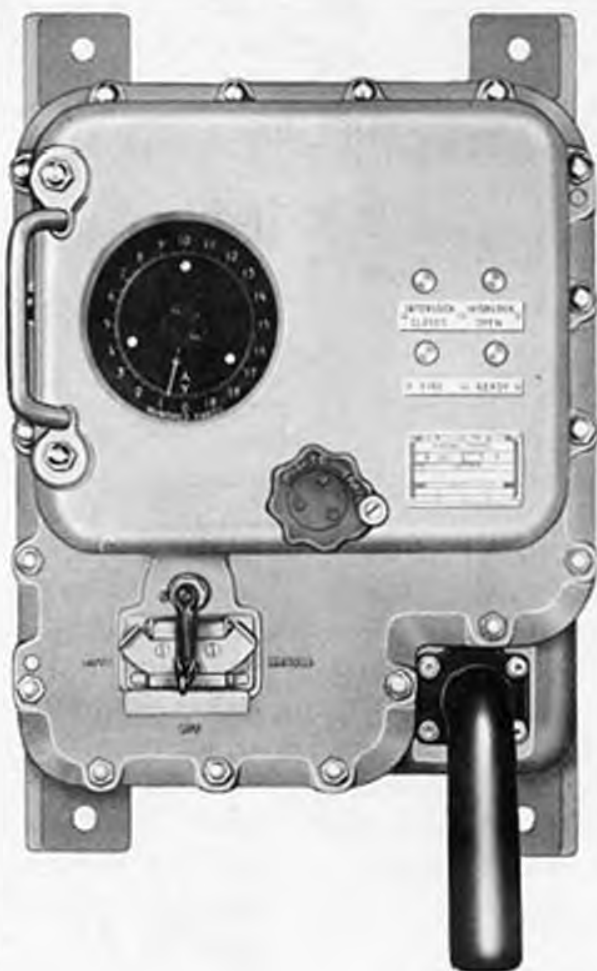
The range dial has two indicators, one of which is controlled by synchro signal inputs of advance range received from a computer external to the firing panel, and the other by manual inputs of effective range set in by the crank marked PUSH TO OPERATE. The indicator lamp labeled READY is illuminated by personnel at the weapon. When this lamp is illuminated, the three-position

selector switch (used to select the type of fire desired) is moved from the OFF position to either the AUTO or MANUAL position. This action cocks a solenoid within the panel, and illuminates an indicator lamp labeled INTERLOCK CLOSED. When the three-position selector switch is in the AUTO position, the firing circuit is not energized until the advance range from the computer matches the effective range set in by hand. When the switch is in the MANUAL position, the firing circuit is energized by squeezing the firing key. When the firing circuit is energized by either of these actions, a timer within the panel holds the firing circuit closed for two seconds. During this period, the indicator lamp labeled FIRE is illuminated; at the end of the period the solenoid is released, extinguishing the INTERLOCK CLOSED lamp and illuminating the INTERLOCK OPEN lamp. In order to close the firing circuit again, it is necessary to first cock the solenoid by momentarily throwing the three-position selector switch to the OFF position.

DATA

Used with Projector Mk 15 Mod 0
Voltage, v AC 115
Number of firing circuits 1
Timing cycle, seconds 2
Type of safety plug none
Mounting bulkhead

Weight, lb 71
Dimensions, in. 9 x 13.5 x 17.5
List of drawings LD 105816
General arrangement drawing Dr 983013, 4
Wiring diagram Dr 983023
Applicable publications Ordalt 3101



Firing Panel Mk 26 Mod 3

FIRING PANEL MARK 26 MOD 4

IN SERVICE

DESCRIPTION

Firing Panel Mk 26 Mod 4 is an electrical fire control device used for underwater battery plot control of the firing circuit of Rocket Launcher Mk 108. Indirectly, the firing panel controls the firing circuit of this rocket launcher. The unit is enclosed in a watertight metal box that has a range dial, crank, two-position selector switch, three-position selector switch, pistol-grip type firing key, and two indicator lamps marked **WITHIN LIMITS** and **FIRE**. Firing Panel Mk 26 Mod 4 differs from Firing Panel Mk 26 Mod 2 in internal electrical improvements, in the substitution of the **WITHIN LIMITS** lamp for the **READY** lamp, and in that it directly controls the hoist circuit.

The range dial has two indicators, one of which is controlled by synchro signal inputs of advance range received from a computer external to the firing panel, and the other by manual inputs of effective range set in by the crank marked **PUSH TO OPERATE**. The indicator lamp labeled **WITHIN LIMITS** is illuminated when the target is

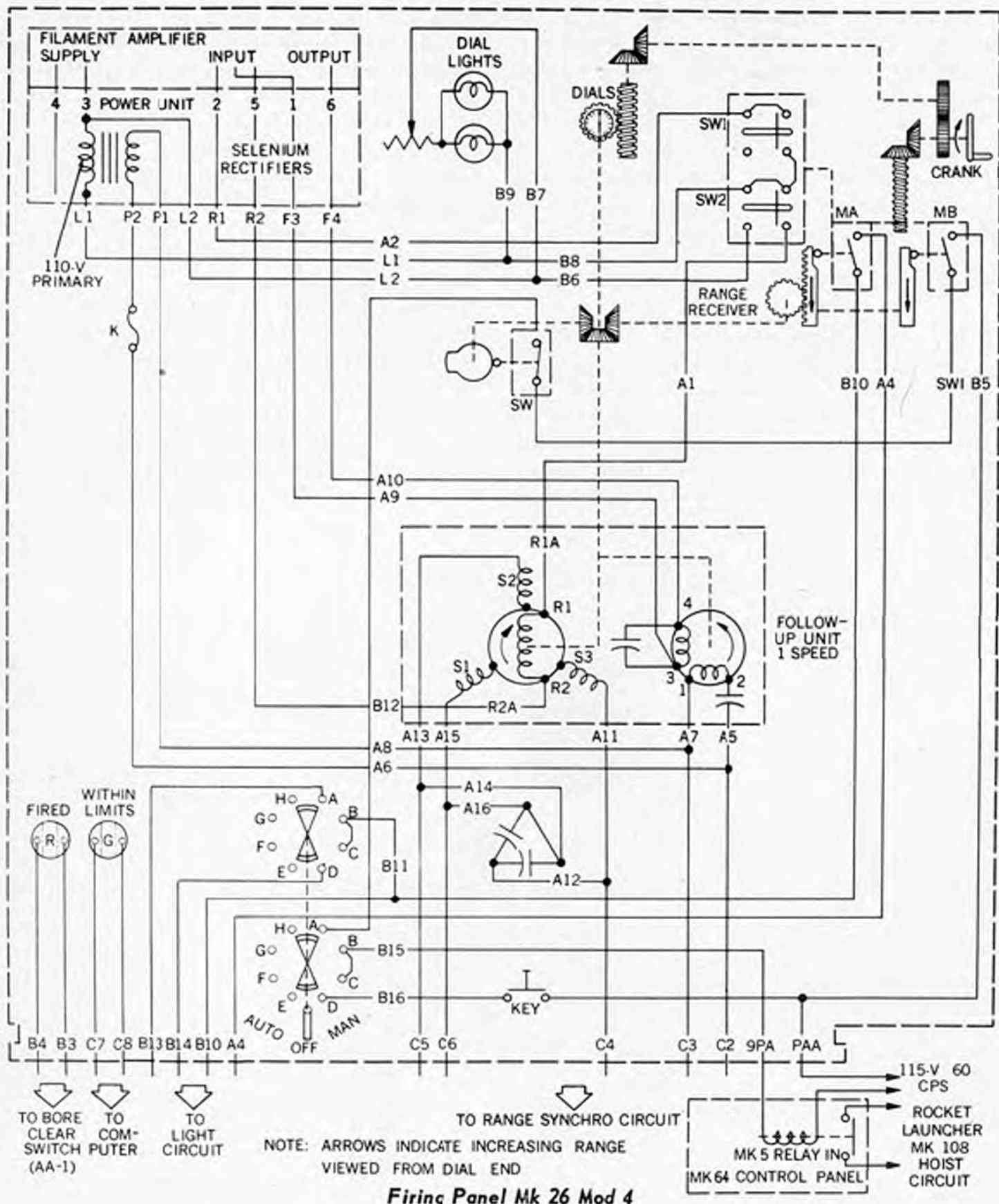
within the range of the launcher. The three-position selector switch, which is used to select the type of fire desired, has an **OFF** position, an **AUTO** position, and a **MANUAL** position. When the switch is thrown to the **AUTO** position, a standby light at the launcher is illuminated as the advance range decreases to within 300 yards of the handset effective range. As soon as the advance range equals the effective range, the hoist circuit of the launcher is automatically energized. (The firing circuit of the launcher is controlled by the hoist circuit and guide position.) Firing starts as soon as the elevation and train positions of the launcher are matched with the director orders, and continues until stopped at the launcher. When the three-position selector switch is in the **MANUAL** position, the rocket launcher hoist circuit is controlled manually by the firing key. The hoist circuit is closed by squeezing the firing key as soon as the effective range and the advance range are equal. The indicator lamp labeled **FIRE** is illuminated as soon as the rocket leaves the guide of the launcher.

*Firing Panel Mk 26 Mod 4*

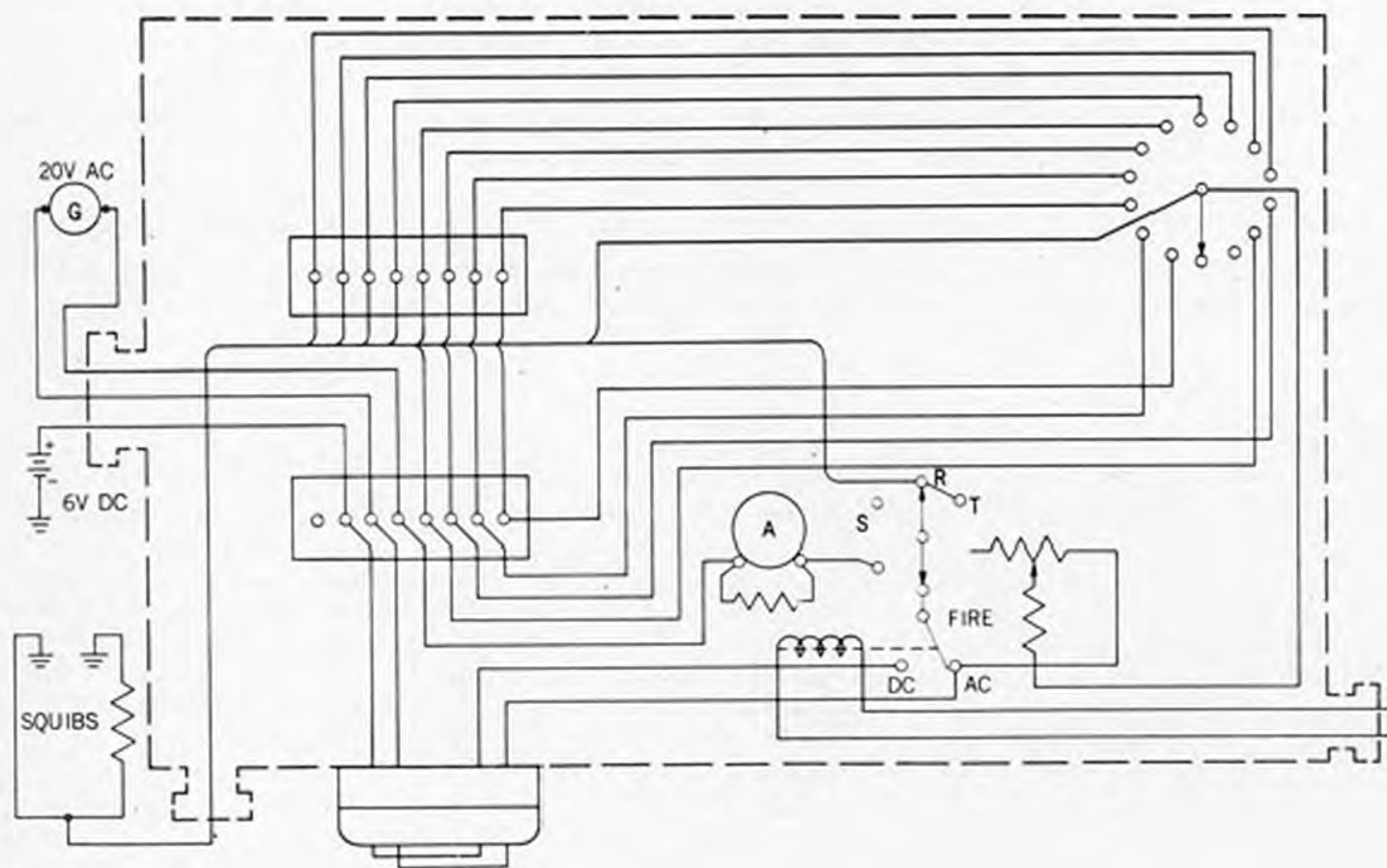
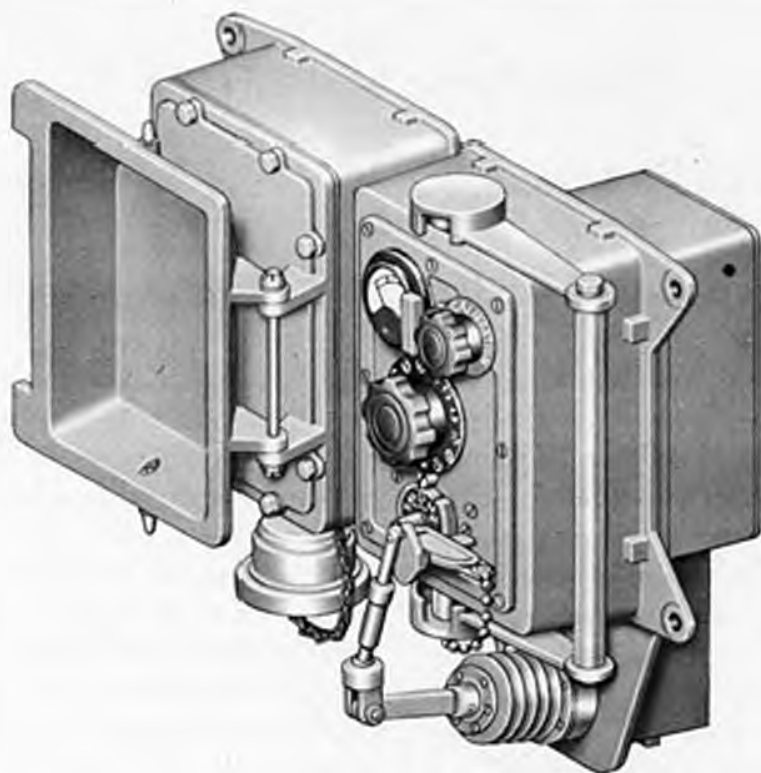
DATA

Used with Rocket Launcher Mk 108 All Mods
Voltage, v AC 115
Number of firing circuits..... 1
Firing interval.....dependent upon director signals
Type of safety plug.....none
Mounting..... bulkhead

Weight, lb 62
Dimensions, in. 9 x 13.5 x 17.5
List of drawings LD 105817
General arrangement drawing Dr 983015,6
Wiring diagram Dr 983017
Applicable publications Ordalt 3101



IN SERVICE



Firing Panel Mk 27 Mod 0

FIRING PANEL MARK 28 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 28 Mod 0 is an electrical fire control device used in conjunction with Firing Panel Mk 11 Mod 3 in Beacon Launching System Mk 3 Mod 0. The unit is enclosed in four watertight metal boxes: two contain transformers; the third contains a single push button used for abeam firing; and the fourth, which is a control panel, is electrically connected to the other three. This control panel contains a safety plug receptacle, a safety plug, three diaphragm-covered push button switches, two indicator lamps, three indicator dials, and eight watertight fittings for multi-conductor cables.

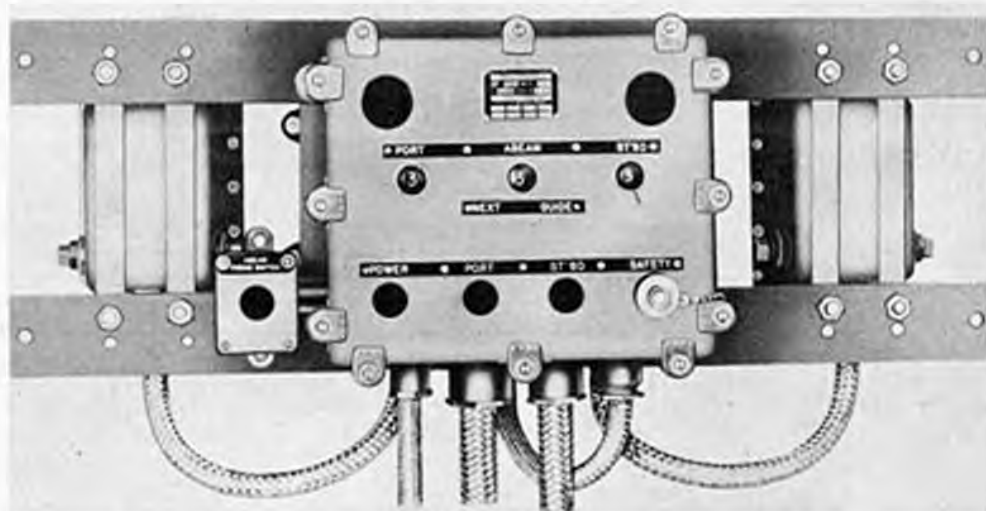
The safety plug on the control panel is of the double-action bayonet-locking type; it contains a push button that must be depressed in the same manner as a firing push button before the firing panel power circuit can be closed. In Beacon Launching System Mk 3 Mod 0 the switch controlled by this safety plug push button is in

series with a similar switch in Firing Panel Mk 11 Mod 3 and the safety plugs at the rocket launchers. One of the three push button switches on the control panel is a power switch; the other two are port and starboard firing switches. One of the indicator lamps is a power-available indicator lamp that is illuminated whenever 115-volt power is available. The other indicator lamp, located in the upper right-hand corner of the control panel, is illuminated whenever electric power is available and the safety plugs at the launchers and panel are in place. Three rotary stepper units (one each for the port and starboard rocket launchers, and one for the two abeam launchers) are contained within the control panel. Each time a firing circuit is energized, the stepper unit (and an attached indicator dial) advances one position to connect the firing circuit to the next guide. The next guide to be fired from each circuit is indicated by the number appearing on the control panel indicator dials.

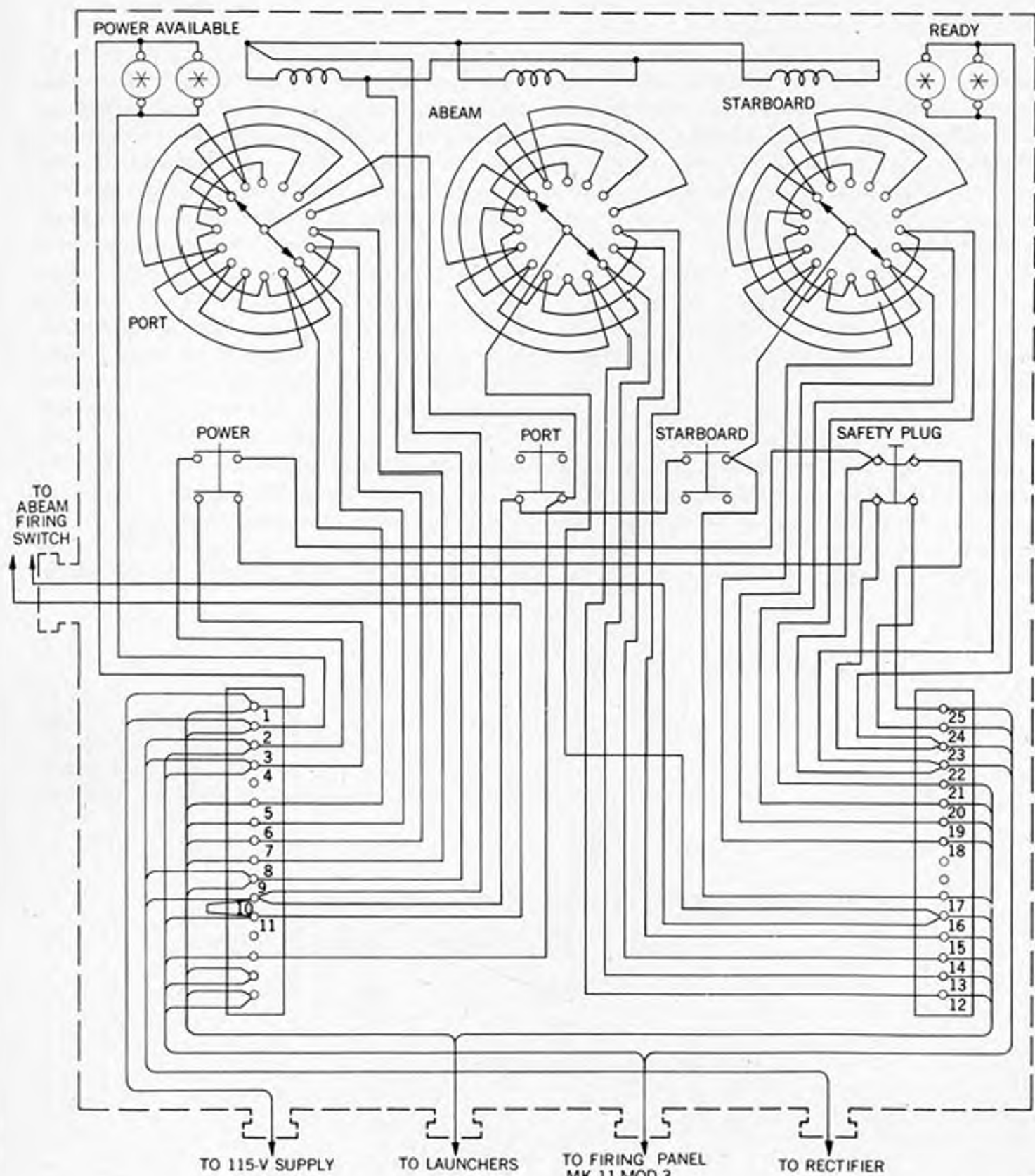
DATA

Used with.....Rocket Launchers Mk 38 Mod 0, Mk 39 Mod 0
Voltage, v AC115
Number of firing circuits.....16
Firing interval.....manually controlled
Type of safety plug.....Type C
Mounting.....bulkhead

Weight, lb96
Dimensions (control panel), in.5 x 10 x 12
List of drawings LD 256763
General arrangement drawing Dr 513766
Wiring diagram Dr 513767
Applicable publications..... OP 1826



Firing Panel Mk 28 Mod 0



Firing Panel Mk 28 Mod 0

FIRING PANEL MARK 30 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 30 Mod 0 is an electrical fire control device used to fire the four rocket launchers of Beacon Launching System Mk 2 Mod 0. The unit is enclosed in a watertight metal box that has six two-position selector switches, 38 indicator lamps, and two watertight fittings for multi-conductor cables.

One of the two-position selector switches is a power switch; another is a firing switch. When the power switch is thrown to the ON position, the indicator lamp adjacent to the power switch is illuminated. The remaining four selector switches are used to select the combination of launchers to be fired. Below each of the launcher selector switches is an indicator lamp that is illuminated when a safety plug is inserted into a

launcher. Each of the four rocket launchers in Beacon Launching System Mk 2 Mod 0 has four guides, and each of these guides is represented by two indicator lamps on the firing panel. One indicator lamp for each of the 16 rocket guides is illuminated when the guide is empty; each of the other lamps is illuminated when the firing circuit is closed and the rocket is fired. If a misfired rocket remains in the guide, this lamp is not illuminated. An indicator lamp labeled FIRING SIGNAL FROM OTHER STATION is illuminated if an alternate firing panel at another firing station is used to fire the launchers. This alternate firing panel may be used with Firing Panel Mk 30 Mod 0 to provide alternate control. When the alternate panel fires the launchers, a buzzer within Firing Panel Mk 30 Mod 0 sounds.

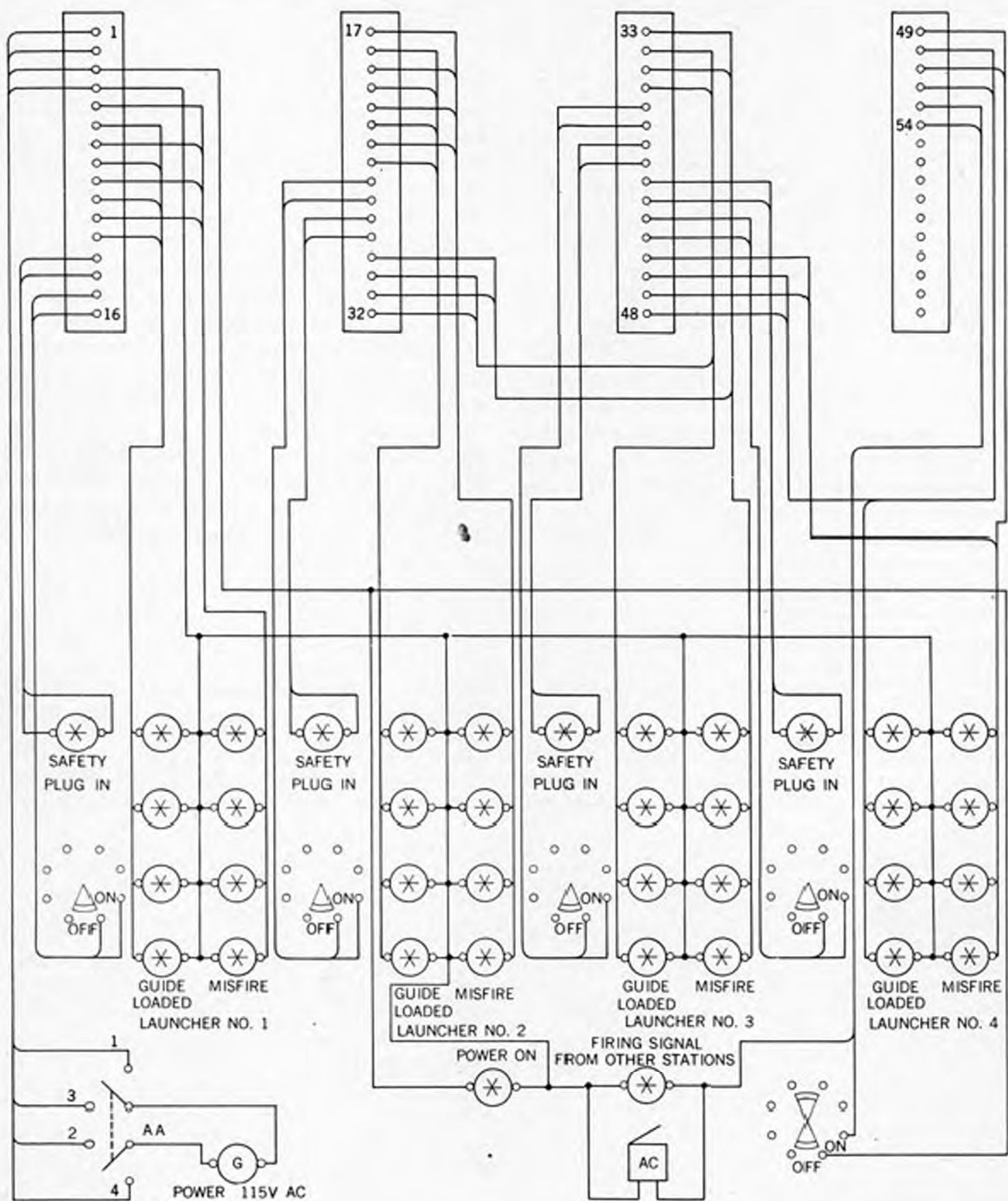
DATA

Used with.....Rocket Launchers Mk 38 Mod 1, Mk 39 Mod 1
Voltage, v AC115
Number of firing circuits16
Firing interval, secmanually controlled
Type of safety plug.....none
Mountingbulkhead

Weight, lb75
Dimensions, in.24 x 25 x 5
List of drawingsLD 101780
General arrangement drawing.....Dr 863405
Wiring diagram.....Dr 863755
Applicable publicationsOP 1805



Firing Panel Mk 30 Mod 0



Firing Panel Mk 30 Mod 0

FIRING PANEL MARK 33 MOD 0

IN SERVICE

DESCRIPTION

Firing Panel Mk 33 Mod 0 is an electrical fire control device used for local control of the firing circuit of Projectors Mk 10, 11, and 15. This firing panel replaces Firing Panels Mk 1 and 27. The unit is enclosed in a watertight metal box with a hinged cover, and has a safety plug receptacle, safety plug, ripple switch, indicator dial, three-position switch, calibration rheostat, test indicator, and two diaphragm-covered push buttons.

The safety plug is a four-prong, plug-in, connector-type plug that must be inserted into the receptacle before power can be supplied to the firing panel. The ripple switch has a total of 16 positions: 12 numbered positions, one OFF position, and three unnumbered positions. The indicator dial shows the position of the ripple switch at all times. The three-position switch, which has positions labeled TEST, OFF, and

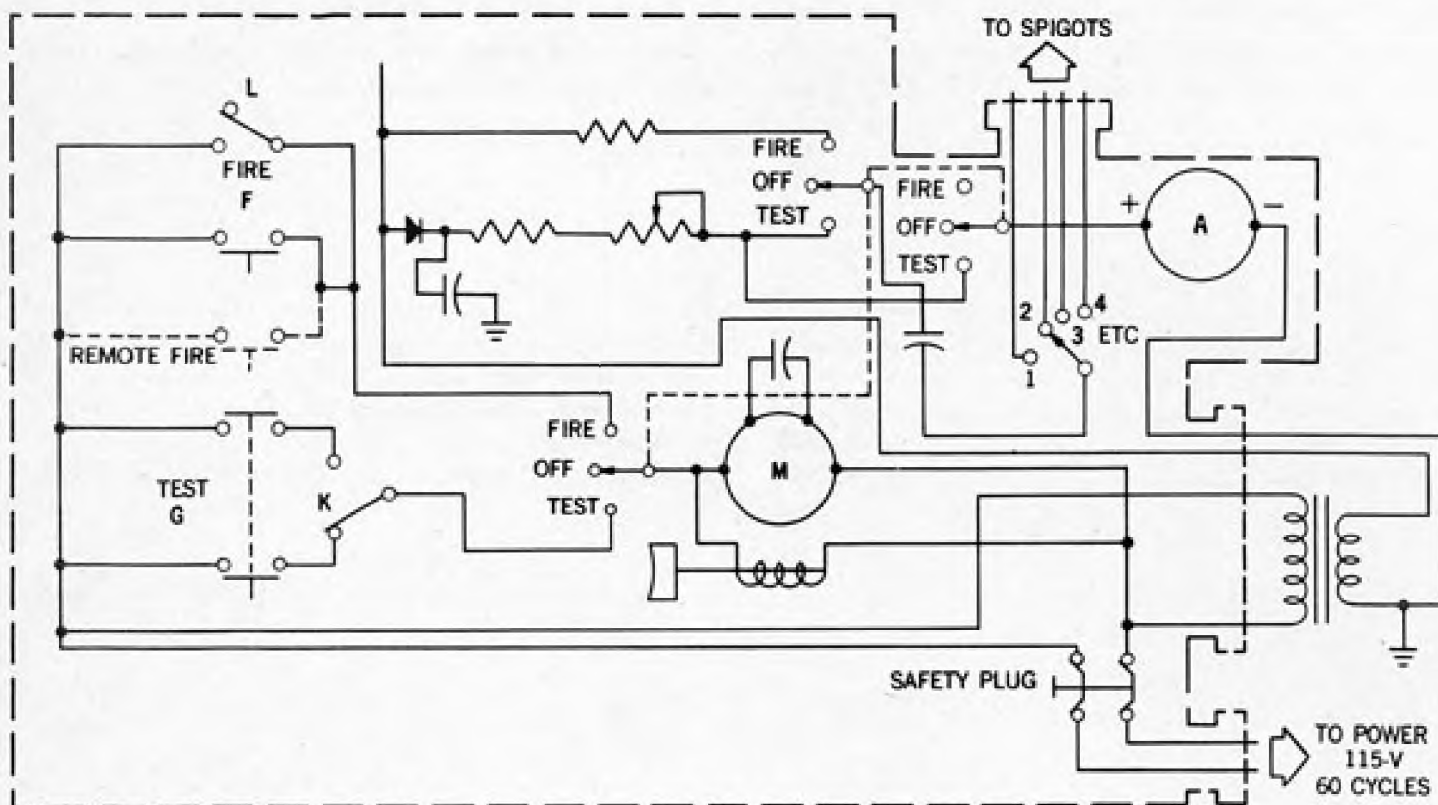
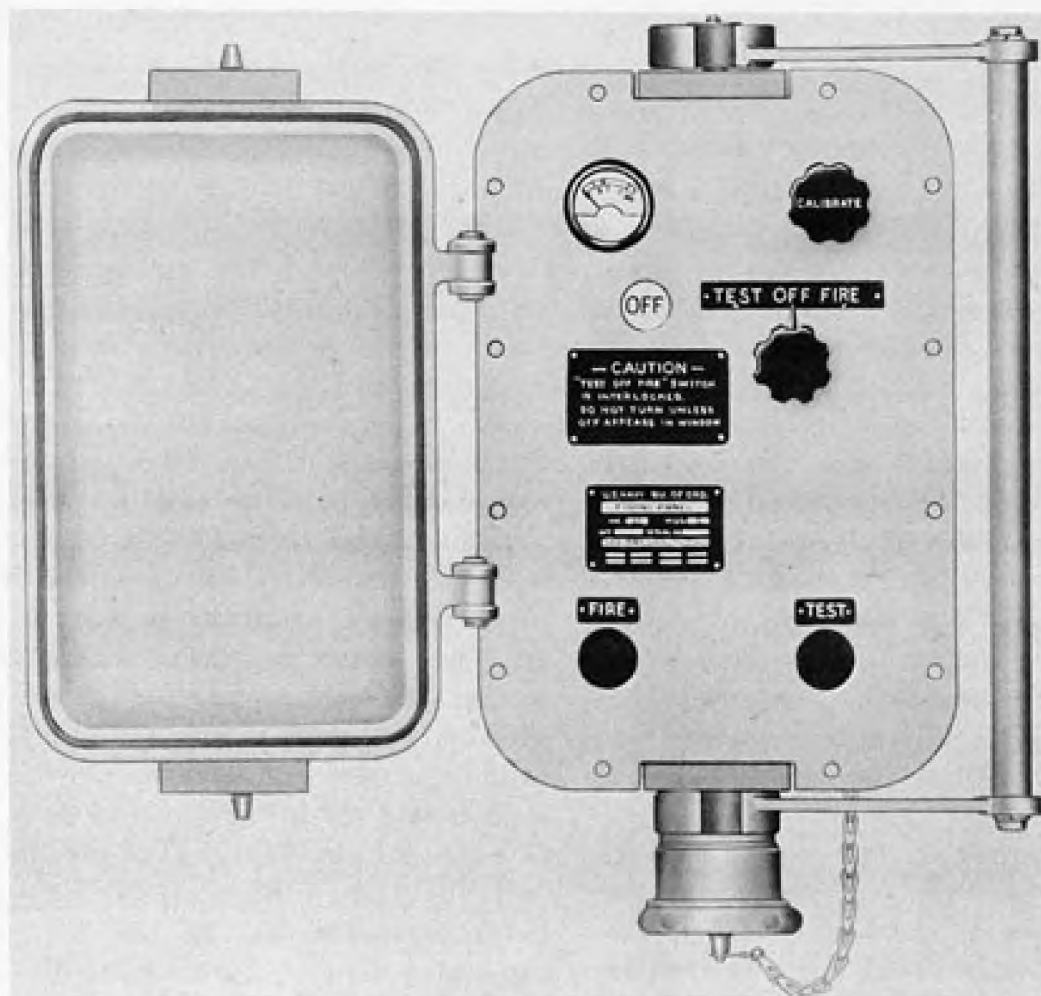
FIRE, must be in the OFF position when the ripple switch is being cocked. When the ripple switch has been rotated to the OFF position, the three-position switch can be moved to either the TEST or FIRE position. In the TEST position, the ripple switch and the attached indicator dial can be rotated one position at a time by depressing the push button labeled TEST. The calibration rheostat and the test indicator are used to test the firing circuit in each one of the 12 numbered positions. When the three-position switch is in the FIRE position, the ripple switch can be rotated through all 12 firing positions by depressing the push button labeled FIRE for one second.

Accomplishment of Ordalts 3172 and 3173 removes provisions for testing the firing circuit with the projector loaded.

DATA

Used with Projectors Mk 10, 11, 15
Voltage, v AC 115
Number of firing circuits 12
Firing interval, sec 0.2
Type of safety plug Type E
Mounting bulkhead

Weight, lb 45
Dimensions, in. 9 x 9 x 15
List of drawings LD 105748
General arrangement drawing Dr D982959
Wiring diagram Dr D982932
Applicable publications Ordalts 3153, 3161, 3172, 3



Firing Panel Mk 33 Mod 0

CONTROL PANEL MARK 64 MOD 0

IN SERVICE

DESCRIPTION

Control Panel Mk 64 Mod 0 is the control center for Rocket Launcher Mk 108. The panel is enclosed in a watertight metal box with a watertight cover on which are mounted rotary selector switches, diaphragm-covered push buttons, and indicator lamps.

Of seven three-position switches, switch B has a stop arrangement that permits only two of the three positions to be used. These switches are used to control and test the launcher. The two-position switches in the lower right-hand corner

of the panel control the supply of power to the train and elevation motors, and prevent these motors from being started when the drives are in remote control. The START and STOP push buttons control the hoist motor, the elevation motor, and the train motor. Above each pair of push buttons is an indicator lamp that is illuminated when the motor controlled by that pair is running. The remaining 16 indicator lamps show the condition of the launcher at all times. These lamps permit the mount operator to observe the actions of the launcher during testing and operation.

DATA

Used with..... Rocket Launcher Mk 108
Voltage, v AC 115 and 440
Mounting..... bulkhead
Weight, lb 226
Dimensions, in. 36 x 22.8 x 12.5

List of drawings LD 272028
General arrangement drawing Dr 792449
Wiring diagram..... Dr 609741
Applicable publications..... OD 7567
OP 1754



Control Panel Mk 64 Mod 0

11.	Magazine Magazine	Ring latched Ring empty at hoist	BF2 BJ3	BA10 closed (LOAD)
12.	Lower Hoist Lower Hoist Hoist	Lower Hoist down Troy latched up Hoist down Troy empty	CA1 CB1 BH1 CD4	BM3 closed (NORMAL) BB3 closed (NORMAL)
ALTER- NATES	A. B.			BD5 closed (OFF) BA6 closed (LOAD)
13.	A. B. C.	Lower Hoist	CD3	BA13 closed (RUN) BD6 closed (LOWER AMM) CE closed
14.	Magazine Magazine Lower Hoist Magazine Lower Hoist Lower Hoist Lower Hoist	Troy down Ring latched Ring empty at hoist Troy loaded Ring loaded at hoist Troy empty Lower Hoist down Troy latched up	BF2 BJ1 CD1 BJ2 CD2 CA2 CB2	BA10 closed (LOAD) BD1 closed (HOIST AMM) BD2 closed (LOWER AMM) CG closed
15.	A. B.	Magazine	BK BL CC1	BA10 closed (LOAD) BD3 closed (HOIST AMM) BD4 closed (LOWER AMM)
16.	ALTER- NATES	Lower Hoist		BA10 closed (LOAD) CZ closed

Switching Sequence for Control Panel Mk 64 Mod 0

The following tabular material indicates sequential conditions necessary for certain lights to be illuminated. The mechanical condition that is required and the interlock switch that is closed as a result are indicated.

Light	Interlock Circuit	Mechanical Condition	Switch Contact Closed	Other Electrical Condition
2.	Carriage	Guide Latch retracted Guide not vertical	AG2 AF2	
3.	Lower Hoist	Troy not latched up	CB3	
4.	Hoist Guide	Hoist down Guide loaded	BC2 AA4	
5.	Hoist Guide	Hoist up Hoist down Feed-trip Latches retracted	BC1 BH2 AD and AE	BA4 closed (LOAD) BA8 closed (LOAD)
8.	Guide	Guide empty	AA1	
ALTERNATES	A. Magazine B. (Manual control)	Ring loaded Ring empty or loaded	BE1	BA1 closed (RUN) BA1 closed (RUN) BM1 closed (TEST HOIST)
	C. Magazine	Ring empty	BE2	BA2 closed (LOAD) BB1 closed (HOIST)
	Carriage Hoist Magazine	Guide Latch Pin extended Guide vertical Hoist Cylinder Latch retracted Ring latched	AG1 AF1 BR BF1	
9.	Hoist Guide	Hoist up Feed-trip Latches extended	BC1 AB or AC	BA3 closed (RUN) BM2 closed (NORMAL)
ALTERNATES	B. Guide	Feed-trip Latches retracted	AD and AE	BA4 closed (LOAD) BB2 closed (LOWER)
10.	Lower Hoist Lower Hoist Hoist Magazine	Lower Hoist down Troy latched up Hoist down Ring empty	CA1 CB1 BH1 BE3	BM3 closed (NORMAL) BB3 closed (NORMAL)
ALTERNATES	A. Magazine			BA5 closed (RUN)
	B. 1. Lower Hoist 2. (Manual control)	Troy empty	CD4	BDS closed (OFF) BA6 closed (LOAD) BN closed (ROTATE) BC3 closed (LOAD)

CONTROL PANEL MARK 72 MOD 0

OBSOLETE

DESCRIPTION

Control Panel Mk 72 Mod 0 is an auxiliary control device used to position Rocket Launcher Mk 108 for ejection of a misfired rocket. The panel is enclosed in a watertight metal box with a watertight cover, on which are mounted two two-position rotary selector switches; one is marked TRAIN, the other ELEVATION.

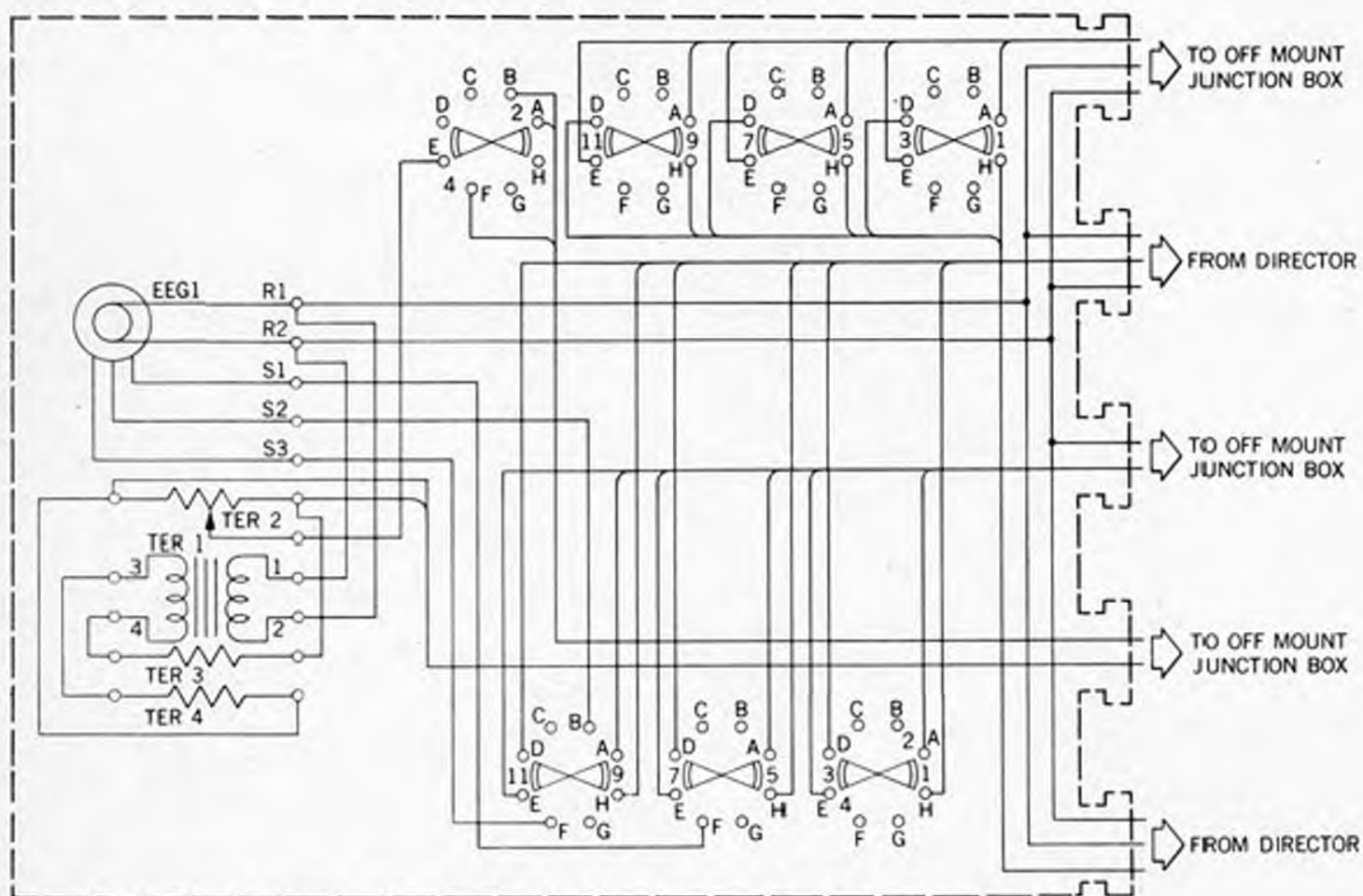
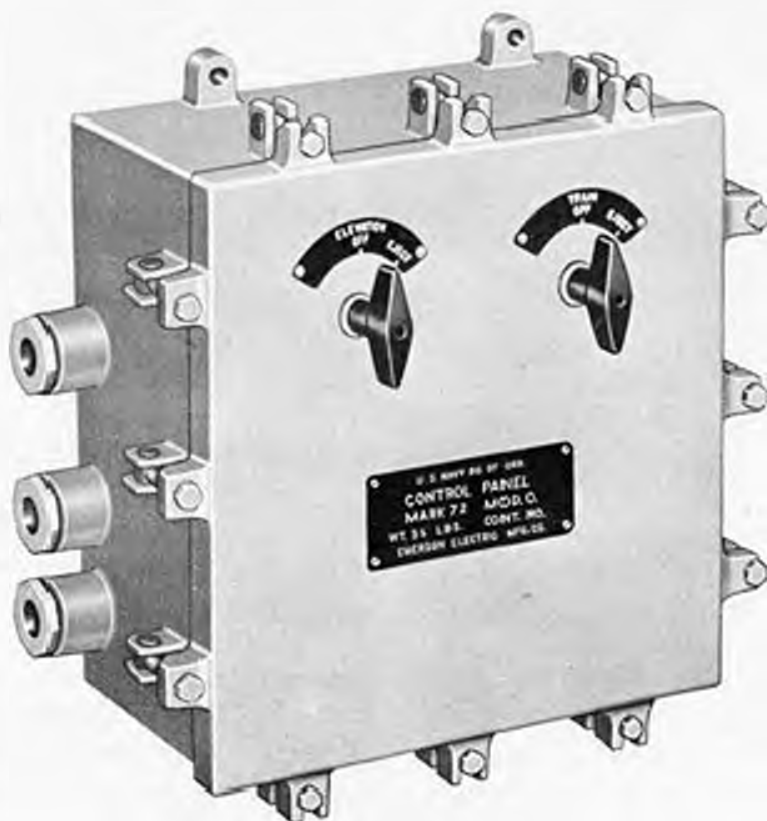
Each of the two-position switches has one

position marked OFF and another position marked EJECT. When a misfired rocket is to be ejected from the rocket launcher, the rotary switches are thrown from the OFF position to the EJECT position. This action automatically moves the launcher to the proper position for ejecting the misfired rocket. The accomplishment of Ordalt 3150 removes Control Panel Mk 72 Mod 0 from Rocket Launcher Mk 108 Mod 1.

DATA

Used withRocket Launcher Mk 108 Mod 1
Voltage, v AC115
Mounting..... bulkhead
Weight, lb 60
Dimensions, in. 15 x 14.8 x 3

List of drawings LD 272044
General arrangement drawing..... Dr 715149
Wiring diagram Dr 609747
Applicable publications Ordalt 3150



Control Panel Mk 72 Mod 0

INTERVALOMETER MARK 6 MOD 0

IN SERVICE

DESCRIPTION

Intervalometer Mk 6 Mod 0 is an electrical fire control device that is placed in the firing circuit of a rocket launcher to introduce a time delay between the firing of rockets from adjacent guides. The unit is enclosed in a watertight metal box and has four watertight fittings for multi-conductor cables.

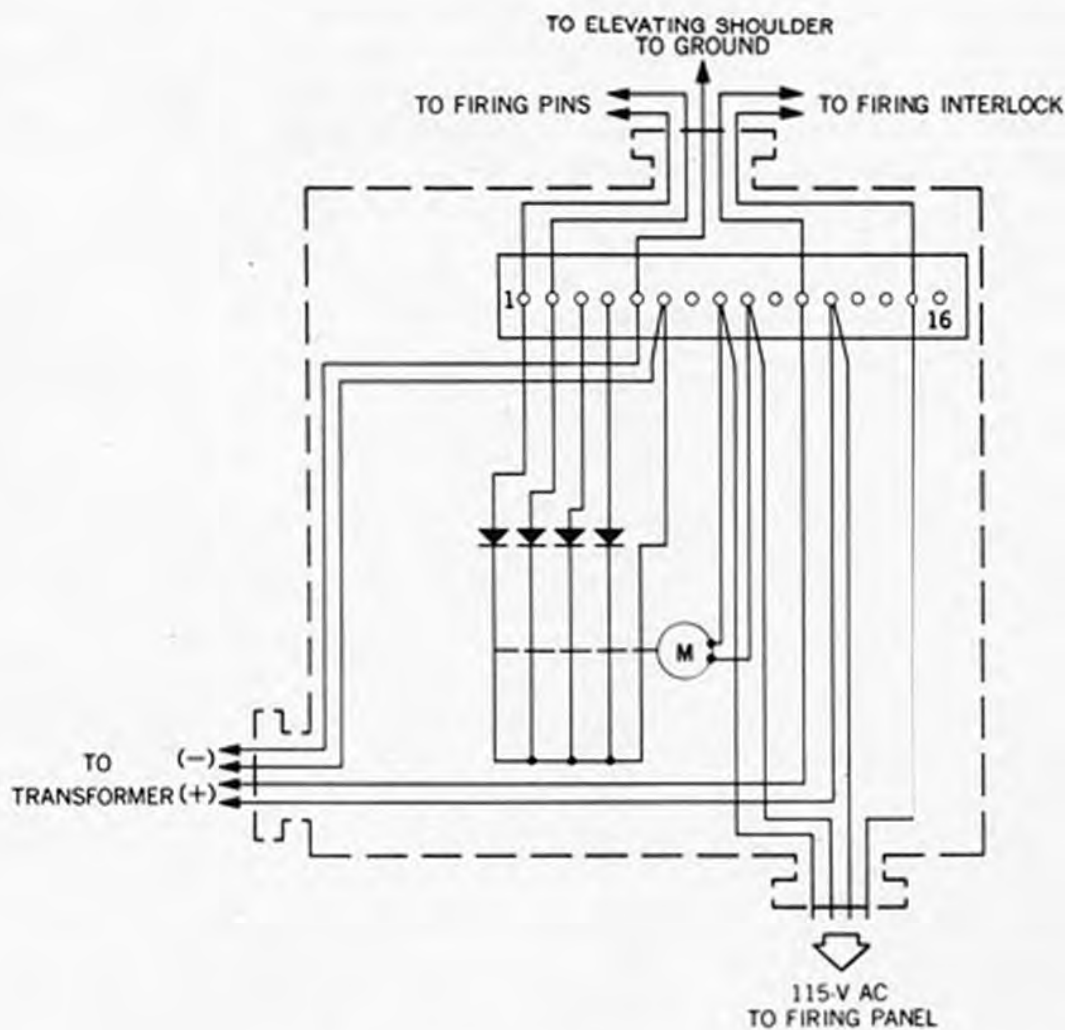
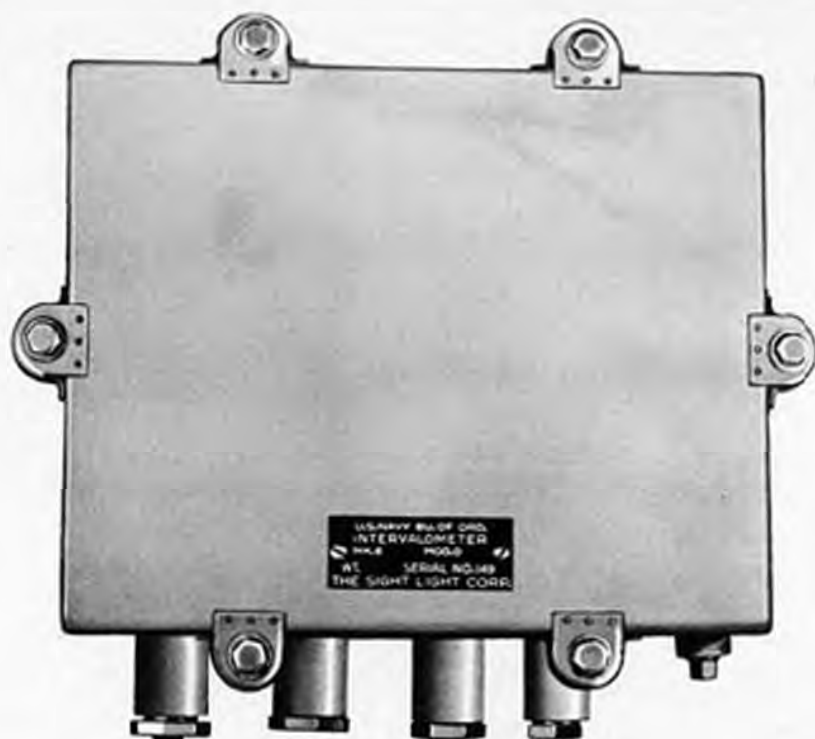
Intervalometer Mk 6 Mod 0 contains a motor-driven cam drum that rotates at 15 revolutions per

minute. Hardened heads of small screws, which are inserted radially into screw holes on the cam drum, actuate microswitches that open and close two firing circuits as the drum rotates. The interval between the screw heads on any one circle determines the firing interval, and sufficient screw holes are provided to permit time delay adjustments from 0.33 to 2 seconds. Electrical power is supplied by an external source.

DATA

Used withRocket Launcher Mk 102 Mod 0
Voltage, v AC115
Number of firing circuits2
Firing interval, sec 0.33 to 2
Type of safety plug none
Mounting bulkhead

Dimensions, in.12 x 12 x 5
List of drawingsnot assigned
General arrangement drawing Sk 145111
Wiring diagram Sk 145111
Applicable publications OD 4808
OP 1424



Intervalometer Mk 6 Mod 0

INTERVALOMETER MARK 6 MOD.1

IN SERVICE

DESCRIPTION

Intervalometer Mk 6 Mod 1 is an electrical fire control device that is placed in the firing circuit of a rocket launcher to introduce a time delay between the firing of rockets from adjacent guides. The unit is enclosed in a watertight metal box that has an access hole with watertight cover, three indicator lamps, and four watertight fittings for multi-conductor cables. With the exception of the access hole and the three indicator lamps, Intervalometer Mk 6 Mod 1 is identical in appearance to Intervalometer Mk 6 Mod 0.

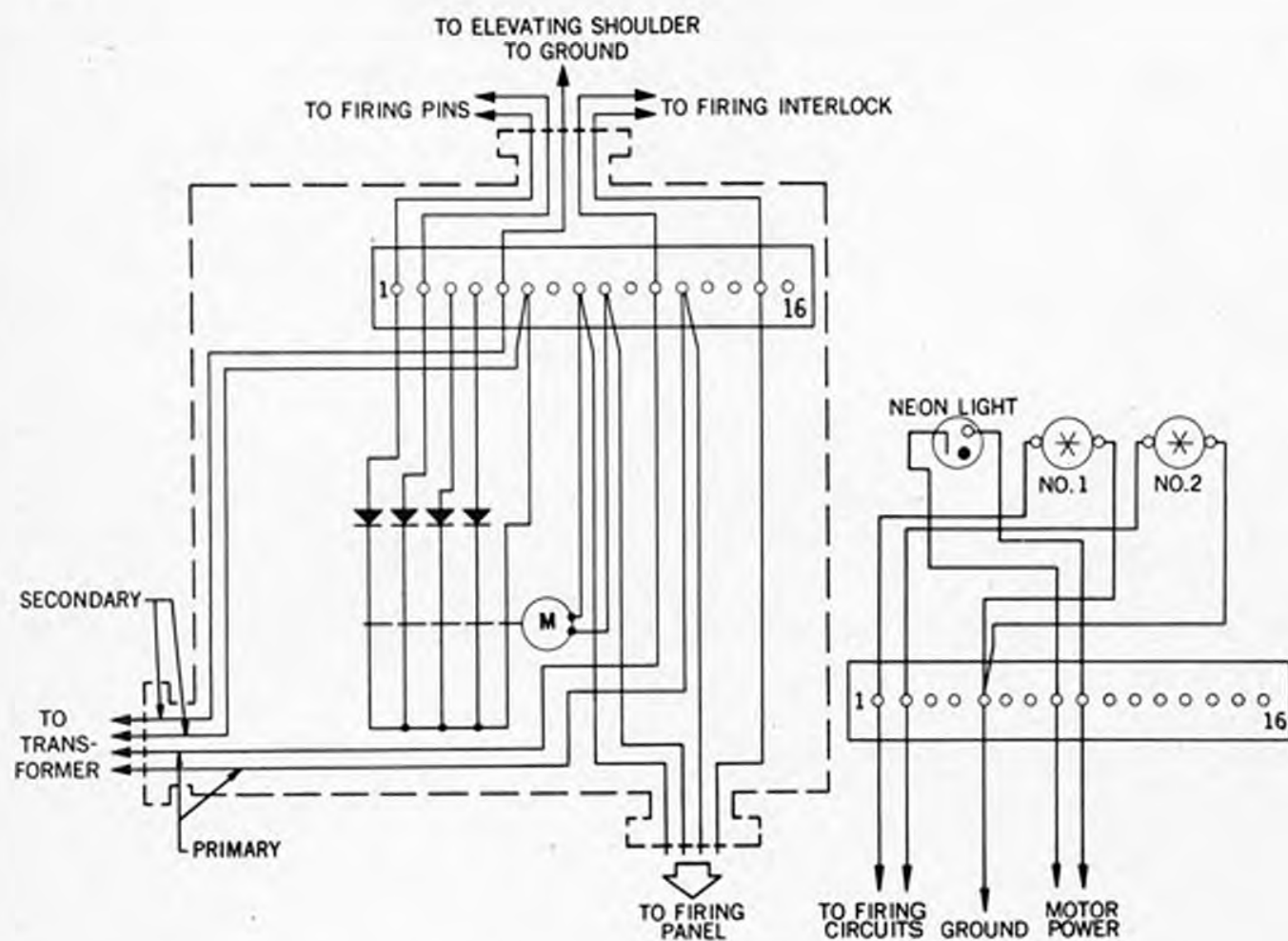
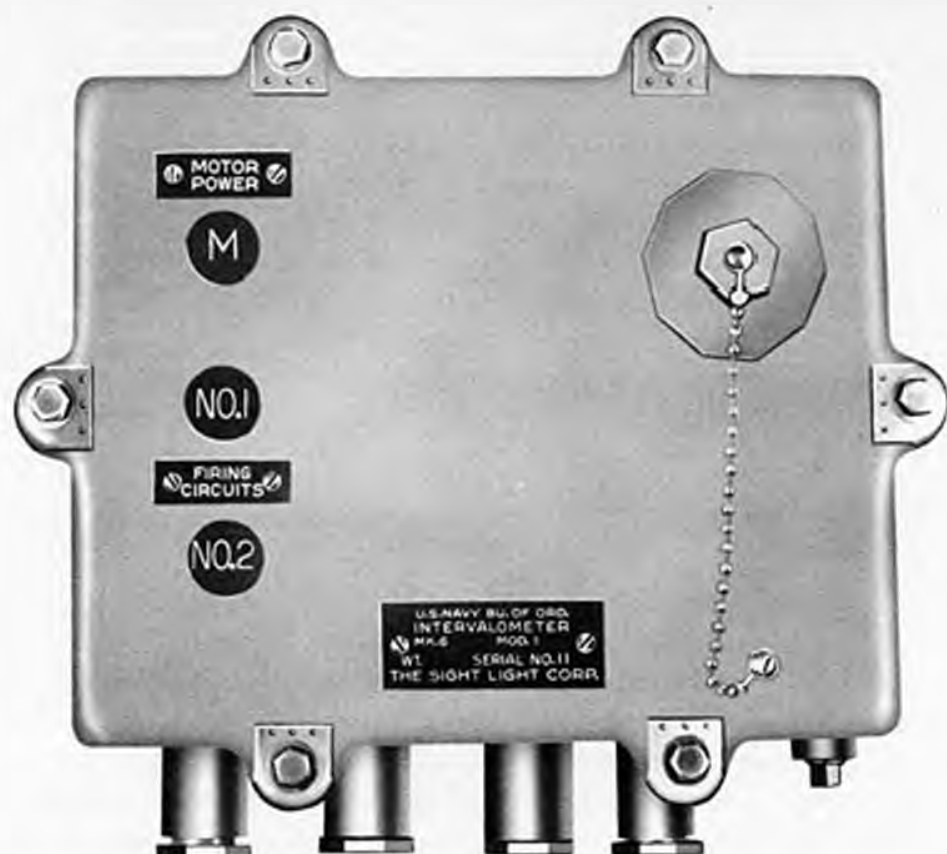
Intervalometer Mk 6 Mod 1 contains a motor-driven cam drum that rotates at 15 revolutions per minute. An access hole in the intervalometer housing permits restarting of the motor if it be-

comes stalled. Hardened heads of small screws, which are inserted radially into screw holes on the cam drum, actuate microswitches that open and close two firing circuits. The interval between the screw heads on any one circle determines the firing interval, and sufficient screw holes are provided to permit time delay adjustments of from 0.33 to 2 seconds. The drum has provisions for four firing circuits, but only two are used in Intervalometer Mk 6 Mod 1. The three indicator lamps are power pilot lamps. The upper lamp is illuminated when power is supplied to the intervalometer motor; each of the remaining two indicator lamps is connected to one of the firing circuits in use. These two lamps are illuminated when power is supplied to their respective firing circuits.

DATA

Used withRocket Launcher Mk 102 Mod 0
Voltage, v AC115
Number of firing circuits..... 2
Firing interval, sec 0.33 to 2
Mounting..... bulkhead
Weight, lb 10

Dimensions, in.12 x 12 x 5
List of drawings.....not assigned
General arrangement drawing.....not assigned
Wiring diagram.....not assigned
Applicable publications.....OP 1424



Intervalometer Mk 6 Mod 1

INTERVALOMETER MARK 8 MOD 0

IN SERVICE

DESCRIPTION

Intervalometer Mk 8 Mod 0 is an electrical fire control device that is placed in the firing circuit of a rocket launcher to introduce a time delay between the firing of rockets from adjacent guides. The unit is enclosed in a watertight metal box containing three indicator lamps, a diaphragm-covered push button switch, and four watertight fittings for multi-conductor cables.

The intervalometer has an electronic delay circuit controlled by a thyatron tube. The first firing circuit of the rocket launcher is automatically closed when the launcher guide moves into the firing position. The thyatron is then energized, and when the thyatron fires, the timing

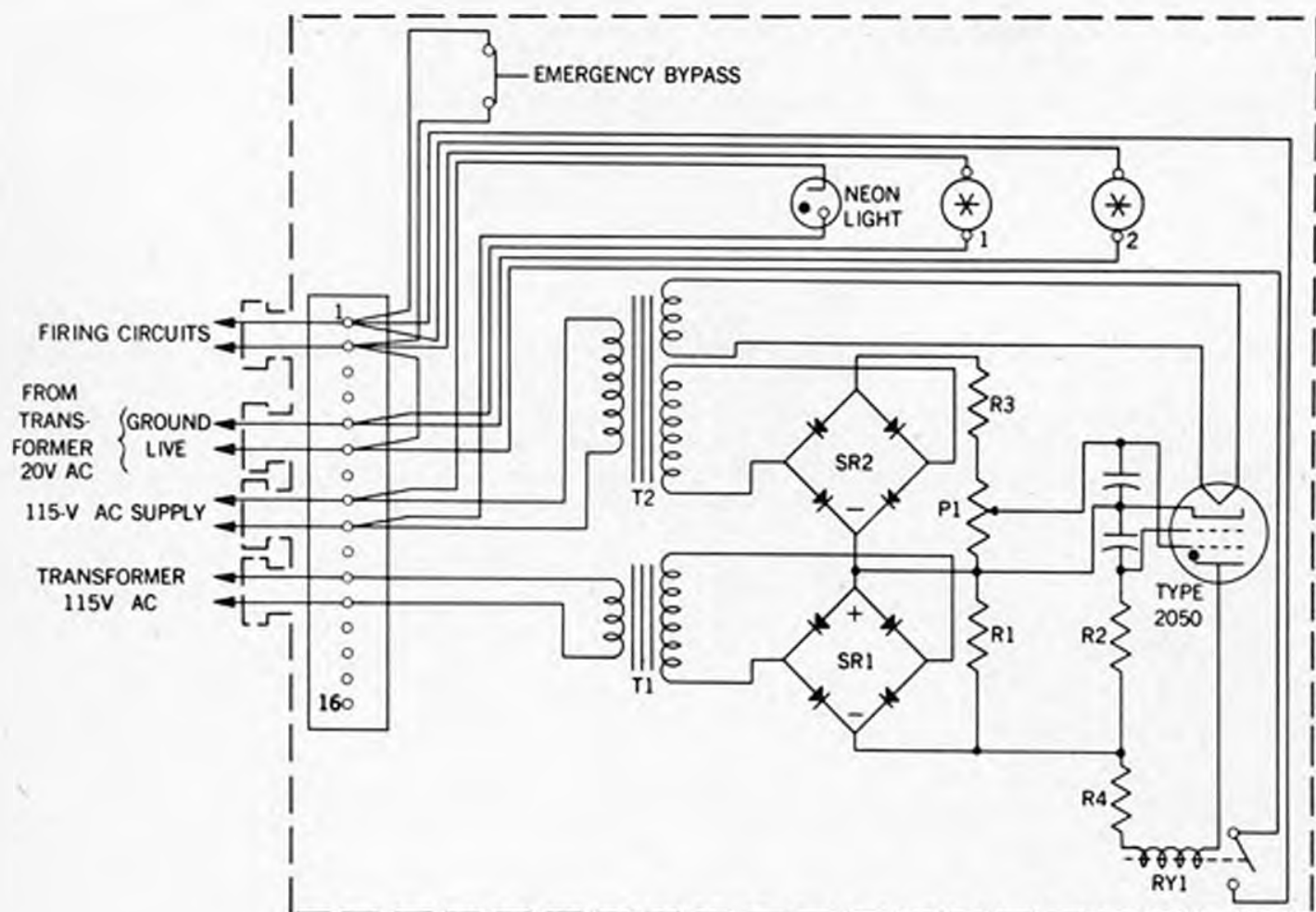
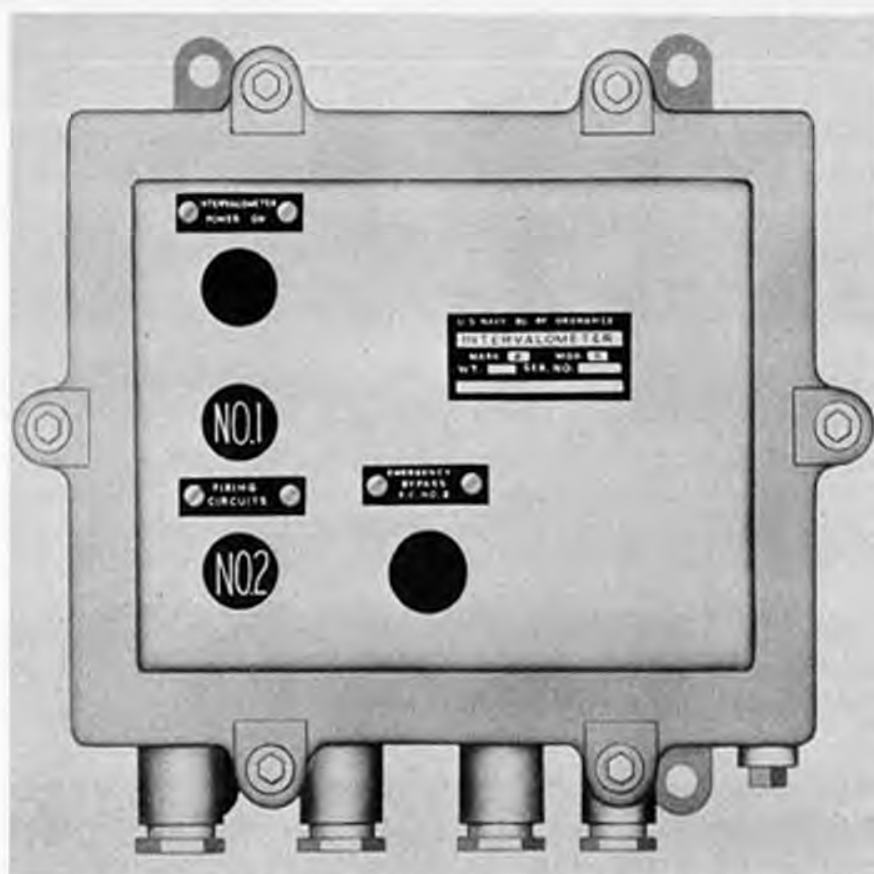
relay is actuated to close the second firing circuit. The delay between the firing of the two rockets is adjustable from approximately 0 to 0.8 second by the setting of a potentiometer. The potentiometer can be locked in position when a proper interval is determined. The uppermost of the three indicator lamps is a neon lamp that is illuminated when power is supplied to the intervalometer. Indicator lights 1 and 2 are connected in firing circuits 1 and 2; they are illuminated when power is supplied to their respective firing circuits. The diaphragm-covered push button is an emergency bypass switch used to fire the second firing circuit if the intervalometer fails to function.

DATA

Used with.....Rocket Launcher Mk 102 Mod 0
Rocket Launcher Mk 105 Mod 0
Voltage, v AC115
Number of firing circuits 2
Firing interval, sec 0 to 0.8
Mounting.....bulkhead

Weight, lb 10*
Dimensions, in.11 x 12 x 7
List of drawings.....Sk 167244
General arrangement drawing.....Dr 508173
Wiring diagram.....Dr 509549
Applicable publications none

*Estimated



Intervalometer Mk 8 Mod 0

INTERVALOMETER MARK 8 MOD 1 (formerly Intervalometer Mark 6 Mod 2)

IN SERVICE

DESCRIPTION

Intervalometer Mk 8 Mod 1 is an electrical fire control device used in the firing circuit of rocket launchers with two firing tubes to introduce a time delay between two rockets fired in salvo. The unit is enclosed in a watertight metal box that has three indicator lamps, a diaphragm-covered push button switch, and four watertight fittings for multi-conductor cables. Intervalometer Mk 8 Mod 1 is identical in appearance to Intervalometer Mk 8 Mod 0. The intervalometer was originally identified as Mk 6 Mod 2, but, upon the completion of the design, the identity was changed to Mk 8 Mod 1.

The intervalometer contains an electronic delay circuit that is controlled by a thyatron tube. The first firing circuit of the launcher is automatically closed when the launcher guide moves

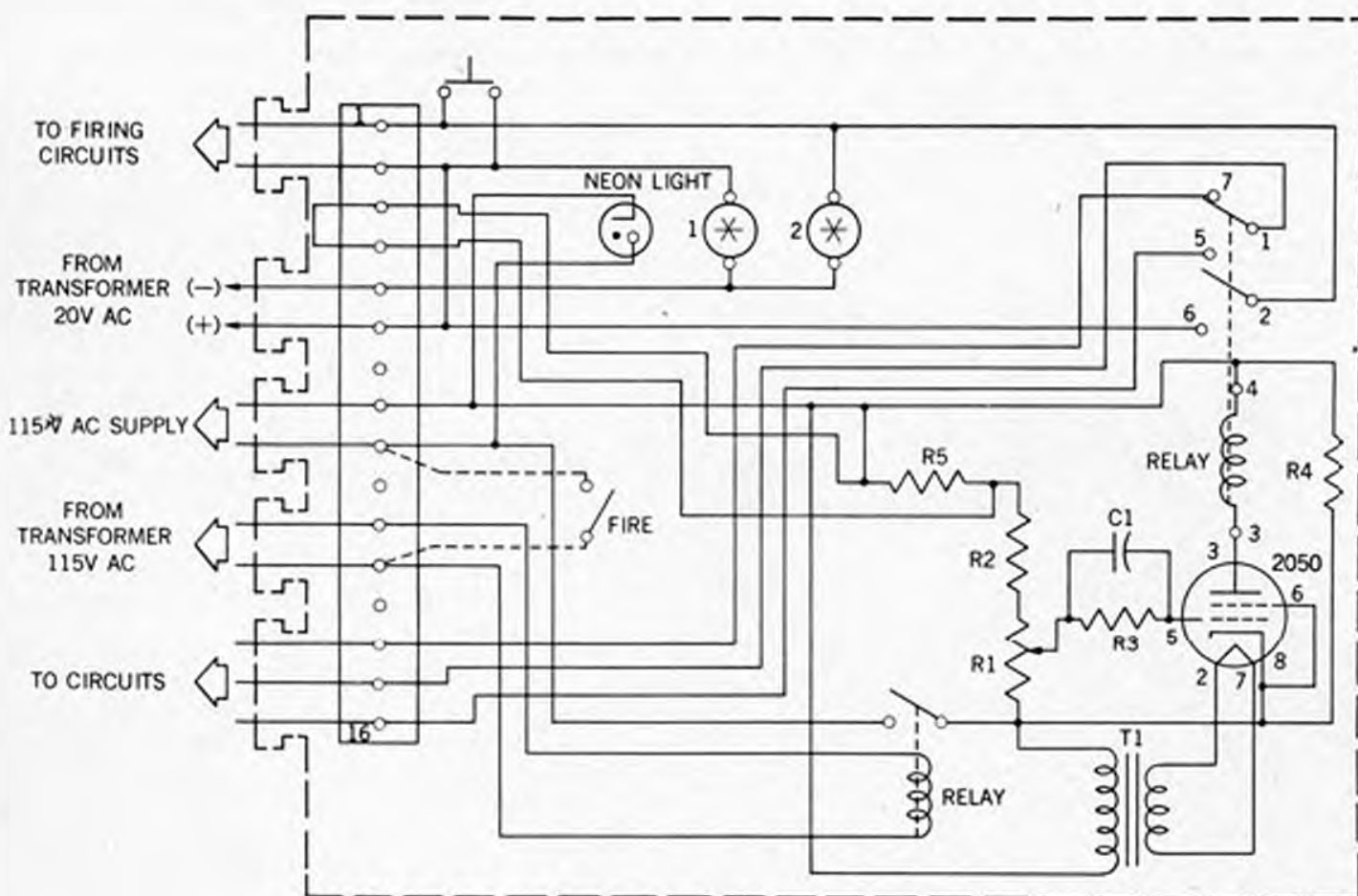
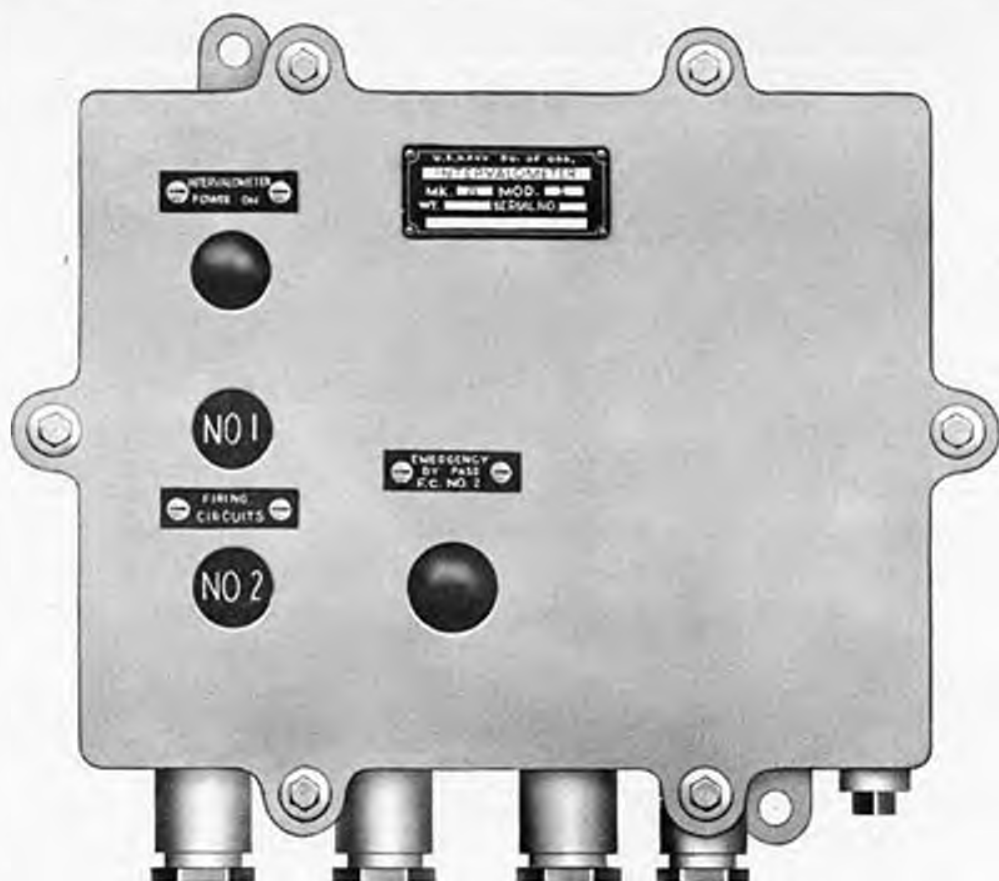
into the firing position. The thyatron then fires and energizes a timing relay, which closes the second firing circuit. The firing delay can be adjusted from approximately 0 to 0.8 second by setting a potentiometer. The uppermost of the three indicator lamps is a neon lamp that is illuminated when power is supplied to the intervalometer. Indicator lights 1 and 2 are connected in firing circuits 1 and 2, respectively; they are illuminated when power is supplied to their respective firing circuits. The diaphragm-covered push button is an emergency bypass switch used to fire the second firing circuit if the intervalometer fails. Intervalometer Mk 8 Mod 1 differs from Intervalometer Mk 8 Mod 0 in that the alternating current supplied by an external source is fed to the thyatron without converting it to direct current.

DATA

Used with.....Rocket Launcher Mk 105 Mod 0
Voltage, v AC115
Number of firing circuits 2
Firing interval, sec 0 to 0.8
Mounting..... bulkhead
Weight, lb 10*

Dimensions, in.11 x 12 x 7
List of drawings Sk 260444
General arrangement drawing Dr 515465
Wiring diagram Dr 713567
Applicable publications..... OP 1915

* Estimated



Intervalometer Mk 8 Mod 1

SYNCHRONISM FIRING INTERLOCK MARK 1 MOD 0

OBSOLETE

DESCRIPTION

Synchronism Firing Interlock Mk 1 Mod 0 is an electrical fire control device that automatically closes the firing circuit of Rocket Launcher Mk 108 when the mount is synchronized with the director in both train and elevation. The unit consists of an oblong, watertight metal box that contains standard vacuum tubes, resistors, capacitors, relays, and transformers.

The synchronism firing interlock contains three interlock circuits; each circuit operates on the

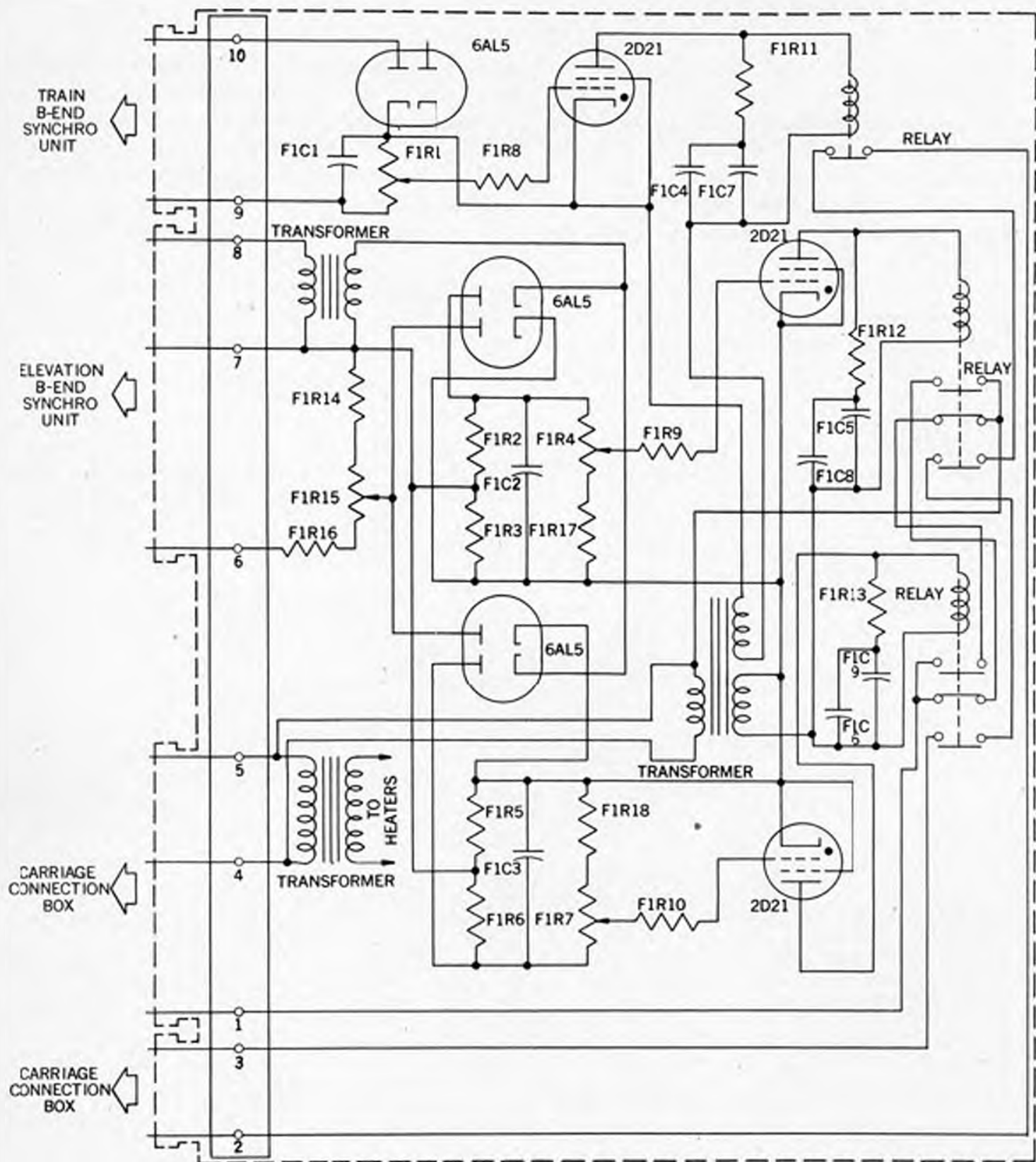
same principles. The inputs are the train coarse error signal, the elevation coarse error signal, and the elevation fine error signal. Each signal is rectified and applied as a negative grid bias on a thyatron tube. When the error signal voltage falls below a set minimum, current flows through the thyatron tube. This current energizes a relay to close a contact in the firing circuit. When all three error voltages are sufficiently small, all three relays are energized and the firing circuit is completed.

DATA

Used with Rocket Launcher Mk 108
Voltage, v AC 115
Number of firing circuits 1
Mounting bulkhead
Weight, lb 27.5

Dimensions, in. 4.8 x 7.5 x 15.5
List of drawings LD 258221
General arrangement drawing Dr 788874
Wiring diagram Dr 609742
Applicable publications OP 1754

*Synchronism Firing Interlock Mk 1 Mod 0*



Synchronism Firing Interlock Mk 1 Mod 0

SYNCHRONISM FIRING INTERLOCK MARK 2 MOD 0

IN SERVICE

DESCRIPTION

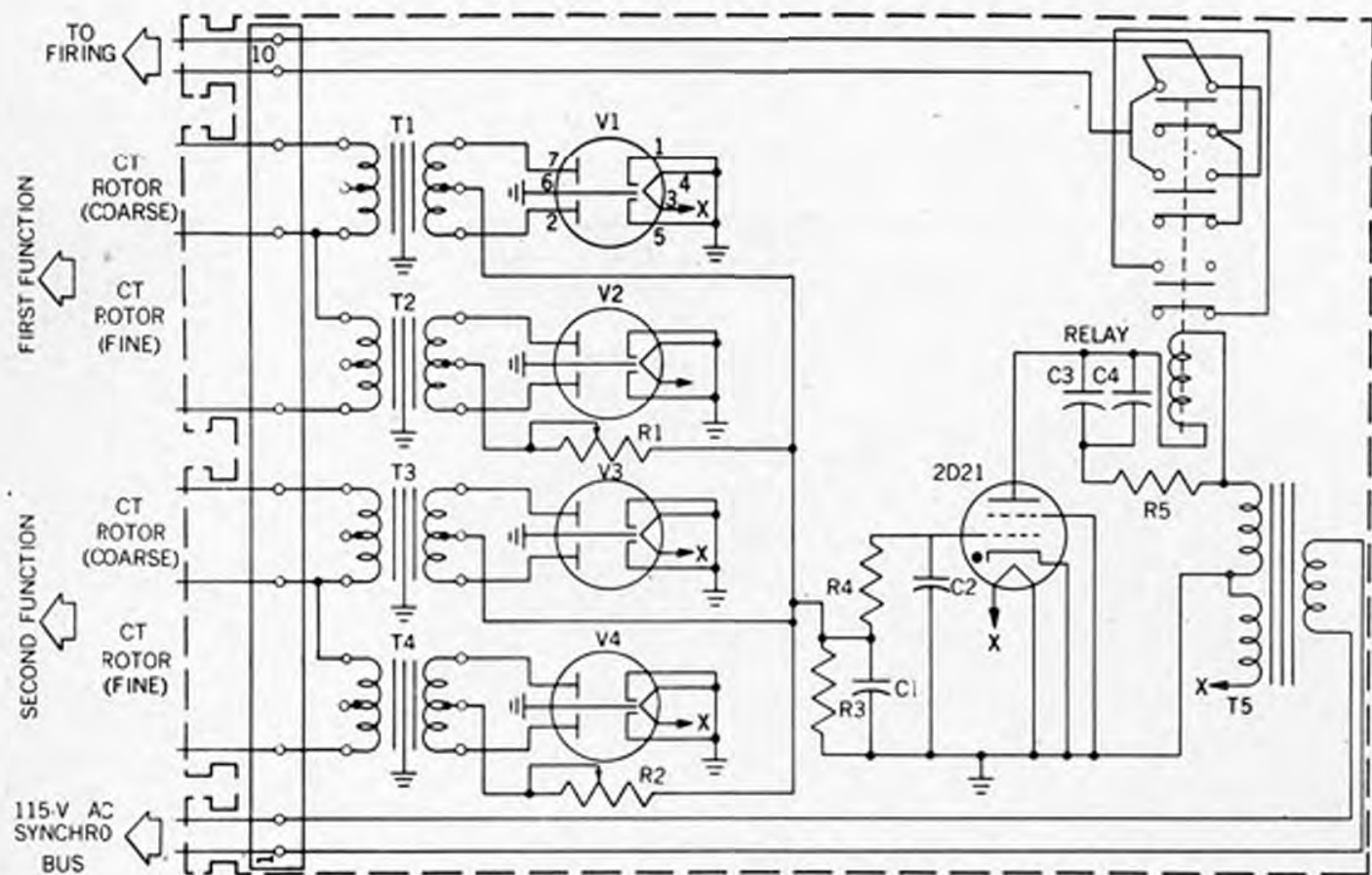
Synchronism Firing Interlock Mk 2 Mod 0 is an electrical fire control device that automatically closes the firing circuit of Rocket Launcher Mk 108 when the mount is synchronized in both train and elevation. The unit consists of an oblong, watertight metal box that contains standard vacuum tubes, resistors, capacitors, relays, and transformers.

The synchronism firing interlock receives four error signals: coarse elevation, fine elevation, coarse train, and fine train. These four signals are rectified in four parallel circuits, and then combined as the bias on a single thyatron tube. When the thyatron fires, a relay is closed, and the firing circuit is completed.

DATA

Used with Rocket Launcher Mk 108
Voltage, v AC 115
Number of firing circuits 1
Mounting bulkhead
Weight, lb 24.5

Dimensions, in. 4.8 x 7.5 x 15.5
List of drawings LD 262265
General arrangement drawing Dr 517423
Wiring diagram Dr 886775
Applicable publications OP 1754



Synchronism Firing Interlock Mk 2 Mod 0

FIRING KEY (MAGNETO) MARK 21 ALL MODS

OBSOLETE

DESCRIPTION

Firing Key (Magneto) Mk 21 Mod 1 is a manually operated, flip-generator, self-contained source of energy for firing three electric squibs, either individually or in rapid sequence. Mods 2, 3, and 4 are basically the same, varying only in the number of circuits and the length of cable. The Mod 0 unit, which is the basic six-circuit key, is

used only as a component of the other Mods. In Mods using less than the original six circuits, the wiring of the cable-connecting plug is modified.

Except for the trigger, the key is enclosed in a plastic case. The key is fired by depressing or squeezing the trigger.

DATA

	Mod 0	Mod 1	Mod 2	Mod 3	Mod 4
Status	Obsolete	Obsolete	Obsolete	Development complete; not manufactured	Obsolete
Used with	Mods 1, 2, 3, and 4	Rocket Launcher Mk 2 Mod 1	Rocket Launcher Mk 13 Mod 0	Rocket Launcher Mk 13 Mod 0	Rocket Launchers Mk 32 Mod 0 Mk 33 Mod 0
Characteristics	Six-circuit key with plug; no cable	Three-circuit key with 25 feet of cable	Six-circuit key with 25 feet of cable	Six-circuit key with 65 inches of cable	Two-circuit key with 25 feet of cable
Weight, lb	1.1	2.2	3.1	4.0	2.0
List of drawings	Sk 109413	Sk 109414	Sk 109415	Sk 109416	Sk 109417
General arrangement drawing	Dr 422519	Dr 422519	Dr 422519	Dr 422519	Dr 422519
Wiring diagram	Dr 422530	Dr 422530	Dr 422530	Dr 422530	Dr 422530
Applicable publications	OP 1127 OS 3026	OP 1127 OS 3026	OP 1127 OS 3026	OP 1127 OS 3026	OP 1127 OS 3026



Firing Key Mk 21

FIRING KEY (MAGNETO) MARK 22 ALL MODS

OBSOLETE

DESCRIPTION

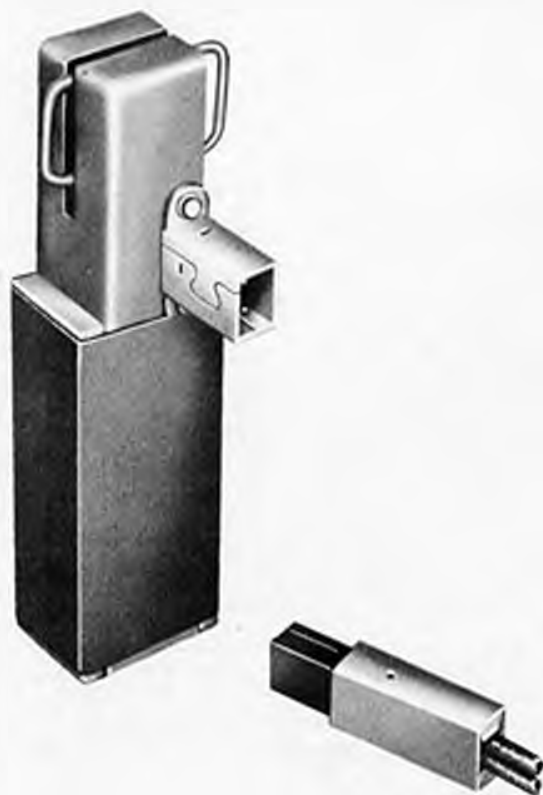
Firing Key (Magneto) Mk 22 Mod 1 is a manually operated, flip-generator, self-contained source of energy for firing single electric squibs, either individually or in rapid sequence. Mods 2, 3, 4, and 5 are basically the same, varying only in the number of circuits and the length of cable. The Mod 0 unit, which is the basic single-circuit key, is used only as a component of the other Mods.

In Mods using two circuits instead of the original single circuit, an additional binding post is provided.

Except for the trigger, the key is covered with a moisture-resistant tape. The trigger is protected by a guard and is operated by pressing the sliding handle alternately to the right and left; either motion actuates the trigger.

DATA

	Mod 0	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5
Status	Obsolete	Obsolete	Development complete; not manufactured	Development complete; not manufactured	Development complete; not manufactured	Development complete; not manufactured
Used with	Mod 1	Single-guide launchers	Mod 3	Single-guide launchers	Mod 5	Two-guide launchers
Characteristics	Single-circuit key with detachable plug; no cable	Mod 0 plus 25 feet of cable	Single-circuit key with two binding posts; no cable	Mod 2 plus 25 feet of cable	Two-circuit key with three binding posts; no cable	Mod 4 plus 25 feet of cable
Weight, lb	0.8	1.0	0.8	1.0	0.8	1.0
List of drawings	Sk 109106	Sk 109379	Sk 109380	Sk 109381	Sk 109382	Sk 109383
General arrangement drawing	Dr 422607	Dr 422607	Dr 422607	Dr 422607	Dr 422608	Dr 422608
Wiring diagram	Dr 422533	Dr 422533	Dr 422533	Dr 422533	Dr 422533	Dr 422533
Applicable publications	OP 1128 OS 3044	OP 1128 OS 3044	OP 1128 OS 3044	OP 1128 OS 3044	OP 1128 OS 3044	OP 1128 OS 3044



Firing Key Mk 22

FIRING KEY (MAGNETO) MARK 25 ALL MODS

OBSOLETE

DESCRIPTION

Firing Key (Magnet) Mk 25 Mod 1 is a manually operated, flip-generator, self-contained source of energy for firing three electric squibs, either individually or in rapid sequence. Mods 2, 3, 4, and 5 are basically the same, varying only in the number of circuits and the length of cable. The Mod 0 unit, which is the basic six-circuit key, is used only as a component of the other Mods. In

Mods using less than the original six circuits, the wiring of the plug receptacle is modified.

The key is enclosed in a tubular plastic case, except for the trigger, which is covered by a plastic handle. The key is fired by depressing or squeezing the trigger.

DATA

	Mod 0	Mod 1	Mod 2	Mod 3	Mod 4
Status	Obsolete	Development complete; not manufactured	Development complete; not manufactured	Development complete; not manufactured	In service
Used with	Mods 1,2,3, and 4	not designated	not designated	not designated	Rocket Launcher Mk 26 Mod 0
Characteristics	Six-circuit key with no cable	Three-circuit key with 25 feet of cable	Six-circuit key with 25 feet of cable	Six-circuit key with 65 inches of cable	Two-circuit key with 25 feet of cable
Weight, lb	1.38	2.93	data not available	data not available	2.73
List of drawings	Sk 165170	Sk 165171	Sk 165172	Sk 165173	Sk 165174
General arrangement drawing	Dr 440359	Dr 440359	not assigned	not assigned	Dr 440359
Wiring diagram	Dr 440352	Dr 440352	not assigned	not assigned	Dr 440352
Applicable publications	OP 1558	OP 1558	OP 1558	OP 1558	OP 1558



Firing Key Mk 25

FIRING KEY (MAGNETO) MARK 26 ALL MODS
DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Firing Key (Magneto) Mk 26 Mod 1 is a manually operated, flip-generator, self-contained source of energy for firing a single electric squib, either individually or in rapid sequence. Mod 2 is the same basic unit, varying only in the length of the cable. The Mod 0 unit, which is the basic single-circuit key, is used only as a component of the other Mods, and it is similar to Firing Key Mk 25

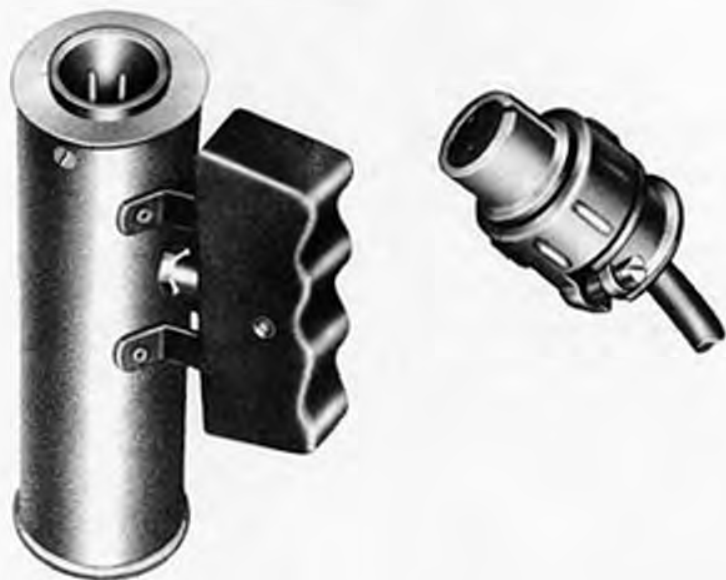
Mod 0 except for the change in the number of circuits.

The key is enclosed in a tubular plastic case, except for the trigger, which is covered by a plastic handle. The key is fired by depressing or squeezing the trigger.

Upon completion of the design of Firing Key Mk 26, the drawings were released for British use.

DATA

	Mod 0	Mod 1	Mod 2
Status	Development complete; not manufactured	Development complete; not manufactured	Development complete; not manufactured
Used with	not designated	not designated	not designated
Characteristics	Single-circuit key; no cable	Single-circuit key with 25 feet of cable	Single-circuit key with 60 feet of cable
Weight, lb	1.36	data not available	3.68
List of drawings	Sk 165175	Sk 165176	Sk 165177
General arrangement drawing	Dr 440362	not assigned	Dr 440362
Wiring diagram	Dr 440363	not assigned	Dr 440363
Applicable publications	none	none	none



Firing Key Mk 26

SECTION 4-B

MISCELLANEOUS EQUIPMENT

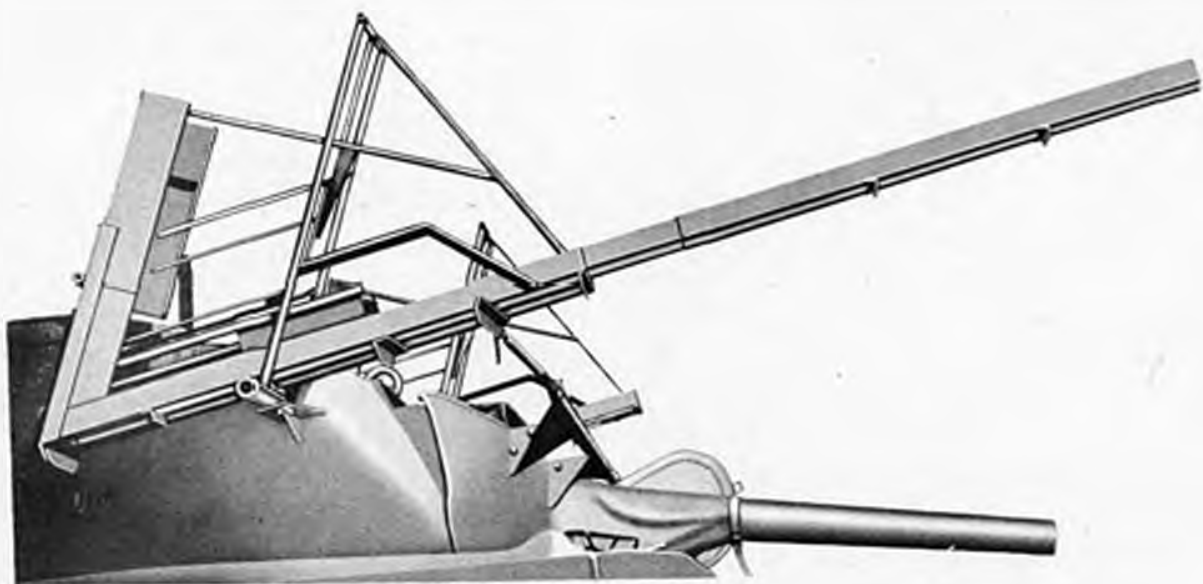
The miscellaneous equipment used with the weapons and control devices in this publication fall under two general headings: equipment used for convenience or safety, and equipment used to improve the versatility or operating characteristics of a weapon.

Safety plugs and missile-handling vehicles fall under the first heading. A safety plug may be one of five types; any one type may be interchanged with a safety plug of the same type in any firing panel. When a safety plug is withdrawn from its receptacle in a firing panel, the firing circuit of the panel is interrupted. As a safety measure, personnel working in the vicinity of the weapon to which the panel is connected should have the safety plug in their possession at all times.

A missile-handling vehicle is a specially

designed truck or dolly for handling large missiles. These vehicles are manually towed, and have safety features to prevent the vehicle from rolling when the missile is being loaded or unloaded. Each of the missile-handling vehicles is designed for use with one class of missile launcher. The X-7 Type Lift Truck is a development of the X-5 Type Lift Truck.

The equipment used to improve the versatility or operating characteristics of a weapon include rocket launcher adapter kits, Rocket Launcher Guide Mk 51, Rocket Launcher Guide Extension Mk 1, and Portable Platform Mk 4. The rocket launcher adapter kits are used to adapt a rocket launcher for a special mounting; the other items are units that were modified from other equipment or developed to suit special purposes.



Rocket Launcher Guide Extension Mk 1 Mod 0

CONTENTS

Rocket Launcher Adapter Kits

Mk	Mod	Page
1	0	377
1	1	379
2	0	381

Safety Plugs

Type	Page
A	383
B	385
C	387
D	389
E	391

Missile Handling Vehicles

	Page
Lift Truck Type X-5	393
Lift Truck Type X-7	395
Dolly Type X-3	397

Other Equipment

	Mk	Mod	Page
Rocket Launcher Guide	51	0	399
Rocket Launcher Guide Extension	1	0	401
Portable Platform	4	0	403

ROCKET LAUNCHER ADAPTER KIT MARK 1 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Adapter Kit Mk 1 Mod 0 is a device used for mounting two Rocket Launchers Mk 7 Mod 0 on a flat surface.

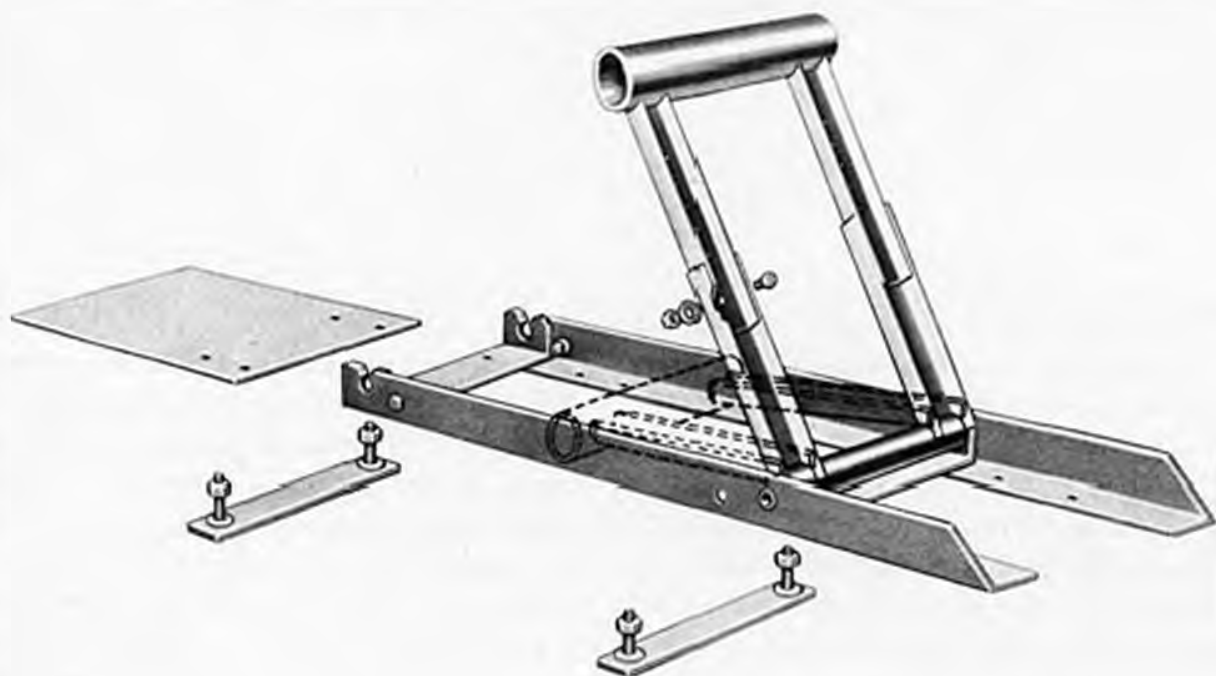
The kit consists of a deck frame and a crutch for each launcher. The welded deck frame is made of two steel angles connected by two flat steel members. The crutch consists of two channel-shaped legs joined at each end by a tubular steel

piece. One end of the crutch is hinged to the deck frame and the other end supports the launcher. The length of the crutch legs can be varied to support the launcher at various angles of elevation. Holes in the deck frame are used to bolt two or more frames together when a multiple installation is required. Other holes are provided for bolting the deck frame to an outrigger, for attaching a blast shield, and for attaching a blast deflector.

DATA

Weight, lb 84
Dimensions:-
Height (maximum), in. 20
Width, in. 12.1
Length, in. 37.3

List of drawings Sk 133156
General arrangement drawing Dr 424910,6
Applicable publications OP 1131
OS 3321



Rocket Launcher Adapter Kit Mk 1 Mod 0

ROCKET LAUNCHER ADAPTER KIT MARK 1 MOD 1

DEVELOPMENT COMPLETE; NOT MANUFACTURED

DESCRIPTION

Rocket Launcher Adapter Kit Mk 1 Mod 1 is a device used for mounting two Rocket Launchers Mk 7 Mod 0 on a flat surface where blast protection is required.

The kit consists of a deck frame, a crutch, and a blast deflector for each launcher. The deck frame and crutch are identical with those used in Rocket Launcher Adapter Kit Mk 1 Mod 0. The deck frame is made of two steel angles connected by flat steel members. The crutch consists of two channel-shaped legs joined at each end by a

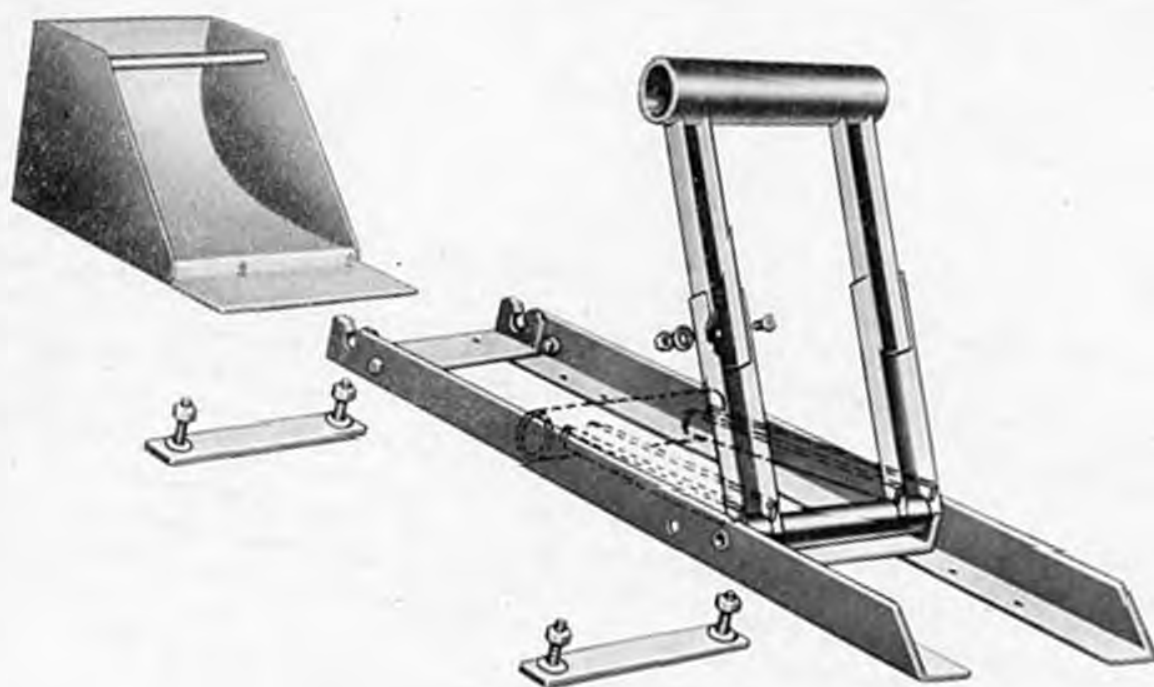
tubular steel piece. One end of the crutch is hinged to the deck frame and the other end supports the launcher. The length of the crutch legs can be varied to support the launcher at various angles of elevation. The welded blast deflector is made of two flat sheet-metal side plates, a curved sheet-metal deflecting plate, and a supporting rod. Holes in the deck frame are used to bolt two or more frames together when a multiple installation is required. Other bolt holes are provided for bolting a blast shield plate under the after end of the deck frame.

DATA

Weight, lb 128
Dimensions:-
Height (maximum), in. 20
Width, in. 12.1
Length, in. 51.9

List of drawings Sk 133158
General arrangement drawing Dr 424915
Applicable publications OP 1131
OS 3321

UNCLASSIFIED



Rocket Launcher Adapter Kit Mk 1 Mod 1

UNCLASSIFIED

ROCKET LAUNCHER ADAPTER KIT MARK 2 MOD 0

DEVELOPMENT COMPLETE; NOT MANUFACTURED*

DESCRIPTION

Rocket Launcher Adapter Kit Mk 2 Mod 0 is a device used for mounting two Rocket Launchers Mk 7 Mod 0 outboard on landing craft or vehicles.

The kit supplied for landing craft consists of two main support pipes, two spacer pipes, and two elevating racks. The two spacer pipes are joined by a sleeve, and a main support pipe is placed over each spacer pipe to provide an ex-

tensible athwartship assembly. The elevating racks, which contain a series of evenly spaced holes, are attached to wooden planks adjacent to each launcher on the inboard side. By varying the position of a locking pin that is inserted in the elevation rack holes, the elevation of a launcher can be varied. A slightly modified version of Rocket Launcher Adapter Kit Mk 2 Mod 0 is supplied for jeep installations. This kit includes two wooden mounting blocks.

DATA

Weight:-

Jeep adapter kit, lb	100
Landing craft adapter kit, lb	75

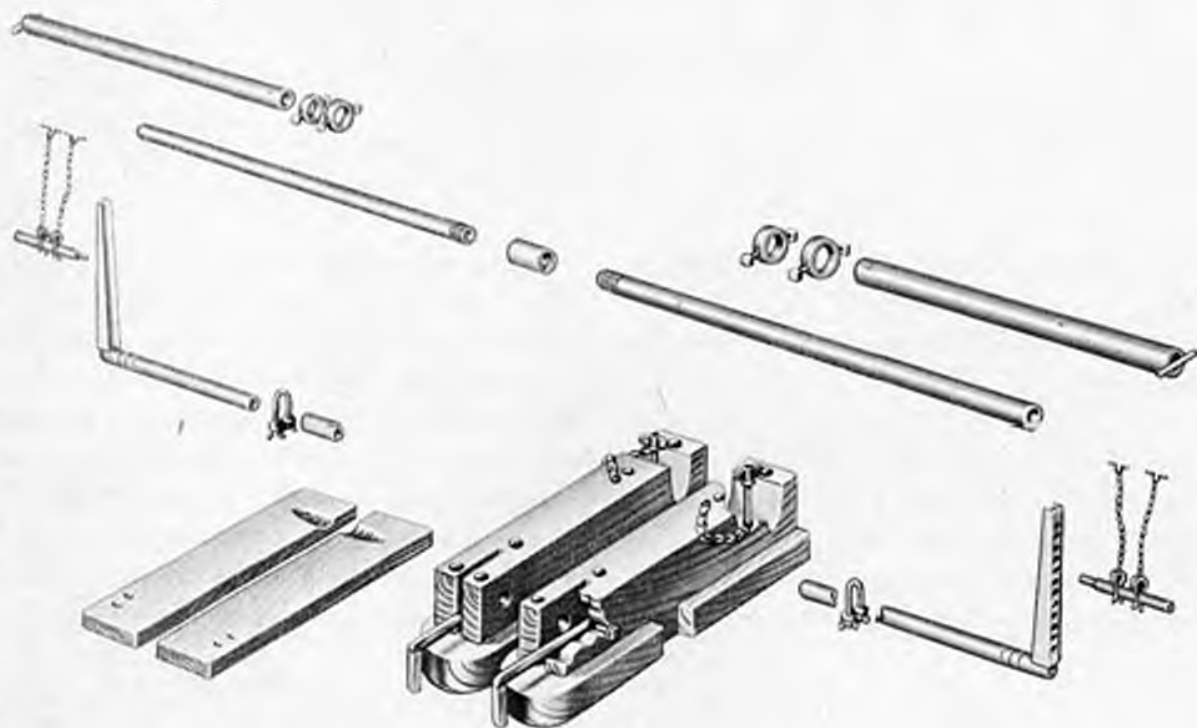
Dimensions:-

Height, in.	15
Width (maximum), in.	156.5
Width (minimum), in.	87.1

Dimensions (cont)

Length, in.	37.3
List of drawings	Sk 133159
General arrangement drawing	Dr 424901,2,3,4
Applicable publications	OP 1131
	OS 3322

*This equipment was never manufactured as a separate kit; the equipment was furnished as part of Rocket Launcher Mk 7 (Exp) when outboard installation was specified.



Rocket Launcher Adapter Kit Mk 2 Mod 0

SAFETY PLUG TYPE A

IN SERVICE

DESCRIPTION

Safety Plug Type A is a device used in firing panels to prevent accidental firing. The plug has two prongs and a knurled collar. When the plug is inserted into the firing panel receptacle, the prongs make contact with two other prongs in the receptacle; the knurled collar secures the plug to the threaded neck

of the receptacle. When the safety plug is removed from the receptacle, the firing circuit of the panel is interrupted. This type of safety plug is used on all Mods of the following firing panels: Mk 1, 2, 3, 4, 9, and 11. Safety Plug Type A is also known as a contact or plug-in connector type plug.



Safety Plug Type A

SAFETY PLUG TYPE B

IN SERVICE

DESCRIPTION

Safety Plug Type B is a device used in firing panels to prevent accidental firing. The plug has a knurled nut and a push button. The plug is inserted into the firing panel receptacle and locked by a bayonet-type lock that is actuated by depressing the knurled nut and rotating it a quarter turn. The push button, which is spring-actuated, must be depressed in the same manner as a firing push button to complete the circuit

across the receptacle. When the push button is released, the firing circuit of the panel is interrupted. The push button may be locked in the depressed position by rotating it a quarter turn after depressing it. This type of safety plug is used on all Mods of the following firing panels: Mk 12, 13, 14, 17, 18, 19, and 20. Safety Plug Type B is also known as a bayonet-locking, double-action type plug.

SAFETY PLUG TYPE B

3219532 (4)



Safety Plug Type B

Safety Plug Type B

SAFETY PLUG TYPE C

IN SERVICE

DESCRIPTION

Safety Plug Type C is a device used in firing panels to prevent accidental firing. The plug has a knurled nut and a push button. The plug is inserted by screwing it into the firing panel receptacle. The push button, which is spring-actuated, must be depressed in the same manner as a firing push button to complete the circuit across the receptacle. When the push button is released, the firing

circuit of the panel is interrupted. The push button may be locked in the depressed position by rotating it a quarter turn after depressing it. This type of safety plug is used on all Mods of Firing Panels Mk 16 and Mk 28; a slightly modified version of the plug is used on Firing Panel Mk 13 Mod 2. Safety Plug Type C is also known as a screw-type, double-action plug.



Safety Plug Type C

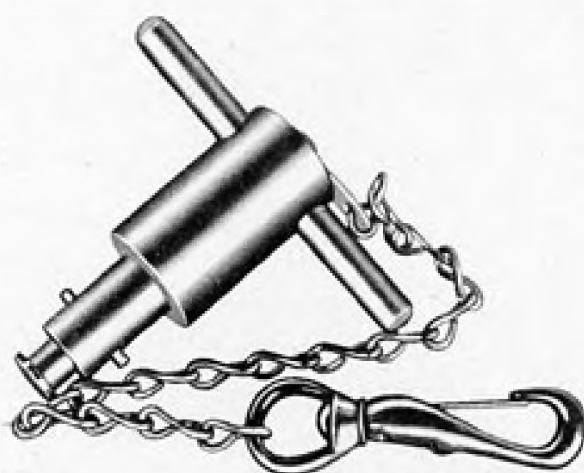
SAFETY PLUG TYPE D

IN SERVICE

DESCRIPTION

Safety Plug Type D is a device used on firing panels to prevent accidental firing. The plug has a T-shaped handle that is used to depress the plug when it is inserted into the firing panel receptacle. The bayonet-type lock on the plug is actuated by rotating the plug a quarter turn as it is depressed.

When the plug is withdrawn from the receptacle, the firing circuit of the panel is interrupted. This type of safety plug is used on Firing Panels Mk 20 and Mk 24; it will eventually replace the double-action type plugs on all installations. Safety Plug Type D is also known as a bayonet-locking, single-action type plug.



Safety Plug Type D

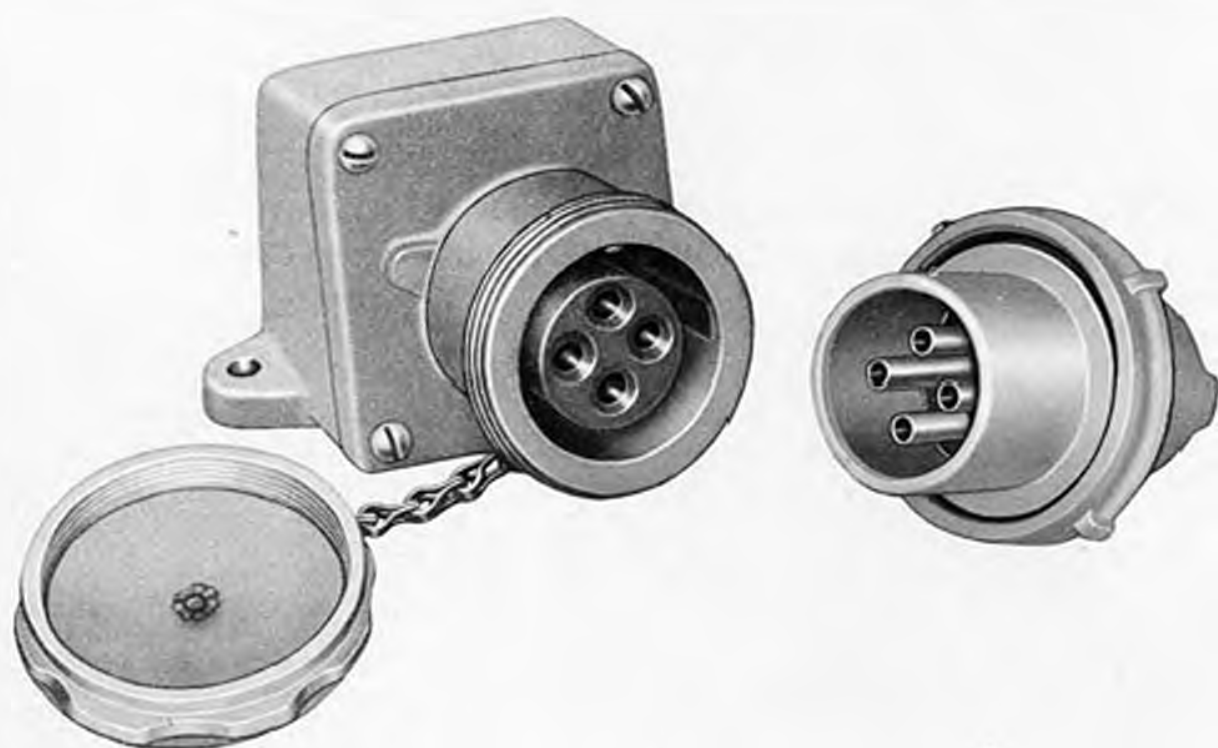
SAFETY PLUG TYPE E

IN SERVICE

DESCRIPTION

Safety Plug Type E is a device used with firing panels to prevent accidental firing. The plug has four prongs and a threaded collar. When the plug is inserted into its receptacle, the prongs make contact with the prongs in the receptacle; the threaded collar secures the plug to the threaded neck of the receptacle. When the safety plug is removed from the receptacle, the firing circuit of the firing panel is interrupted. Unlike other types

of safety plugs, the receptacle for this plug is mounted external to the firing panel, with electrical connections made to the firing panel through a terminal tube. A threaded protective cap is provided to cover the watertight receptacle when the safety plug is not inserted. This type of plug is used on Firing Panels Mk 27 and Mk33. Like Safety Plug Type A, Safety Plug Type E is also known as a plug-in, connector type plug.



Safety Plug Type E

LIFT TRUCK TYPE X-5

IN SERVICE

DESCRIPTION

Lift Truck Type X-5 is a vehicle for towing, positioning, and loading a missile on Missile Launcher X-5. The vehicle, which is a modified Lift Truck M22, has six rubber-tired wheels, a towing handle, a support track, and two hydraulic pistons.

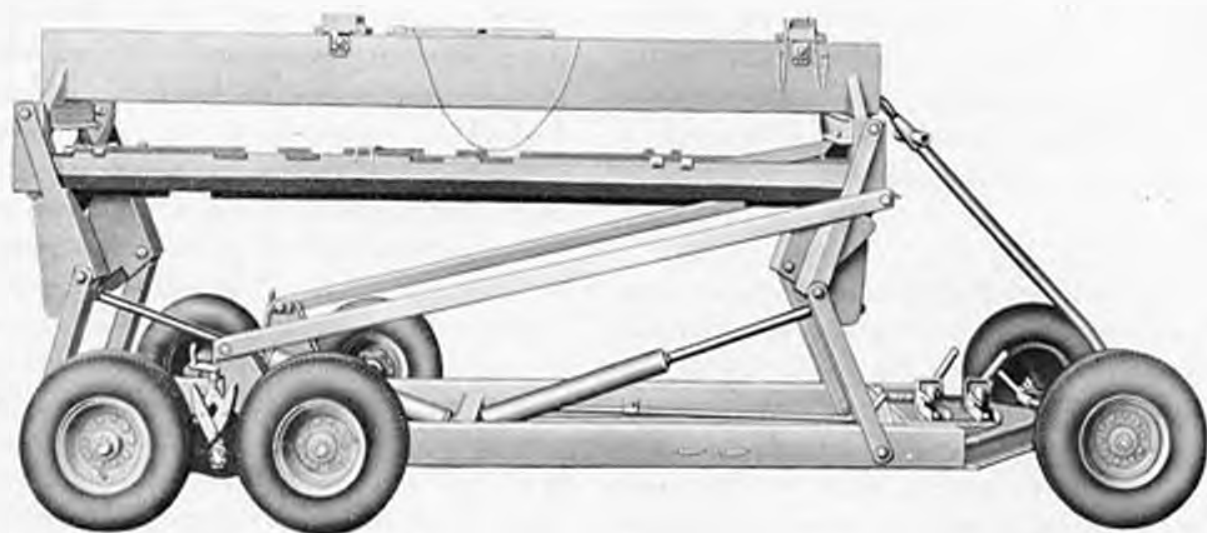
A parking brake handle is located between each pair of rear wheels. When this handle is rotated in a clockwise direction, the brake shoes are forced against the tires to prevent the vehicle from rolling or pivoting. The missile is positioned on the support track so that lugs on the under side of the missile engage clamps of the support track. A retaining pin on the forward clamp is used to secure the missile to the track. When the parking brake is released, the truck can be towed to the launcher by the towing handle.

After the truck is positioned below one of the launcher arms, the support track and missile are raised to the arm by two hydraulic pistons. These pistons are controlled by two hand pumps on the forward part of the truck. Simultaneous operation of the hand pumps elevates the missile horizontally; the missile can be tilted by operating the pumps individually. A wrench-operated cross slide screw on each of the support track clamps is used for lateral adjustment of the missile. When the lugs on the top of the missile are aligned with the launcher arm clamps, the truck is moved in to engage the lugs and clamps. The truck is removed by releasing the retaining pin and disengaging the missile lugs and support track clamps. Release valves on the hand pumps are used to lower the support track to its original position.

DATA

Number of wheels 6
Major dimensions:-
Height (max), in. 49
Height (min), in. 25

Major dimensions (cont)
Length, in. 170
Width, in. 60



Lift Truck Type X-5

LIFT TRUCK TYPE X-7

IN SERVICE

DESCRIPTION

Lift Truck Type X-7 is a vehicle for towing, positioning, and loading a missile on Missile Launcher X-7. The vehicle, which is a modified Lift Truck M22, has six rubber-tired wheels, a towing handle, support track, and two hydraulic pistons. The truck is similar to Lift Truck Type X-5 except that it is provided with extension brackets.

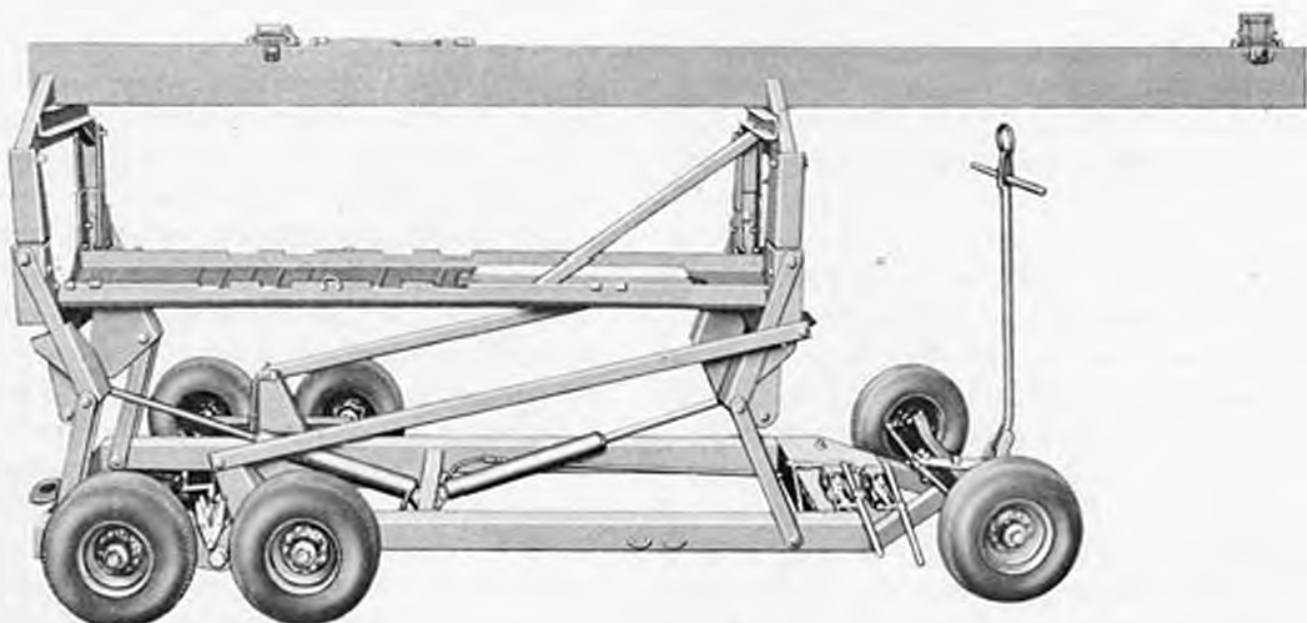
A parking brake handle is located between each pair of rear wheels. When this handle is rotated in a clockwise direction, the brake shoes are forced against the tires to prevent the vehicle from rolling or pivoting. The missile is positioned on the support track so that lugs on the under side of the missile engage clamps of the support track. A retaining pin on the forward clamp is used to secure the missile to the track. When the parking brake is released, the truck can be towed to the launcher by the towing handle.

After the truck is positioned below one of the launcher arms, the support track and missile are raised to the arm by two hydraulic pistons. These pistons are controlled by two hand pumps on the forward part of the truck. Simultaneous operation of the hand pumps elevates the missile horizontally; the missile can be tilted by operating the pumps individually. The extension brackets enable the track to be raised to a higher position than that of Lift Truck Type X-5. A wrench-operated cross slide screw on each of the support track clamps is used for lateral adjustment of the missile. When the lugs on the top of the missile have been aligned with the launcher arm clamps, the truck is moved in to engage the lugs and clamps. The truck is removed by releasing the retaining pin and disengaging the missile lugs and support track clamps. Release valves on the hand pumps are used to lower the support track to its original position.

DATA

Number of wheels 6
Major dimensions:-
Height (max), in. 64
Height (min), in. 40

Major dimensions (cont)
Length, in. 170
Width, in. 60



Lift Truck Type X-7

DOLLY TYPE X-3

IN SERVICE

DESCRIPTION

Dolly Type X-3 is a vehicle for towing, positioning, and loading an unarmed missile, or an unarmed missile and booster, on Missile Launcher X-3. The vehicle, which is constructed of steel members, has two dolly arms and a longitudinal support track. Four casters, one in each corner, support the dolly.

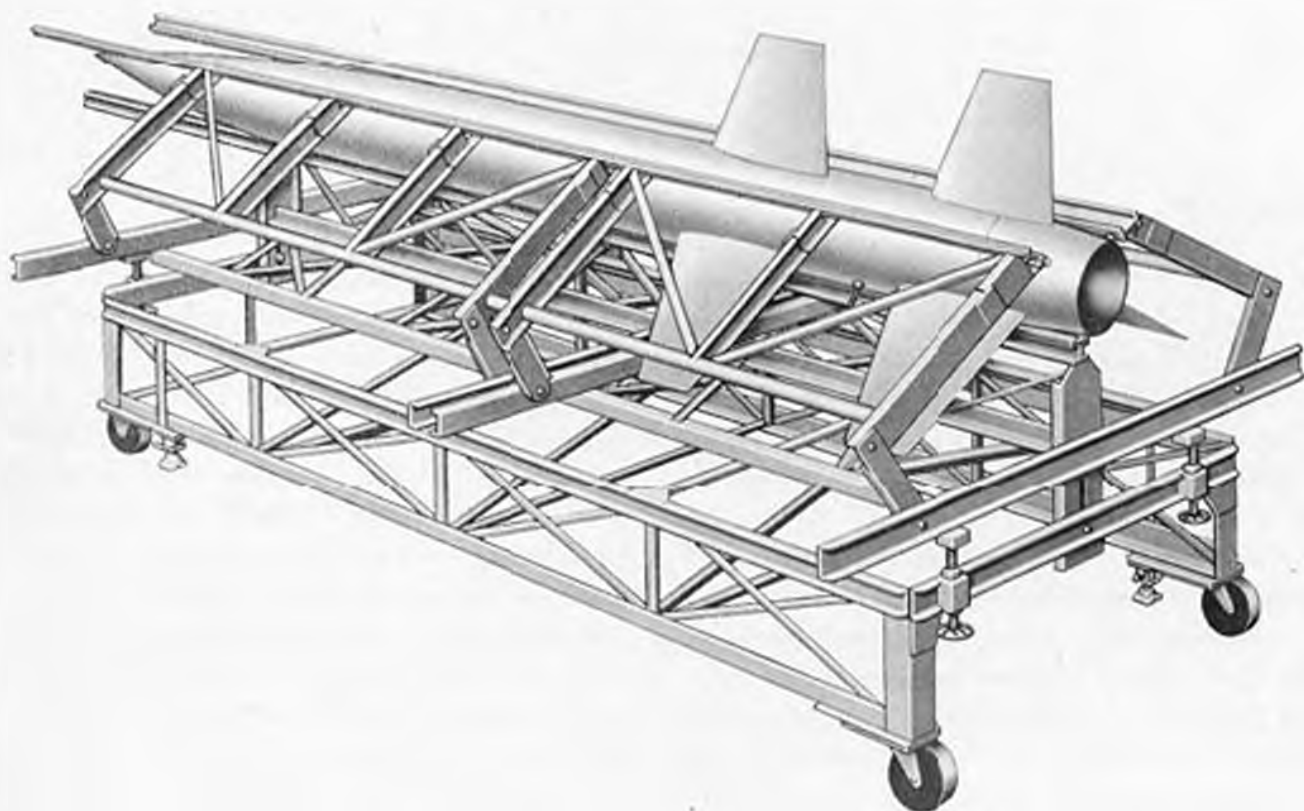
Two jack-type braking devices are mounted on the bottom longitudinal members of the dolly frame. These brakes are located near opposite corners of the dolly, and are lowered to the deck to keep the vehicle from rolling. When the dolly arms are rotated up to the vertical position, the missile and booster can be loaded into the dolly

separately from an overhead lift. The arms are then rotated down and inboard against the missile and booster to stabilize and support them. When the brakes are released, the vehicle can be moved to the launcher and aligned with the launcher rails. Alignment is made by arm adjustments and jacking screws, which control the position of the dolly support track. After the alignment has been made, the dolly is bolted to the launcher, adjustable rest pads within the dolly are released, and the missile and booster can be slid horizontally into the launcher. When the launcher is loaded, the dolly is disconnected and removed.

DATA

Number of wheels.....4
Major dimensions:-
Height (max), in.66.5

Major dimensions (cont)
Length, in. 324
Width, in.94.5



Dolly Type X-3

ROCKET LAUNCHER GUIDE MARK 51 MOD 0

IN SERVICE

DESCRIPTION

Rocket Launcher Guide Mk 51 Mod 0 is an electrically fired, automatic gravity-fed component of a weapon for laying intense rocket barrages. The guide, which is Rocket Launcher Mk 51 Mod 0 without the deck frame and crutch, has been modified for use as a component of new rocket launcher designs.

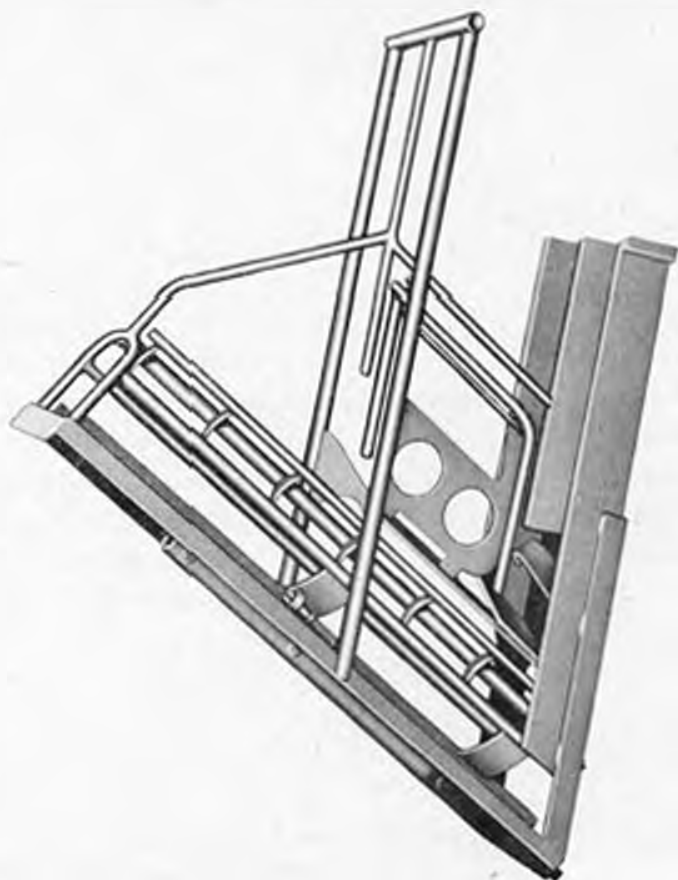
The guide consists of a supply magazine, firing magazine, reel, and a pair of launching rails. The magazines hold the rockets and feed them into the reel, which separates the rockets and permits them to drop onto the guides one at a time. The rockets are fed from the firing magazine first and then from the supply magazine.

DATA

Ammunition 5.0-inch rockets
Weight:-
 Unloaded, lb 152
 Loaded, lb 736
Dimensions:-
 Height at maximum elevation, in. 62

Dimensions (cont)
 Width, in. 13
 Length, in. 47
List of drawings Sk 165487
General arrangement drawing Dr 500996*
Applicable publications..... OP 1246

*Rocket Launcher Mk 51 Mod 0



Rocket Launcher Guide Mk 51 Mod 0

ROCKET LAUNCHER GUIDE EXTENSION MARK 1 MOD 0

OBSOLETE

DESCRIPTION

Rocket Launcher Guide Extension Mk 1 Mod 0 is a device used to increase the length of the launching guide on Rocket Launcher Mk 7 (Exp). By increasing the length of the guide, the dispersion of the rockets fired from the launcher is reduced.

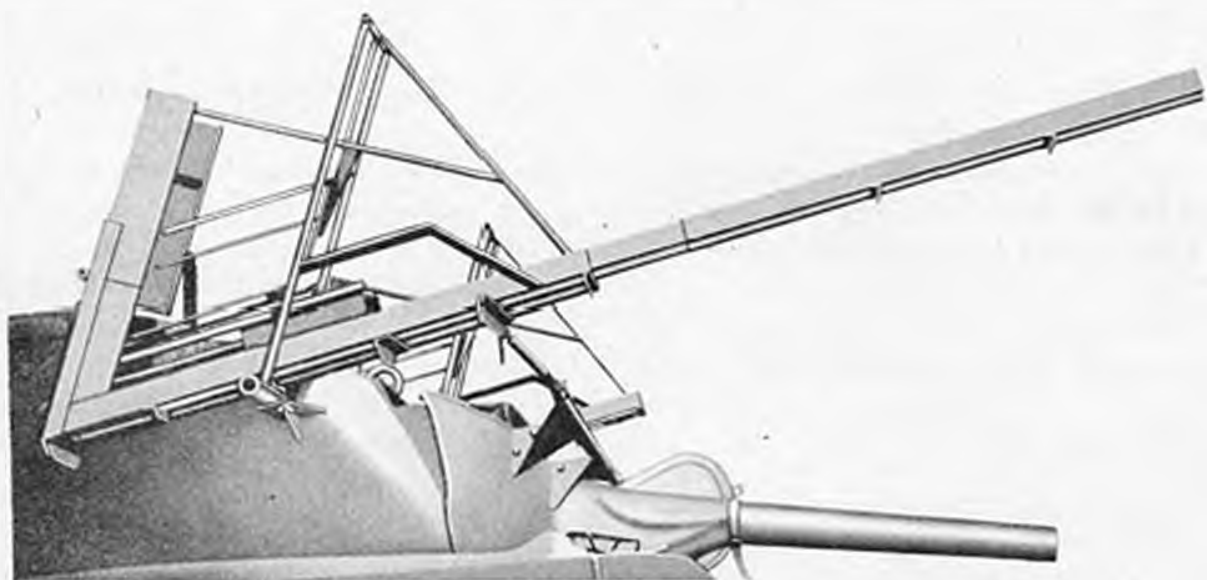
Rocket Launcher Guide Extension Mk 1 Mod 0

consists of two forward steel sections separated by cross members. The after section of the extension can be telescoped into the rocket launcher guide; the forward section of the extension is identical with the rocket launcher guide. When the extension is installed, a securing hook assembly on the extension engages the upper cross angle of the launcher guide.

DATA

Weight, lb 20
Dimensions:-
Height, in. 3.5
Width, in. 5.6
Length, in. 84

List of drawings Sk 166320
General arrangement drawing Dr 425074,5
Applicable publications OP 1131
(Change 1)



Rocket Launcher Guide Extension Mk 1 Mod 0

PORTABLE PLATFORM MARK 4 MOD 0

DEVELOPMENT DISCONTINUED

DESCRIPTION

Portable Platform Mk 4 Mod 0 is a two-wheeled cart for increasing the mobility of Rocket Launcher Mk 2 Mod 1. The cart can transport the rocket launcher in a ready loaded condition, and can serve as a firing platform.

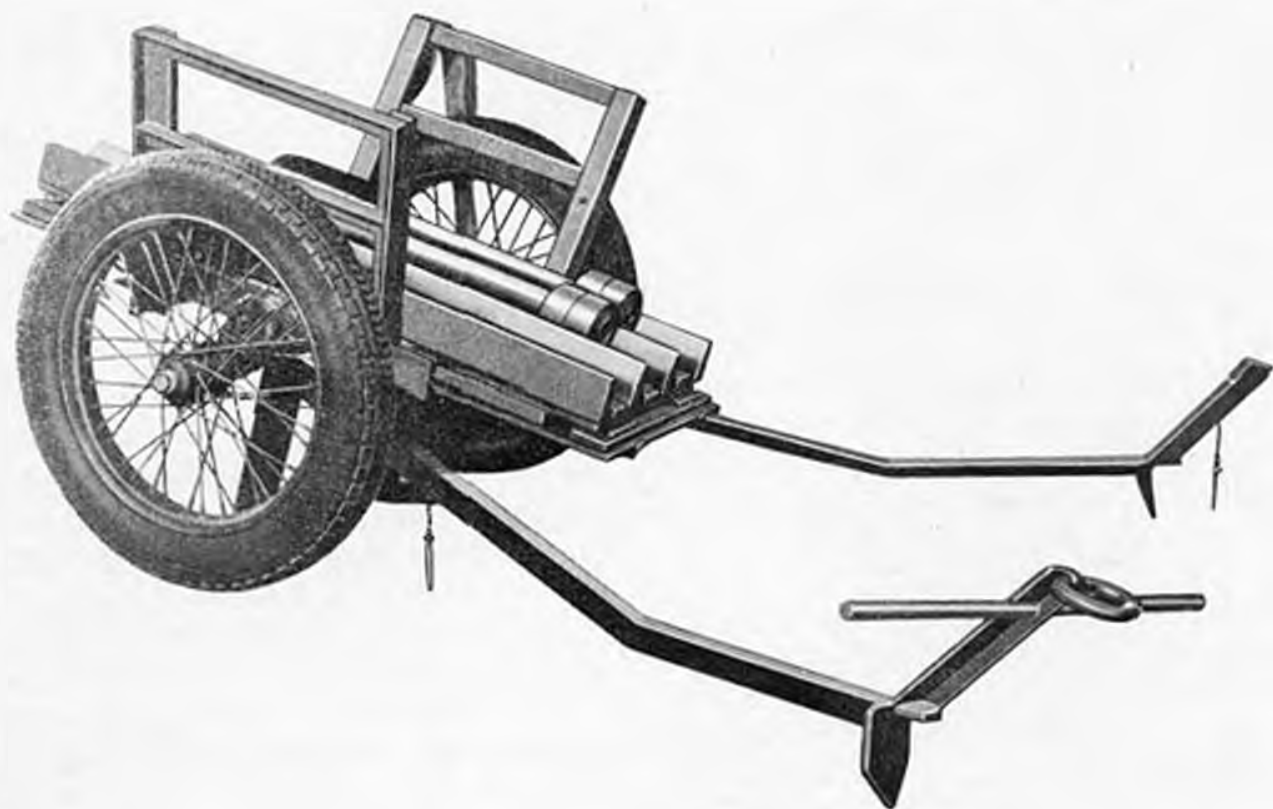
The cart, which is all metal, is equipped with pneumatic tires. Arms are provided to facilitate towing. The end of each towing arm contains a cleat that may be driven into the ground to emplace the cart when it is used as a firing platform.

DATA

Major dimensions:-

Height, in.38.5
Width, in.23.5
Length, in.78.5

List of drawingsnot assigned
General arrangementnot assigned
Applicable publications..... NavOrd Report 28-44



Portable Platform Mk 4 Mod 0

APPENDIX

The following items are included for completeness of record only. Sufficient information is not available to enable these items to be treated in a manner comparable to other items in the foregoing sections.

MISSILE LAUNCHERS

MISSILE LAUNCHER MK 3. This launcher is being developed for use in a Marine Corps missile launching system. The weapon is currently under development, and is designed to launch missiles of the TERRIER type.

MISSILE LAUNCHER MK 5. This launcher is being developed for use in Missile Launching System Mk 4 Mod 0. As part of a shipboard missile launching system, this weapon is being designed to launch missiles of the TERRIER type.

AIRCRAFT ROCKET LAUNCHERS

AIRCRAFT ROCKET LAUNCHER T110. This launcher combines the basic principles of gunfire and rocketfire to achieve an accurate, high rate of fire for 2.75-inch air-to-air spin-stabilized ammunition. The launcher is being tested and evaluated for aircraft use by the Bureau of Ordnance.

SURFACE ROCKET LAUNCHERS

ROCKET LAUNCHER MK 103. This launcher is an adaptation of the principles of Rocket Launcher Mk 102; the adaptation was made to increase the firepower. The development of Rocket Launcher Mk 103 was halted at the end of World War II.

DEPTH CHARGE PROJECTORS

DEPTH CHARGE PROJECTOR MK 9 MOD 0. This depth charge projector features a retractable arbor that utilizes the buffer action of burning propellant gases to halt the movement of the arbor on the forward stroke. The weapon was being developed at the end of World War II in an attempt to eliminate the expenditure of arbors, and to reduce the loading time of the projector.

DEPTH CHARGE PROJECTOR X-1 MOD 0. This projector consists of a Gun Train Indicator Mk 52 Mod 2, and a Depth Charge Projector Mk 6 Mod 2 mounted on a cradle. Depth Charge Projector X-1 Mod 0 is designed to project depth charges forward from surface vessels; the cradle mounting permits compensation for ship's roll. The weapon is currently under development.

