

NAVY TRAINING SYSTEM PLAN
FOR THE
SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT

N78-NTSP-A-50-0110/D

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**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

EXECUTIVE SUMMARY

This Navy Training System Plan (NTSP) has been developed to identify the life cycle manpower, personnel, and training requirements associated with Navy Shore-Based Aircraft Launch and Recovery Equipment (ALRE). The Shore-Based ALRE addressed in this NTSP include the E-28 Emergency Runway Arresting Gear, Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System (FLOLS), Shore-Based Portable Improved Fresnel Lens Optical Landing System (IFLOLS), Long Range Line-Up System (LRLS), Manually Operated Visual Landing Aid System (MOVLAS), Precision Approach Path Indicator (PAPI), and Glide Slope Indicator (GSI). All shore-based ALRE systems have achieved Initial Operating Capability with the exception of the LRLS which is scheduled for September 2001. All shore-based ALRE with the exception of the IFLOLS and LRLS are in the Operations and Support phase of the Defense Acquisition System (DAS). The IFLOLS and LRLS are in the Production and Deployment phase of the DAS.

The E-28 Emergency Runway Arresting Gear is designed to safely arrest tail-hook equipped aircraft in the event of an aborted takeoff or emergency landing at an ashore airfield. The FLOLS, IFLOLS, LRLS, MOVLAS, PAPI, and GSI are all Visual Landing Aids installed at Field Carrier Landing Practice sites and are primarily utilized as aircraft carrier Pilot training aids.

The FLOLS, IFLOLS, LRLS, MOVLAS, and GSI are operated by Landing Signal Officers (LSO) assigned to the squadron whose Pilots are performing practice carrier landings. The E-28 Emergency Runway Arresting Gear and PAPI are completely automatic in operation and do not require an operator.

All required initial operator training has been completed with the exception of training for the IFLOLS and LRLS. Initial IFLOLS and LRLS operator training will be presented at each site during installation by Carrier And Field Service Unit (CAFSU) personnel. Follow-on operator training for FLOLS, LRLS, MOVLAS, and GSI is established at the LSO School, Naval Air Station, Oceana, Virginia. Follow-on operator training for IFLOLS will be Ready For Training at the LSO School in April 2002.

Organizational and intermediate level maintenance of all shore-based ALRE addressed in this NTSP are performed by military, civilian, or contractor personnel assigned to the base Operations Department, Airfield Maintenance and Ground Electronics Branches. Depot level maintenance of shore-based ALRE is performed at Naval Aviation Depots, contractor facilities, and Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey.

No specific Navy rating or Navy Enlisted Classification is required for shore-based ALRE maintenance. All initial maintenance training has been completed with the exception of the

**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

IFLOLS. Initial IFLOLS maintenance training will be presented by CAFSU personnel at each site during installation. Follow-on E-28 Emergency Runway Arresting Gear, FLOLS, and MOVLAS maintenance training for Navy personnel is established at Naval Air Maintenance Training Unit (NAMTRAU) Norfolk, Virginia, and NAMTRAU North Island, California.

No follow-on maintenance training has been established or is planned for shore-based IFLOLS, LRLS, PAPI, and GSI. The skill levels of military personnel assigned to shore activities supporting these systems is adequate without additional training. At many shore activities, civilian or contractor personnel maintain the ALRE. In these cases, technical competency is a requirement of employment.

There are no operator or maintenance billets identified specifically to support the ALRE addressed in this NTSP; therefore, this NTSP has no effect on Navy manning or end strength.

**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

TABLE OF CONTENTS

	Page	
Executive Summary.....	i	
List of Acronyms.....	iv	
Preface.....	vii	
 PART I - TECHNICAL PROGRAM DATA		
A. Nomenclature-Title-Program.....	I-1	
B. Security Classification	I-1	
C. Manpower, Personnel, and Training Principals.....	I-1	
D. System Description.....	I-1	
E. Developmental Test and Operational Test.....	I-2	
F. Aircraft and/or Equipment/System/Subsystem Replaced	I-4	
G. Description of New Development	I-4	
H. Concepts	I-10	
1. Operational	I-10	
2. Maintenance.....	I-10	
3. Manning.....	I-15	
4. Training	I-16	
I. Onboard (In-Service) Training.....	I-21	
J. Logistics Support	I-21	
K. Schedules	I-26	
L. Government-Furnished Equipment and Contractor-Furnished Equipment Training Requirements.....	I-29	
M. Related NTSPs and Other Applicable Documents	I-29	
 PART II - BILLET AND PERSONNEL REQUIREMENTS		II-1
 PART III - TRAINING REQUIREMENTS.....		III-1
 PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS.....		IV-1
 PART V - MPT MILESTONES.....		V-1
 PART VI - DECISION ITEMS/ACTION REQUIRED		VI-1
 PART VII - POINTS OF CONTACT		VII-1

**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

LIST OF ACRONYMS

ABE	Aviation Boatswain's Mate (Equipment)
ACDU	Active Duty
ALRE	Aircraft Launch and Recovery Equipment
AOB	Average Onboard
ATIR	Annual Training Input Requirement
CFY	Current Fiscal Year
CIN	Course Identification Number
CINCLANTFLT	Commander in Chief Atlantic Fleet
CINCPACFLT	Commander in Chief Pacific Fleet
CM	Corrective Maintenance
CNET	Chief of Naval Education and Training
CNO	Chief of Naval Operations
CV	Aircraft Carrier
CVN	Aircraft Carrier Nuclear
FCLP	Field Carrier Landing Practice
FLOLS	Fresnel Lens Optical Landing System
FMS	Foreign Military Sales
FRS	Fleet Readiness Squadron
FY	Fiscal Year
GFE	Government Furnished Equipment
GSI	Glide Slope Indicator
HSI	Human Systems Integration
HUD	Head-Up Display
IFLOLS	Improved Fresnel Lens Optical Landing System
ILSP	Integrated Logistics Support Plan
IPB	Illustrated Parts Breakdown
LRLS	Long Range Line-up System
LSO	Landing Signal Officer
MOVLAS	Manually Operated Visual Landing Aid System
MRC	Maintenance Requirements Card

**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

LIST OF ACRONYMS

MSD	Material Support Date
NA	Not Applicable
NALF	Navy Auxiliary Landing Field
NADEP	Naval Aviation Depot
NAF	Naval Air Facility
NAMTRAU	Naval Air Maintenance Training Unit
NAS	Naval Air Station
NATOPS	Naval Air Training and Operating Procedures Standardization
NATTC	Naval Air Technical Training Center
NAVAIR	Naval Air Systems Command
NAVAIRSYSCOM	Naval Air Systems Command
NAVICP	Navy Inventory Control Point
NAVPERSCOM	Navy Personnel Command
NAWCAD	Naval Air Warfare Center Aircraft Division
NAWCADLKE	Naval Air Warfare Center Aircraft Division Lakehurst
NEC	Navy Enlisted Classification
NSD	Navy Support Date
NTSP	Navy Training System Plan
OJT	On-the-Job Training
OPEVAL	Operational Evaluation
OPN	Other Procurement, Navy
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	Office of the Chief of Naval Operations Instruction
OPO	OPNAV Principal Official
PAPI	Precision Approach Path Indicator
PFY	Previous Fiscal Year
PM	Preventive Maintenance
PMA	Program Manager, Air
PQS	Personnel Qualification Standards
RFOU	Ready For Operational Use
RFT	Ready For Training

**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

LIST OF ACRONYMS

SELRES	Selected Reserve
TAR	Training and Administration of the Naval Reserve
TD	Training Device
TECHEVAL	Technical Evaluation
TTE	Technical Training Equipment
ULSS	Users Logistics Support Summary

**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

PREFACE

This Draft Navy Training System Plan (NTSP) for the Shore-Based Aircraft Launch and Recovery Equipment (ALRE) and has been developed to comply with guidelines set forth in the Navy Training Requirements Documentation Manual, Office of the Chief of Naval Operations (OPNAV) Publication P-751-1-9-97. This document is the first iteration of the Draft NTSP for the Shore Based ALRE.

This NTSP incorporates into one document all ALRE currently employed at Navy shore bases and carrier practice landing fields. This NTSP addresses only Navy shore-based ALRE. Marine Corps shore-based ALRE will be addressed in The Expeditionary Air Field NTSP, A-50-0122/D currently being developed by the Naval Air Systems Command (AIR 3.4.1).

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. Nomenclature-Title-Acronym. Shore-Based Aircraft Launch and Recovery Equipment (ALRE)

2. Program Element. Since the ALRE addressed in this NTSP are all Other Procurement, Navy (OPN) funded programs, no program element numbers have been assigned.

B. SECURITY CLASSIFICATION

- 1. System Characteristics** Unclassified
- 2. Capabilities** Unclassified
- 3. Functions**..... Unclassified

C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

- OPNAV Principal Official (OPO) Program Sponsor..... CNO (N78)
- OPO Resource Sponsor CNO (N78)
- Developing Agency..... NAVAIRSYSCOM (PMA251)
- Training Agency CINCLANTFLT
CINCPACFLT
CNET
COMNAVRESFOR
- Training Support Agency..... NAVAIRSYSCOM (PMA205)
- Manpower and Personnel Mission Sponsor CNO (N12)
NAVPERSCOM (PERS-4, PERS-404)
- Director of Naval Training..... CNO (N7)

D. SYSTEM DESCRIPTION

1. Operational Uses. Shore-based ALRE consists of terminal guidance equipment and emergency arresting gear used at Navy shore installations.

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear is designed to safely arrest tail-hook equipped aircraft in the event of an aborted takeoff or emergency landing at an ashore airfield.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System (FLOLS) provides visual information needed to maintain the proper glideslope angle for landing to a Pilot whose aircraft is on final approach. The Mark 8 FLOLS is used primarily as a carrier Pilot, training aid.

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System. The Shore-Based Portable Improved Fresnel Lens Optical Landing System (IFLOLS) displays an optimal glide path and trend data to the Pilot of a fixed-wing aircraft on approach at up to one nautical mile. The shore-based IFLOLS is being installed at Field Carrier Landing Practice (FCLP) sites and will be primarily utilized as an aircraft carrier Pilot training aid.

d. Long Range Line-Up System. The Long Range Line-Up System (LRLS) provides precision long range visual guidance for a Pilot of an aircraft on approach. The shore-based LRLS is installed at FCLP sites and is primarily utilized as an aircraft carrier Pilot training aid.

e. Manually Operated Visual Landing Aid System. The Manually Operated Visual Landing Aid System (MOVLAS) is an emergency signaling system intended to be used when the primary optical landing system is inoperative. The shore-based MOVLAS is installed at FCLP sites and is primarily utilized as an aircraft carrier Pilot training aid.

f. Precision Approach Path Indicator. The Precision Approach Path Indicator (PAPI) System provides a Pilot of an aircraft on landing approach with the visual clues necessary to obtain a proper glideslope. The shore-based PAPI is installed at FCLP sites and is primarily utilized as an aircraft carrier Pilot training aid.

g. Glide Slope Indicator. The Mark 3 Mod 1 Glide Slope Indicator (GSI) is a shore-based aid for training Pilots in the use of the shipboard Mark 1 Mod 0 Stabilized GSI.

2. Foreign Military Sales. Information concerning Foreign Military Sales (FMS) of shore-based ALRE may be obtained from Program Manager, Air (PMA) 251.

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST

1. Development Test

a. E-28 Emergency Runway Arresting Gear. Technical Evaluation (TECHEVAL) of the E-28 Emergency Runway Arresting Gear was successfully completed at Naval Air Warfare Center Aircraft Division Lakehurst (NAWCADLKE), New Jersey, in the 1980s.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS successfully completed TECHEVAL at NAWCADLKE in the 1970s.

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System. TECHEVAL for IFLOLS was successfully completed at Naval Air Warfare Center Aircraft Division (NAWCAD) Patuxent River, Maryland, in September 1996.

d. Long Range Line-Up System. TECHEVAL for the LRLS was conducted aboard the USS Carl Vinson, Aircraft Carrier Nuclear (CVN)-70 in November 1997 and successfully completed onboard the USS Constellation, Aircraft Carrier (CV)-64 in November 1999.

e. Manually Operated Visual Landing Aid System. TECHEVAL for the MOVLAS was successfully completed over thirty years ago.

f. Precision Approach Path Indicator. The PAPI did not require TECHEVAL.

g. Glide Slope Indicator. TECHEVAL for the GSI was successfully completed in the 1980s.

2. Operational Test

a. E-28 Emergency Runway Arresting Gear. Operational Evaluation (OPEVAL) of the E-28 Emergency Runway Arresting Gear was successfully completed at NAWCADLKE in the 1980s.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS successfully completed OPEVAL at NAWCADLKE in the 1970s.

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System. Formal OPEVAL was not required for the IFLOLS.

d. Long Range Line-Up System. Formal OPEVAL was not required for the LRLS.

e. Manually Operated Visual Landing Aid System. Formal OPEVAL was not required for the MOVLAS.

f. Precision Approach Path Indicator. Formal OPEVAL was not required for the PAPI.

g. Glide Slope Indicator. OPEVAL for the GSI was successfully completed in the 1980s.

F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED

1. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear replaced the E-5 Emergency Runway Arresting Gear.

2. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 FLOLS replaced the Mark 10 FLOLS.

3. Shore-Based Portable Improved Fresnel Lens Optical Landing System. The Mark 13 Mod 0 IFLOLS replaced the Mark 6 Mod 3 FLOLS.

4. Long Range Line-Up System. The LRLS is new technology and did not replace any existing system.

5. Manually Operated Visual Landing Aid System. The MOVLAS did not replace any existing system.

6. Precision Approach Path Indicator. The PAPI replaced the FLOLS at selected Navy activities.

7. Glide Slope Indicator. The GSI did not replace any existing system.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description

a. E-28 Emergency Runway Arresting Gear. An aircraft arrestment using the E-28 Emergency Runway Arresting Gear is accomplished by the engagement of the aircraft's tail-hook with a deck pendant that spans the runway. During run-out, the kinetic energy of the arrested aircraft is absorbed by the rotary hydrodynamic arresting engines. The arrestment is entirely automatic. The arresting gear engines are activated when the aircraft's tail-hook engages the deck pendant, thereby pulling out the attached purchase tapes. As each tape unwinds, the drum, through a splined shaft, turns a vaned rotor between vaned stators in a housing filled with fluid. The turbulent fluid resistance decreases the rotational speed of the drums, thereby slowing down the purchase tape payout that in turn applies a braking force on the aircraft.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 Portable shore-based FLOLS is a trailer-mounted electro-optical landing system used at permanent and expeditionary airfields. The FLOLS provides a horizontal bar of lights that appears in the cell assembly. The position of the bar of lights with respect to a set of fixed horizontal datum lights indicates to the Pilot of an approaching aircraft whether the aircraft is above, below, or on the correct glide slope. The bar of light is formed by the combined actions of the source lights, Fresnel Lenses, and Lenticular Lenses. When the Pilot aligns the bar of light with the horizon datum lights, the aircraft's approach is correct for a runway landing.

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System.

The Shore-based IFLOLS is a portable trailer-mounted version of the IFLOLS Mark 13 Mod 0 shipboard system. The IFLOLS is towed to a concrete pad located adjacent to the runway, set-up and aligned, and put into operation. At the end of each exercise or at the end of each day the IFLOLS is removed and stored. The IFLOLS displays a virtual image (“meatball”) which appears aligned between two horizontal datum arms when the aircraft is on an optimal glide path for landing approach. As the aircraft traverses above or below the optimal glide path the ball will appear to move away from the datum axis respectively. The ball appears yellow in color unless the aircraft’s landing approach is greater than 45 degrees below the optimal glide path axis, in which case a flashing red color will be observed.

d. Long Range Line-Up System.

The LRLS consists of a runway edge unit and an operator station. The runway edge unit provides a light source appearing to the Pilot as a single point of light emanating from the landing area. The system is designed such that the Pilot sees a yellow light when on the proper centerline approach. A slight misalignment to the right of centerline will be indicated by a steady green light. A further right misalignment will be indicated by a slow flashing green light. An extreme right misalignment will be indicated by a fast flashing green light. Likewise, a slight misalignment to the left of centerline will be indicated by a steady red light. A further left misalignment will be indicated by a slow flashing red light. An extreme left misalignment will be indicated by a fast flashing red light.

e. Manually Operated Visual Landing Aid System.

The MOVLAS is designed to present glide slope information to the Pilot of an approaching aircraft in the same manner as the FLOLS or IFLOLS. When either the FLOLS or IFLOLS becomes inoperative, the portable, trailer-mounted MOVLAS is towed into position and operates in place of the inoperative system until repairs are completed.

f. Precision Approach Path Indicator.

The PAPI uses four individual units, each consisting of two lights permanently installed perpendicular to the runway, arranged in a single bar configuration. Each unit projects a split beam of light precisely divided horizontally into a white upper section and a red lower section. The transition from red to white or vice versa occurs over a vertical angle of approximately three degrees glide slope with the light in this area being pink in color.

g. Glide Slope Indicator.

The GSI, which is mounted on a tripod, provides a single bar of light. The color of the light indicates to the Pilot of an approaching aircraft whether the aircraft is above, below, or on the correct glide slope. The GSI incorporates a wave-off light that when flashing indicates to the Pilot that he should abort the landing attempt and initiate a new landing approach.

2. Physical Description

a. E-28 Emergency Runway Arresting Gear.

The E-28 Emergency Runway Arresting Gear general arrangement consists of two arresting engine assemblies and two runway edge sheave assemblies installed on concrete foundations on opposite sides of the runway.

Purchase tapes from each arresting engine assembly are coupled to a common deck pendant assembly. Major components include a tape drum and capstan assembly, a retrieve drive sprocket and bearing assembly, and a vaned rotor mounted on a common shaft assembled in a vaned housing. An engine absorber unit is mounted on a steel base on which are also mounted a retrieve engine, an arrestor sheave, and a tape pressure arm pivot. Leading E-28 Emergency Runway Arresting Gear particulars are as follows:

Arresting Engine

Gross Weight..... 11,700 pounds
 Length..... 13 feet
 Width 33 inches
 Rewind System Power Gasoline engine
 Purchase Tape Data..... Nylon, 8 inches wide, 0.344 inches thick
 Deck Pendant Construction 1 ¼ inch diameter non-rotating wire rope
 Run-out 1,000 feet

Torque Converter

Maximum input speed..... 3000 revolutions per minute
 Maximum input torque 270 pounds per foot
 Maximum torque multiplication ratio 3.42 to 1
 Charging oil capacity 12 gallons per minute at 1800 revolutions per minute
 Weight..... 250 pounds

Retrieve Engine

Number of cylinders..... 4
 Bore and stroke 3 ¾ inches x 4 inches
 Piston displacement 177 cubic inches
 Electrical system..... 12 volt
 Cooling..... Air
 Horsepower..... 56.7
 Weight..... 530 pounds

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 FLOLS is mounted on a modified ¼-ton, two-wheel cargo trailer upon which a frame assembly, cell assembly, junction box, spare parts box, control box reel assembly, separate wave-off intensity control box, source light failure indicator, trailer jack assemblies, and sighting mirror assembly are mounted. Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Control Box	20.00	36.25	20.00	250

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Junction Box	6.75	22.50	20.25	50
Source Light Failure Indicator	10.50	6.47	4.75	10
Wave-off Intensity Control	16.25	14.25	8.75	25
Jack and Level Assemblies	22.00	8.00	3.00	25
Frame Assembly	66.50	204.00	14.50	90
Cell Assemblies (five each)	10.00	22.75	32.50	50
Sighting Mirror Assembly	97.00	1.50 (diameter)		35

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System.

Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Trailer	102.0	84.0	144.0	2333.0
Indicator Display Assembly	73.0	17.0	42.0	1350.0
Landing Signal Officer (LSO) Control Panel Assembly	18.5	13.0	24.5	70.0
Mounting Structure Assembly	65.0	51.0	51.8	800.0
Port Datum Arm Assembly	50.0	27.0	70.0	100.0
STBD Datum Arm Assembly	50.0	27.0	70.0	100.0
Distribution Junction Box	17.5	6.2	15.0	20.0
Port Wave Off and Cut Lamp Arm Assembly	57.0	33.0	40.0	120.0
STBD Wave Off and Cut Lamp Arm Assembly	57.0	33.0	40.0	120.0
Lighting Junction Box Assembly	7.6	11.4	13.4	16.9

d. Long Range Line-Up System. The LRLS consists of a runway edge unit, a control panel, and a weather cover.

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Runway Edge Unit	5.0	42.0	42.0	140
Weather Cover	6.5	48.5	65.0	60
Control Panel Assembly	6.5	10.5	3.0	10

e. Manually Operated Visual Landing Aid System. The following table lists the MOVLAS major components' characteristics:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Light Box (A-100A)	60.5	12.0	5.50	46.0
LSO Controller (A-200)	61.0	6.3	16.80	25.0
* Power Control Box (A-300A)	23.0	16.0	8.00	96.0
Datum Light Boxes (A-400A, A-401A)	25.5	66.0	4.75	17.5
* Datum Control Box (A-500A)	23.0	16.0	8.00	75.0
Transformer (A-600A)	23.0	16.0	8.00	105.0
Dual Connector Box (A-1000)	23.0	16.0	8.00	42.0
Light Box Monitor (A-1100)	11.0	7.0	7.30	20.0
Junction Box (A-1200)	16.0	12.0	7.20	40.0

* Power required to operate the Power Control Box is 115 Volts, 60 Cycle (Type 1), Single Phase, 20 Amperes (MAX). Power Required to operate the Datum Control Box is 115 Volts, 60 Cycle (Type 1), Single Phase, 25 Amperes (MAX).

f. Precision Approach Path Indicator. Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Base Assembly	7.75	17.38	29.380	50
Module Assembly	6.50	6.00	19.500	20
Tilt Switch Assembly	4.00	5.25	3.025	1

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Hood Assembly	8.50	14.19	32.060	5
Leg Cap Assembly	5.50	3.00	3.000	2
Power Adapter Assembly	20.00	20.00	11.500	75

g. Glide Slope Indicator. Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Control Panel Assembly	15.00	13.6250	7.3125	25
Transformer Assembly	13.25	9.1875	6.3125	18
GSI Assembly	13.00	22.5000	26.000	60
Tripod Assembly	29.00	10.0000 (diameter)		34
Wave-off Light Bar Assembly	22.00	4.0000	30.000	13
Portable Switch Assembly	8.1875 (length)			5

3. New Development Introduction

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear was installed as new equipment.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 FLOLS was introduced as a retrofit replacement for the Mark 10 FLOLS.

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System. IFLOLS is being introduced as a replacement for existing shore-based FLOLS through new production.

d. Long Range Line-Up System. The LRLS was introduced as new equipment at selected shore bases.

e. Manually Operated Visual Landing Aid System. The MOVLAS was introduced as new equipment at selected shore bases.

f. Precision Approach Path Indicator. The PAPI was introduced as new equipment at selected Navy shore-based activities.

g. Glide Slope Indicator. The GSI was introduced as new equipment at FCLP locations.

4. Significant Interfaces. Not Applicable (NA)

5. New Features, Configurations, or Material. NA

H. CONCEPTS

1. Operational Concept

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear is automatically activated when an aircraft's tail-hook engages the deck pendant. No operator is required.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System. The IFLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

d. Long Range Line-Up System. The LRLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

e. Manually Operated Visual Landing Aid System. The same civilian or Navy personnel responsible for airfield maintenance are responsible for setup of the MOVLAS and breakdown of the MOVLAS after use. Once set up, the MOVLAS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

f. Precision Approach Path Indicator. Once energized, the PAPI operates completely automatically. No operator is required.

g. Glide Slope Indicator. The GSI is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

2. Maintenance Concept

a. E-28 Emergency Runway Arresting Gear. All maintenance of the E-28 Emergency Runway Arresting Gear is performed at the organizational level. No intermediate or depot level repair is required.

(1) Organizational. Organizational level maintenance consists of both Preventive Maintenance (PM) and Corrective Maintenance (CM). Organizational level

maintenance is performed by civilian or Navy personnel. No specific rating or Navy Enlisted Classification (NEC) is required.

(a) Preventive Maintenance. PM includes cleaning, inspection, lubrication, alignment, adjustments, and operational and functional testing of the arresting gear in accordance with specific requirements identified in the E-28 Emergency Runway Arresting Gear Maintenance Plan, SSIED MP No. 009-81.

(b) Corrective Maintenance. CM consists of operational and functional testing, fault isolation, and repair by assembly, subassembly, component, or piece-part replacement.

(2) Intermediate. NA

(3) Depot. No repair is performed at the depot level; however, the disassembly and assembly of the arresting gear on-site is considered a depot level procedure.

(4) Interim Maintenance. NA

(5) Life Cycle Maintenance Plan. The E-28 Emergency Runway Arresting Gear is replaced on a 15-year life cycle. It is more cost effective to replace the E-28 Emergency Runway Arresting Gear every 15 years than to establish an organic or commercial rework program. Activities where the equipment is exposed to adverse environmental conditions may employ a shorter replacement cycle.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. A remove and replace maintenance concept is applied to Mark 8 FLOLS. Fault isolation is accomplished through the use of built-in test equipment and common test equipment. Maintenance of the FLOLS is performed at three levels, organizational, intermediate, and depot.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is conducted at specific intervals as prescribed by the applicable Maintenance Requirements Cards (MRC). PM actions include corrosion inspection, cleaning, lubricating, alignment, adjustment, pre-operational inspections, post-operational inspections, and functional testing.

(b) Corrective Maintenance. CM consists of fault isolation, replacement of failed modules, functional testing, corrosion treatment, and system calibration.

(2) Intermediate. Intermediate level maintenance is restricted to the periodic calibration of digital multi-meters used in the system.

(3) Depot. Depot maintenance consists of repair or complete restoration, manufacture of parts assemblies, and functional testing of assemblies. Naval Aviation Depot (NADEP) North Island, California, is the designated depot level maintenance activity for FLOLS.

(4) Interim Maintenance. Interim maintenance support was provided by NAWCADLKE prior to the Navy Support Date (NSD) of May 1988.

(5) Life Cycle Maintenance Plan. NA

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System. A remove and replace maintenance concept is applied to the Shore-Based IFLOLS. Fault isolation is accomplished through the use of built-in test equipment and common test equipment. IFLOLS maintenance is performed at two levels, organizational and depot.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is conducted at specific intervals as prescribed by the MRCs. PM actions include corrosion inspection, cleaning, lubricating, alignment, adjustment, pre-operational inspections, post-operational inspections, and functional testing.

(b) Corrective Maintenance. CM consists of fault isolation, replacement of failed modules, functional testing, corrosion treatment, and system calibration.

(2) Intermediate. NA

(3) Depot. Depot level is responsible for rework and overhaul of the IFLOLS repairable assemblies. CM actions include repair or complete restoration, manufacture of parts and assemblies, and functional testing. NADEP North Island is the designated depot level repair activity for IFLOLS.

(4) Interim Maintenance. NAWCADLKE will provide interim support for IFLOLS prior to the NSD scheduled for June 2003.

(5) Life Cycle Maintenance Plan. NA

d. Long Range Line-Up System. LRLS maintenance is conducted at two levels, organizational and depot.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is conducted at specific intervals in accordance with MRCs. PM actions consist primarily of optical lens cleaning and inspection for corrosion and integrity of connector weather-proofing.

(b) Corrective Maintenance. CM consists of fault isolation to the component level, replacement of failed modules and components, and connector weather-proofing.

(2) Intermediate. NA

(3) Depot. Depot level maintenance is performed by the contractor and consists of complete repair, restoration, and manufacture of parts, assemblies, subassemblies, and end items.

(4) Interim Maintenance. The LRLS is a commercial, Non-Developmental Item. The contractor will provide interim support of the LRLS until the NSD of March 2002.

(5) Life Cycle Maintenance Plan. NA

e. Manually Operated Visual Landing Aid System. MOVLAS maintenance is conducted only at the organizational level, following the direction and guidance outlined in the Office of the Chief of Naval Operations Instruction (OPNAVINST) 4790.2G.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is performed at specific intervals in accordance with procedures detailed in the MOVLAS Maintenance Plan, NAWCADLKE-M84096002. PM actions include cleaning, inspection, alignment, adjusting, and functional testing.

(b) Corrective Maintenance. CM includes functional testing, fault isolation to the failed component, removal, and repair or replacement.

(2) Intermediate. NA

(3) Depot. NA

(4) Interim Maintenance. Interim Maintenance is not required. The NSD for MOVLAS was reached in September 1969.

(5) Life Cycle Maintenance Plan. NA

f. Precision Approach Path Indicator. The PAPI is maintained at two levels, organizational and intermediate, under the Reliability Centered Maintenance concept prescribed by OPNAVINST 4790.2G.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform PAPI organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM includes cleaning, inspection, lubrication, alignment, adjustments, and operational and functional testing of the arresting gear in accordance with specific requirements identified in the PAPI Maintenance Plan, NAWCADLKE-M85094002.

(b) Corrective Maintenance. CM consists of operational and functional testing, fault isolation, and repair by assembly, subassembly, component, or piece-part replacement.

(2) Intermediate. Intermediate maintenance of the PAPI consists of both PM and CM. PM tasks include those actions that require non-destructive testing and calibration. CM includes all other maintenance actions beyond the capability of organizational maintenance.

(3) Depot. NA

(4) Interim Maintenance. NA

(5) Life Cycle Maintenance Plan. Major components of the PAPI are replaced with new components when no longer economically serviceable.

g. Glide Slope Indicator. A remove and replace maintenance concept is applied to the GSI. GSI maintenance is performed at two levels, organizational and depot.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is conducted at specific intervals as prescribed by the MRCs. PM actions include corrosion inspection, cleaning, lubricating, alignment, adjustment, pre-operational inspections, post-operational inspections, and functional testing.

(b) Corrective Maintenance. CM consists of fault isolation, replacement of failed modules, functional testing, and corrosion treatment.

(2) Intermediate. NA

(3) Depot. Depot level is responsible for rework and overhaul of the GSI repairable assemblies. Corrective maintenance actions include repair or complete restoration, manufacture of parts and assemblies, and functional testing. Depot level maintenance is performed by NAWCADLKE.

(4) Interim Maintenance. NA

(5) Life Cycle Maintenance Plan. NA

3. Manning Concept

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear requires no operator. There are no billets identified solely for the maintenance of the E-28 Emergency Runway Arresting Gear. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the E-28 Emergency Runway Arresting Gear.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the shore-based FLOLS. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the FLOLS.

c. Shore-Based Portable Improved Fresnel Lens Optical Landing System. The IFLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the Shore-Based IFLOLS. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the IFLOLS.

d. Long Range Line-Up System. The initial adjustments required for the LRLS are made by Operations Department personnel or LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the shore-based LRLS. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the LRLS.

e. Manually Operated Visual Landing Aid System. The MOVLAS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the shore-based MOVLAS. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the MOVLAS.

f. Precision Approach Path Indicator. The PAPI does not require an operator. There are no billets identified solely for the maintenance of the shore-based PAPI. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the PAPI.

g. Glide Slope Indicator. The GSI is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the

maintenance of the shore-based GSI. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the GSI.

4. Training Concept. All formal initial operator and maintenance training for the ALRE addressed in this NTSP has been completed. Informal operator and maintenance training for the IFLOLS and LRLS will be presented at each site by the Fleet Installation Team during installation.

Follow-on operator training is established at the Navy LSO School, Oceana, Virginia, for the Mark 8 FLOLS, LRLS, MOVLAS, and GSI. Follow-on operator training for the IFLOLS will be added to the Navy LSO School curricula. The Ready For Training (RFT) date for IFLOLS is scheduled for April 2002.

Follow-on maintenance training for the E-28 Emergency Runway Arresting Gear, Mark 8 FLOLS, and MOVLAS is established as a two-day course at Naval Air Maintenance Training Units (NAMTRAU) Norfolk, Virginia, and North Island, California. This course is usually taught on-site at the requesting activity. No follow-on maintenance training for shore-based IFLOLS, LRLS, PAPI, or GSI has been established or is planned. At many shore activities the ALRE is maintained by civilian or contractor personnel. In these cases, technical competency is a requirement of employment.

Maintenance training for the IFLOLS, LRLS, PAPI, and GSI is included in course *C-670-2010, Optical Landing System Maintenance*. This 68-day course is available at Naval Air Technical Training Center (NATTC) Detachment Lakehurst, New Jersey. Upon completion of the course, the student is awarded NEC 4745, Optical Landing System Technician. Personnel with NEC 4735 are only assigned to afloat maintenance billets and shore instructor billets. Therefore, since these technicians would not be maintaining shore-based ALRE, this course is not addressed this NTSP.

a. Initial Training. All initial training has been completed.

b. Follow-on Training

Title **Shore-Based Arresting Gear and Optical Landing Aids**
CIN C-670-2014
Model Manager ... NAMTRAU North Island
Description This course provides training to the shore-based airfield maintenance technician, including:
 ° Operation of the E-28 Arresting Gear
 ° Maintenance and Lubrication of the E-28 Arresting Gear
 ° Mark 8 Optical Landing System
 ° MK 2 MOD 2 MOVLAS
Upon completion, the student will be able to maintain shore-based arresting gear and optical landing aids under supervision.
Location ° NAMTRAU Norfolk
 ° NAMTRAU North Island
Length 2 days
RFT date Currently available
Skill identifier..... None
TTE/TD..... None
Prerequisite..... Aviation Boatswain's Mate (Equipment) (ABE) or other rating assigned to a shore airfield maintenance billet.

Title **Initial Formal Ground Training**
CIN D-2G-0001
Model Manager .. Navy LSO School
Description This course provides training to the prospective Squadron LSO, including:
 ◦ LSO Administrative and Operational Responsibilities Including Shore-Based and Shipboard Equipment
 ◦ Glideslope Geometry
 ◦ Aircraft Recovery Bulletins
 ◦ Aircraft Characteristics
 ◦ Waving Concepts and Techniques
 ◦ Field Carrier Landing Practice
 ◦ Fleet Automated Performance Assessment and Readiness Training Systems
 Upon completion, the student will be able to perform the duties of a Squadron LSO without supervision.
Location Navy LSO School, Naval Air Station (NAS) Oceana
Length 10 days
RFT date Currently available; April 2002 with IFLOLS included.
Skill identifier None
TTE/TD Refer to element IV.A.1
Prerequisites ◦ Designator 1310
 ◦ Designation as LSO Trainee

Title **Advanced Formal Ground Training**

CIN D-2G-0002

Model Manager .. Navy LSO School

Description This course provides training to the prospective Airwing or Staff LSO, including:

- Administrative and Operational Responsibilities of an Airwing Staff LSO
- Platform Strategy
- Barricade
- Pitching Deck Recoveries
- LSO Training and Evaluation
- Fleet Automated Performance Assessment and Readiness Training System

Upon completion, the student will be able to perform the duties of a Wing or Staff LSO without supervision.

Location Navy LSO School, NAS Oceana

Length 3 days

RFT date Currently available; April 2002 with IFLOLS included.

Skill identifier None

TTE/TD Refer to element IV.A.1

Prerequisites ◦ Designator 1310
◦ D-2G-0001, Initial Formal Ground Training
◦ Wing LSO Designation

Title **Fleet Readiness Squadron Training Command**

CIN D-2G-0003

Model Manager .. Navy LSO School

Description This course provides training to the prospective Fleet Readiness Squadron (FRS) and Training Command LSO, including:

- Administrative and Operational Responsibilities of a Training LSO
- Teaching Waving Techniques and Considerations
- Conducting Ground Training and Field Carrier Landing Practice
- Initial Carrier Qualification Requirements
- FRS Automated Performance Assessment and Readiness Training System

Upon completion, the student will be able to perform the duties of an FRS or Training Command LSO without supervision.

Location Navy LSO School, NAS Oceana

Length 3 days

RFT date Currently available; April 2002 with IFLOLS included.

Skill identifier None

TTE/TD Refer to element IV.A.1

Prerequisites ◦ Designator 1310
 ◦ D-2G-0002, Initial Formal Ground Training
 ◦ Squadron LSO Designation

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
1310	◦ Pilot assigned to an LSO billet.
ABE	◦ C-604-2012, Aviation Boatswain's Mate Launch and Recovery Equipment Class A1

d. Training Pipelines. NA

I. ONBOARD (IN-SERVICE) TRAINING

1. Proficiency or Other Training Organic to the New Development

a. **Maintenance Training Improvement Program.** NA

b. **Aviation Maintenance Training Continuum System.** NA

2. **Personnel Qualification Standards.** With the exception of systems that employ a Fresnel Lens, no Personnel Qualifications Standards (PQS) have been developed for shore-based ALRE.

PQS TITLE	NUMBER	MODEL MANAGER
Fresnel Lens	NAVEDTRA 43225-6B	COMNAVAIRPAC
Fresnel Lens	NAVEDTRA 43225-6B/SA	COMNAVAIRPAC

3. **Other Onboard or In-Service Training Packages.** On-The-Job Training (OJT) is used at shore bases to improve the technical competence of personnel assigned to the Operations Department, Airfield Maintenance Division, and Ground Electronics Branch. This OJT is applicable to military, civil service, and contractor personnel engaged in airfield and visual landing aids maintenance.

J. LOGISTICS SUPPORT

1. E-28 Emergency Runway Arresting Gear

a. **Manufacturer and Contract Numbers.** The manufacturer and contract numbers are not available.

b. **Program Documentation.** The E-28 Emergency Runway Arresting Gear Maintenance Plan, SSIED MP No. 009-81, was approved in May 1982. No Integrated Logistics Support Plan (ILSP) will be developed for the E-28 Emergency Runway Arresting Gear.

c. **Technical Data Plan.** All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with Illustrated Parts Breakdown (IPB) and MRCs have been approved, published, and distributed.

d. **Test Sets, Tools, and Test Equipment.** No special tools, test sets, or test equipment is required to support the E-28 Emergency Runway Arresting Gear.

e. Repair Parts. Repair parts for the E-28 Emergency Runway Arresting Gear are managed by the Naval Inventory Control Point (NAVICP), Philadelphia, Pennsylvania. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. NA

2. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System

a. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
Information not available	S. W. Electronics and Manufacturing Corporation	619 Hollywood Avenue Cherry Hill, NJ 08002

b. Program Documentation. No ILSP was developed for FLOLS; however, an updated Operational Logistics Support Plan, NAEC 51-8044, dated December 1987, has been prepared and is available.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. All special tools required to support the FLOLS have been procured and distributed.

e. Repair Parts. Repair parts for the FLOLS are managed by the NAVICP, Philadelphia. Requests for parts are processed through normal supply channels. The Material Support Date (MSD) for the FLOLS was in the 1980s.

f. Human Systems Integration. NA

3. Shore-Based Portable Improved Fresnel Lens Optical Landing System

a. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N00019-96-D-0159	Raytheon Technical Services Company	12160 Sunrise Valley Drive Suite 500 Reston, VA 20191

b. Program Documentation. A Users Logistics Support Summary (ULSS), NAWCADLKE-U82093001, is being developed by NAWCADLKE. The Draft ULSS is dated March 2001. The IFLOLS Maintenance Plan, NAWCADLKE M82093001, was approved in May 1997.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools, test sets, or test equipment is required to support the IFLOLS.

e. Repair Parts. Prior to the MSD, scheduled for June 2002, repair parts will be provided by the contractor. After the MSD, repair parts for the IFLOLS will be managed by the NAVICP, Philadelphia. Requests for parts will be processed through normal supply channels.

f. Human Systems Integration. Human Systems Integration (HSI) Plan, NAWCADLKE-MISC-05-SR-0117, dated September 1993, addresses all HSI issues applicable to the IFLOLS.

4. Long Range Line-Up System

a. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N68335-97-C-0014	Raytheon E-Systems	6380 Hollister Road Goleta, CA 93117

b. Program Documentation. A ULSS is will be developed by NAWCADLKE.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools, test sets, or test equipment is required to support the LRLS.

e. Repair Parts. Prior to the MSD of March 2002, the contractor will provide supply support. After the MSD, repair parts for the LRLS will be managed by the NAVICP, Philadelphia.

f. Human Systems Integration. NA

5. Manually Operated Visual Landing Aid System

a. Manufacturer and Contract Numbers. The manufacturer and contract numbers are not available.

b. Program Documentation. The updated MOVLAS Maintenance Plan, NAWCADLKE-M85094002, was approved in April 1996. No ILSP will be developed for MOVLAS.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools, test sets, or test equipment is required to support the MOVLAS.

e. Repair Parts. Repair parts for the MOVLAS are managed by the NAVICP, Philadelphia. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. NA

6. Precision Approach Path Indicator

a. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N68335-95-C-0049	Multi Electric Manufacturing, Inc.	4223-43 West Lake Street Chicago, IL 60624

b. Program Documentation. The PAPI Maintenance Plan, NAWCADLKE-M85094002, was approved in May 1996. The PAPI ULSS, NAWCADLKE-U85094002, was approved in September 1997.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. Two special tools are required to support the PAPI. The special tools are a PAPI Aiming Device and a PAPI Optical Gauge. Both of these tools are included with each PAPI System.

e. Repair Parts. Repair parts for PAPI are managed by the NAVICP, Philadelphia. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. NA

g. Glide Slope Indicator

a. Manufacturer and Contract Numbers. The Glide Slope Indicator was manufactured by NAWCADLKE. Contract numbers not available.

b. Program Documentation. The GSI Maintenance Plan, SSIED MP No. 006-86, was approved in August 1986. No other program documentation or other logistics plans were developed for the shore-based GSI program.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools or equipment is required to support the GSI.

e. Repair Parts. Repair parts for the GSI are managed by the NAVICP, Philadelphia. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. NA

K. SCHEDULES

1. E-28 Emergency Runway Arresting Gear

a. Installation and Delivery Schedules. All E-28 Emergency Runway Arresting Gear has been delivered and installed.

b. Ready For Operational Use Schedule. The E-28 Emergency Runway Arresting Gear is Ready For Operational Use (RFOU) upon completion of installation and certification.

c. Time Required to Install at Operational Sites. The E-28 Emergency Runway Arresting Gear requires approximately 90 days to install.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule. No Training Devices (TD) are required to support E-28 Emergency Runway Arresting Gear training. All Technical Training Equipment (TTE) required to support E-28 Emergency Runway Arresting Gear training has been delivered and is identified in element IV.A.1 of this NTSP.

2. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System

a. Installation and Delivery Schedules. Delivery of the FLOLS has been completed.

b. Ready For Operational Use Schedule. FLOLS is RFOU upon receipt.

c. Time Required to Install at Operational Sites. NA

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule. No TDs are required to support FLOLS training. All TTE required to support FLOLS training has been delivered and is identified in element IV.A.1 of this NTSP.

3. Shore-Based Portable Improved Fresnel Lens Optical Landing System

a. Installation and Delivery Schedule. Scheduled installation completion dates, as provided by NAWCADLKE, for the IFLOLS are as follows:

LOCATION	2001	2002	2003	2004

LOCATION	2001	2002	2003	2004
NALF Whitehouse, Florida	Completed Aug 1999			
NAF El Centro, California	Completed Mar 2001		Oct 30	
NALF Fentress, Virginia	Completed May 2001		Sep 30	
NAF Atsugi, Japan	Oct 31			
NAS Lemoore, California	Nov 30			
NAS Whidbey Island, Washington	Dec 28			
NAS Kingsville, Texas		Jun 31		
NAF Meridan, Mississippi		Aug 30		
NALF San Clemente Island, California		Oct 31		
NAS Oceana, Virginia		Nov 29		May 28
NAF Atsugi (Iwo Jima), Japan		Dec 31		
NALF Orange Grove, Texas			Jan 31	
NAS Key West, Florida			Feb 28	
NS Ventura County, California			May 30	
NAS Norfolk, Virginia			Jun 30	
NALF Joe Williams Field, Meridian, Mississippi			Aug 28	
NALF Coupeville, Washington				Jun 30
NAS Jacksonville, Florida				Jul 30

b. Ready For Operational Use Schedule. The IFLOLS is RFOU upon completion of installation. Installation includes operational inspection and certification.

c. Time Required to Install at Operational Sites. The IFLOLS requires 31 days to install.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule. One IFLOLS will be required as TTE to support the LSO School. The IFLOLS will be required onboard no later than November 2001 to support the April 2002 RFT date.

4. Long Range Line-Up System

a. Installation and Delivery Schedules. LRLS will be installed at four sites yet to be determined. Installation is scheduled to begin in September 2001.

b. Ready For Operational Use Schedule. The LRLS is RFOU upon completion of installation and certification.

c. Time Required to Install at Operational Sites. The LRLS requires approximately two weeks to install.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.
NA

5. Manually Operated Visual Landing Aid System

a. Installation and Delivery Schedules. Delivery of the MOVLAS was completed in the 1970s.

b. Ready For Operational Use Schedule. The MOVLAS is RFOU upon receipt.

c. Time Required to Install at Operational Sites. NA

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule. No TDs are required to support MOVLAS training. All TTE required to support MOVLAS training has been delivered and is identified in element IV.A.1 of this NTSP.

6. Precision Approach Path Indicator

a. Installation and Delivery Schedules. All PAPI Systems have been delivered and installed.

b. Ready For Operational Use Schedule. The PAPI is RFOU upon completion of installation, testing, and certification.

c. Time Required to Install at Operational Sites. The PAPI required five weeks to install at each site. This included construction of the reinforced concrete pad.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.
NA

7. Glide Slope Indicator

a. Installation and Delivery Schedules. The delivery and installation of the GSI was completed in the 1980s.

b. Ready For Operational Use Schedule. NA

c. Time Required to Install at Operational Sites. The GSI requires two days.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.
NA

L. GOVERNMENT-FURNISHED EQUIPMENT AND CONTRACTOR-FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Maintenance Plan for the Precision Approach Path Indicator	NAWCADLKE-M85094002	NAWCADLKE	Approved May 96
User's Logistics Support Summary for the Precision Approach Path Indicator	NAWCADLKE-U85094002	NAWCADLKE	Approved Sep 97
Maintenance Plan for the Manually Operated Visual Landing Aid System	NAWCADLKE-M84096002	NAWCADLKE	Approved Apr 96
Maintenance Plan for the E-28 Emergency Runway Arresting Gear	SSIED MP NO. 009-81	NAWCADLKE	Approved May 82

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Human Systems Integration Plan for the Improved Fresnel Lens Optical Landing System	NAWCADLKE-MISC-05-SR-0117	NAWCADLKE	Approved Sep 93
Operational Logistics Support Plan for the Fresnel Lens Optical Landing System	NAEC 51-8044	NAWCADLKE	Approved Dec 87
User's Logistics Support Summary for the Improved Fresnel Lens Optical Landing System	NAWCADLKE-U82093001	NAWCADLKE	Draft Mar 01
User's Logistics Support Summary for the Long Range Line-up System	NAWCADLKE-ULSS-92057A	NAWCADLKE	Draft Jan 01
Maintenance Plan for the Glide Slope Indicator	SSIED MP NO. 006-86	NAWCADLKE	Approved Aug 86
Maintenance Plan for the Improved Fresnel Lens Optical Landing System	NAWCADLKE-M82093001	NAWCADLKE	Approved May 97

PART II - BILLET AND PERSONNEL REQUIREMENTS

II.A. BILLET The following elements are not affected by the Shore-Based Aircraft Launch and Recovery Equipment and, therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule

II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities

II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities

REQUIREMENTS

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: Total Force Manpower Management System

DATE:09/01/2001

ACTIVITY, UIC		PFYs	CFY02	FY03	FY04	FY05	FY06
OPERATIONAL ACTIVITIES - NAVY							
CVW 1	09732	1	0	0	0	0	0
CVW 17	09745	1	0	0	0	0	0
CVW 3	09731	1	0	0	0	0	0
CVW 7	09736	1	0	0	0	0	0
CVW 8	09748	1	0	0	0	0	0
CVWR 20	09393	1	0	0	0	0	0
VAW 120	09527	1	0	0	0	0	0
VAW 121	09467	1	0	0	0	0	0
VAW 123	09477	1	0	0	0	0	0
VAW 124	09526	1	0	0	0	0	0
VAW 125	09922	1	0	0	0	0	0
VAW 126	09963	1	0	0	0	0	0
VAW 78	09102	1	0	0	0	0	0
VF 101	09067	1	0	0	0	0	0
VFA 105	65183	1	0	0	0	0	0
VFA 106	09679	1	0	0	0	0	0
VFA 131	63934	1	0	0	0	0	0
VFA 136	55141	1	0	0	0	0	0
VFA 15	09015	1	0	0	0	0	0
VFA 203	09030	1	0	0	0	0	0
VFA 204	09032	1	0	0	0	0	0
VFA 34	09070	1	0	0	0	0	0
VFA 37	09478	1	0	0	0	0	0
VFA 81	09221	1	0	0	0	0	0
VFA 82	09122	1	0	0	0	0	0
VFA 83	09223	1	0	0	0	0	0
VFA 86	09943	1	0	0	0	0	0
VFA 87	63922	1	0	0	0	0	0
VS 22	09287	1	0	0	0	0	0
VS 24	09629	1	0	0	0	0	0
VS 30	09226	1	0	0	0	0	0
VS 31	09573	1	0	0	0	0	0
VS 32	09353	1	0	0	0	0	0
CVW 11	09734	1	0	0	0	0	0
CVW 2	09742	1	0	0	0	0	0
CVW 5	09733	1	0	0	0	0	0
CVW 9	09738	1	0	0	0	0	0
VAQ 112	09458	1	0	0	0	0	0
VAQ 129	09995	1	0	0	0	0	0
VAW 112	09458	1	0	0	0	0	0
VAW 113	09459	1	0	0	0	0	0
VAW 113	09459	1	0	0	0	0	0

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: Total Force Manpower Management System

DATE:09/01/2001

ACTIVITY, UIC		PFYs	CFY02	FY03	FY04	FY05	FY06
VAW 115	09463	1	0	0	0	0	0
VAW 115	09463	1	0	0	0	0	0
VAW 116	09465	1	0	0	0	0	0
VAW 116	09465	1	0	0	0	0	0
VAW 117	09985	1	0	0	0	0	0
VAW 117	09985	1	0	0	0	0	0
VFA 113	09092	1	0	0	0	0	0
VFA 115	09604	1	0	0	0	0	0
VFA 122	09355	1	0	0	0	0	0
VFA 125	09485	1	0	0	0	0	0
VFA 137	55142	1	0	0	0	0	0
VFA 146	09063	1	0	0	0	0	0
VFA 147	63925	1	0	0	0	0	0
VFA 151	09558	1	0	0	0	0	0
VFA 192	09076	1	0	0	0	0	0
VFA 195	09706	1	0	0	0	0	0
VFA 201	09309	1	0	0	0	0	0
VFA 22	09561	1	0	0	0	0	0
VFA 25	09637	1	0	0	0	0	0
VFA 27	65185	1	0	0	0	0	0
VFA 94	09295	1	0	0	0	0	0
VFA 97	63923	1	0	0	0	0	0
VS 21	09739	1	0	0	0	0	0
VS 29	09204	1	0	0	0	0	0
VS 33	09263	1	0	0	0	0	0
VS 35	09345	1	0	0	0	0	0
VS 38	09192	1	0	0	0	0	0
VS 41	09298	1	0	0	0	0	0
TOTAL:		70	0	0	0	0	0
FLEET SUPPORT ACTIVITIES - NAVY							
Landing Signal Officer School	68788	1	0	0	0	0	0
Strike Test Squadron, Patuxent River, Maryland	39783	1	0	0	0	0	0
VT 4	0395A	1	0	0	0	0	0
VT 7	0398A	1	0	0	0	0	0
VT 9	0399A	1	0	0	0	0	0
COMNAVAIRPAC San Diego, California	57025	1	0	0	0	0	0
VT 21	0400A	1	0	0	0	0	0
VT 22	0401A	1	0	0	0	0	0
TOTAL:		8	0	0	0	0	0

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
OPERATIONAL ACTIVITIES - NAVY					
CVW 1, 09732					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 17, 09745					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 3, 09731					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 7, 09736					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 8, 09748					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVWR 20, 09393					
SELRES	2	0	1312		
ACTIVITY TOTAL:	2	0			
VAW 120, 09527					
ACDU	4	0	1312		
ACTIVITY TOTAL:	4	0			
VAW 121, 09467					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 123, 09477					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

VAW 124, 09526

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 125, 09922					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 126, 09963					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 78, 09102					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VF 101, 09067					
ACDU	7	0	1312		
	0	25			
ACTIVITY TOTAL:	7	25			
VFA 105, 65183					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 106, 09679					
ACDU	6	0	1312		
ACTIVITY TOTAL:	6	0			
VFA 131, 63934					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 136, 55141					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 15, 09015					
ACDU	2	0	1311		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
ACTIVITY TOTAL:	2	0			
VFA 203, 09030					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 204, 09032					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 34, 09070					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 37, 09478					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 81, 09221					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 82, 09122					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 83, 09223					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 86, 09943					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 87, 63922					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

VS 22, 09287

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 24, 09629					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 30, 09226					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 31, 09573					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 32, 09353					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
CVW 11, 09734					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 2, 09742					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 5, 09733					
ACDU	3	0	1312		
ACTIVITY TOTAL:	3	0			
CVW 9, 09738					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
VAQ 112, 09458					
ACDU	1	0	1311		
	0	25			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
ACTIVITY TOTAL:	1	25			
VAQ 129, 09995					
ACDU	4	0	1312		
ACTIVITY TOTAL:	4	0			
VAW 112, 09458					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VAW 113, 09459					
ACDU	1	0	1311		
	1	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 115, 09463					
ACDU	1	0	1311		
	1	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 116, 09465					
ACDU	1	0	1311		
	1	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 117, 09985					
ACDU	1	0	1311		
	1	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 113, 09092					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 115, 09604					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 122, 09355					

ACDU

6 0

1312

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
ACTIVITY TOTAL:	6	0			
VFA 125, 09485					
ACDU	6	0	1312		
ACTIVITY TOTAL:	6	0			
VFA 137, 55142					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 146, 09063					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 147, 63925					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 151, 09558					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 192, 09076					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 195, 09706					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 201, 09309					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 22, 09561					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VFA 25, 09637					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 27, 65185					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 94, 09295					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 97, 63923					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 21, 09739					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 29, 09204					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 33, 09263					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 35, 09345					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 38, 09192					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 41, 09298					
ACDU	6	0	1312		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
ACTIVITY TOTAL:	6	0			
FLEET SUPPORT ACTIVITIES - NAVY					
Landing Signal Officer School, 68788					
ACDU	3	0	1312		
ACTIVITY TOTAL:	3	0			
Strike Test Squadron, Patuxent River, Maryland, 39783					
ACDU	1	0	1312		
ACTIVITY TOTAL:	1	0			
VT 4, 0395A					
ACDU	4	0	1312		
SELRES	1	0	1312		
ACTIVITY TOTAL:	5	0			
VT 7, 0398A					
ACDU	1	0	1312		
ACTIVITY TOTAL:	1	0			
VT 9, 09177					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
COMNAVAIRPAC San Diego, California, 57025					
ACDU	1	0	1312		
ACTIVITY TOTAL:	1	0			
VT 21, 0400A					
ACDU	4	0	1312		
SELRES	1	0	1312		
ACTIVITY TOTAL:	5	0			
VT 22, 0401A					
ACDU	4	0	1312		
ACTIVITY TOTAL:	4	0			

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs		CFY02		FY03		FY04		FY05		FY06	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
NAVY OPERATIONAL ACTIVITIES - ACDU													
1311		88		0		0		0		0		0	
1312		58		0		0		0		0		0	
			50		0		0		0		0		0
NAVY OPERATIONAL ACTIVITIES - SELRES													
1311		8		0		0		0		0		0	
1312		2		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - ACDU													
1312		20		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - SELRES													
1312		2		0		0		0		0		0	
SUMMARY TOTALS:													
NAVY OPERATIONAL ACTIVITIES - ACDU													
		146	50	0	0	0	0	0	0	0	0	0	0
NAVY OPERATIONAL ACTIVITIES - SELRES													
		10		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - ACDU													
		20		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - SELRES													
		2		0		0		0		0		0	
GRAND TOTALS:													
NAVY - ACDU													
		166	50	0	0	0	0	0	0	0	0	0	0
NAVY - SELRES													
		12		0		0		0		0		0	

II.A.3. TRAINING ACTIVITIES INSTRUCTOR AND SUPPORT BILLET REQUIREMENTS

DESIG RATING	PNEC/SNEC PMOS/SMOS	PFYs		CFY02		FY03		FY04		FY05		FY06	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL

TRAINING ACTIVITY, LOCATION, UIC: Landing Signal Officer School, NAS Oceana, Virginia, 68788

INSTRUCTOR BILLETS

ACDU 1312		3	0	3	0	3	0	3	0	3	0	3	0
TOTAL:		3	0	3	0	3	0	3	0	3	0	3	0

TRAINING ACTIVITY, LOCATION, UIC: NAMTRAU Norfolk, Norfolk, Virginia, 44680

INSTRUCTOR BILLETS

ACDU ABE1		0	1	0	1	0	1	0	1	0	1	0	1
TOTAL:		0	1	0	1	0	1	0	1	0	1	0	1

TRAINING ACTIVITY, LOCATION, UIC: NAMTRAU North Island, San Deigo, California, 39476

INSTRUCTOR BILLETS

ACDU ABE1		0	1	0	1	0	1	0	1	0	1	0	1
TOTAL:		0	1	0	1	0	1	0	1	0	1	0	1

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs		CFY02		FY03		FY04		FY05		FY06	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
Landing Signal Officer School, NAS Oceana, Virginia, 68788	NAVY	0.0		0.0		0.0		0.0		0.0		0.0	
NAMTRAU Norfolk, Norfolk, Virginia, 44680	NAVY		0.1		0.1		0.1		0.1		0.1		0.1
NAMTRAU North Island, San Deigo, California, 39476	NAVY		0.1		0.1		0.1		0.1		0.1		0.1
SUMMARY TOTALS:													
	NAVY	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2
GRAND TOTALS:													
		0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS	BILLET BASE	CFY02		FY03		FY04		FY05		FY06	
				+/-	CUM	+/-	CUM	+/-	CUM	+/-	CUM	+/-	CUM

a. OFFICER - USN

Operational Billets ACDU and TAR

1311			88	0	88	0	88	0	88	0	88	0	88
1312			58	0	58	0	58	0	58	0	58	0	58

Fleet Support Billets ACDU and TAR

1312			20	0	20	0	20	0	20	0	20	0	20
------	--	--	----	---	----	---	----	---	----	---	----	---	----

Staff Billets ACDU and TAR

1312			3	0	3	0	3	0	3	0	3	0	3
------	--	--	---	---	---	---	---	---	---	---	---	---	---

SELRES Billets

1311			8	0	8	0	8	0	8	0	8	0	8
1312			4	0	4	0	4	0	4	0	4	0	4

TOTAL USN OFFICER BILLETS:

Operational			146	0	146	0	146	0	146	0	146	0	146
-------------	--	--	-----	---	-----	---	-----	---	-----	---	-----	---	-----

Fleet Support			20	0	20	0	20	0	20	0	20	0	20
---------------	--	--	----	---	----	---	----	---	----	---	----	---	----

Staff			3	0	3	0	3	0	3	0	3	0	3
-------	--	--	---	---	---	---	---	---	---	---	---	---	---

SELRES			12	0	12	0	12	0	12	0	12	0	12
--------	--	--	----	---	----	---	----	---	----	---	----	---	----

b. ENLISTED - USN

Operational Billets ACDU and TAR

			50	0	50	0	50	0	50	0	50	0	50
--	--	--	----	---	----	---	----	---	----	---	----	---	----

Staff Billets ACDU and TAR

ABE1			2	0	2	0	2	0	2	0	2	0	2
------	--	--	---	---	---	---	---	---	---	---	---	---	---

Chargeable Student Billets ACDU and TAR

			0	0	0	0	0	0	0	0	0	0	0
--	--	--	---	---	---	---	---	---	---	---	---	---	---

TOTAL USN ENLISTED BILLETS:

Operational			50	0	50	0	50	0	50	0	50	0	50
-------------	--	--	----	---	----	---	----	---	----	---	----	---	----

Staff			2	0	2	0	2	0	2	0	2	0	2
-------	--	--	---	---	---	---	---	---	---	---	---	---	---

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS	BILLET BASE	CFY02		FY03		FY04		FY05		FY06	
				+/-	CUM	+/-	CUM	+/-	CUM	+/-	CUM	+/-	CUM

Chargeable Student			0	0	0	0	0	0	0	0	0	0	0
--------------------	--	--	---	---	---	---	---	---	---	---	---	---	---

c. OFFICER - USMC NA.

d. ENLISTED - USMC NA.

II.B. PERSONNEL REQUIREMENTS

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

COURSE LENGTH: 0.4 Weeks

TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02		FY03		FY04		FY05		FY06	
			OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
NAMTRAU Norfolk, Norfolk, Virginia	NAVY	ACDU		17		17		17		17		17
NAMTRAU North Island, San Deigo, California	NAVY	ACDU		17		17		17		17		17
		TOTAL:		34		34		34		34		34

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training

COURSE LENGTH: 1.6 Weeks

TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02		FY03		FY04		FY05		FY06	
			OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
Landing Signal Officer School, NAS Oceana, Virginia	NAVY	ACDU		29		29		29		29		29
		SELRES		1		1		1		1		1
		TOTAL:		30		30		30		30		30

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training

COURSE LENGTH: 0.6 Weeks

TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02		FY03		FY04		FY05		FY06	
			OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
Landing Signal Officer School, NAS Oceana, Virginia	NAVY	ACDU		14		14		14		14		14
		SELRES		0		0		0		0		0
		TOTAL:		14		14		14		14		14

CIN, COURSE TITLE: D-2G-0003, Fleet Replacement Squadron Training Command

COURSE LENGTH: 0.6 Weeks

TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02		FY03		FY04		FY05		FY06	
			OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
Landing Signal Officer School, NAS Oceana, Virginia	NAVY	ACDU		11		11		11		11		11
		SELRES		1		0		1		0		1
		TOTAL:		12		11		12		11		12

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the Shore-Based Aircraft Launch and recovery Equipment and, therefore, are not included in Part III of this NTSP:

III.A.1. Initial Training Requirements

III.A.2. Follow-on Training

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

III.A.2. FOLLOW-ON TRAINING

III.A.2.a. EXISTING COURSES

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids
TRAINING ACTIVITY: NAMTRAU Norfolk
LOCATION, UIC: Norfolk, Virginia, 44680

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	17		17		17		17		17	ATIR
	17		17		17		17		17	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

TRAINING ACTIVITY: NAMTRAU North Island
LOCATION, UIC: San Deigo, California, 39476

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	17		17		17		17		17	ATIR
	17		17		17		17		17	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, Virginia, 68788

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	29		29		29		29		29	ATIR
	29		29		29		29		29	Output
	0.8		0.8		0.8		0.8		0.8	AOB
	0.0		0.0		0.0		0.0		0.0	Chargeable

SOURCE: NAVY **STUDENT CATEGORY:** SELRES

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	1		1		1		1		1	ATIR
	1		1		1		1		1	Output
	0.0		0.0		0.0		0.0		0.0	AOB
	0.0		0.0		0.0		0.0		0.0	Chargeable

III.A.2.a. EXISTING COURSES

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, Virginia, 68788

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
14		14		14		14		14		ATIR
14		14		14		14		14		Output
0.1		0.1		0.1		0.1		0.1		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

SOURCE: NAVY **STUDENT CATEGORY:** SELRES

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
0		0		0		0		0		ATIR
0		0		0		0		0		Output
0.0		0.0		0.0		0.0		0.0		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

CIN, COURSE TITLE: D-2G-0003, Fleet Replacement Squadron Training Command
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, Virginia, 68788

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
11		11		11		11		11		ATIR
11		11		11		11		11		Output
0.1		0.1		0.1		0.1		0.1		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

SOURCE: NAVY **STUDENT CATEGORY:** SELRES

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
1		0		1		0		1		ATIR
1		0		1		0		1		Output
0.0		0.0		0.0		0.0		0.0		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the Shore-Based Aircraft Launch and Recovery Equipment and, therefore, are not included in Part IV of this NTSP:

IV.A. Training Hardware

IV.A.2. Training Devices

IV.B Courseware Requirements

IV.B.1. Training Services

IV.C. Facility Requirements

IV.C.1. Facility Requirements Summary (Space/Support) by Activity

IV.C.2. Facility Requirements Detailed by Activity and Course

IV.C.3. Facility Project Summary by Program

IV.A. TRAINING HARDWARE

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU Norfolk

LOCATION, UIC: NAS Norfolk, 44680

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
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TTE

003	Mk 8 Portable Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
006	Manually operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
008	E-28 Arresting Gear	1	Jan 00	GFE	Onboard

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU North Island

LOCATION, UIC: NAS North Island, 39476

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
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TTE

003	Mk 8 Portable Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
006	Manually operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
008	E-28 Arresting Gear	1	Jan 00	GFE	Onboard

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
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TTE

001	LSO Heads-Up Display (HUD) Console	1	Jan 00	GFE	Onboard
002	CV Configured LSO Workstation	1	Jan 00	GFE	Onboard
003	Mk 8 Portable Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
004	Improved Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
005	Long Range Line-up System	1	Mar 01	GFE	Onboard
006	Manually operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
007	Precision Approach Path Indicator	1	Jan 00	GFE	Onboard

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
001	LSO HUD Console	1	Jan 00	GFE	Onboard
002	CV Configured LSO Workstation	1	Jan 00	GFE	Onboard
003	Mk 8 Portable Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
004	Improved Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
005	Long Range Line-up System	1	Mar 01	GFE	Onboard
006	Manually operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
007	Precision Approach Path Indicator	1	Jan 00	GFE	Onboard

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
001	LSO HUD Console	1	Jan 00	GFE	Onboard
002	CV Configured LSO Workstation	1	Jan 00	GFE	Onboard
003	Mk 8 Portable Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
004	Improved Fresnel Lens Optical Landing System	1	May 03	GFE	Pending
005	Long Range Line-up System	1	Mar 01	GFE	Onboard
006	Manually operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
007	Precision Approach Path Indicator	1	Jan 00	GFE	Onboard

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU Norfolk

LOCATION, UIC: NAS Norfolk, 44680

TYPES OF MATERIAL OR AID	QTY	DATE	STATUS
	REQD	REQD	
Curriculum Outline	10	Sep 97	Onboard
Instructor Guide	1	Sep 97	Onboard
Lesson Guide	10	Sep 97	Onboard
Overhead Projector	1	Sep 97	Onboard
Videotape, E-28 Shore Based Arresting Gear Operation	1	Sep 97	Onboard

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU North Island

LOCATION, UIC: NAS North Island, 39476

TYPES OF MATERIAL OR AID	QTY	DATE	STATUS
	REQD	REQD	
Curriculum Outline	10	Sep 97	Onboard
Instructor Guide	1	Sep 97	Onboard
Lesson Guide	10	Sep 97	Onboard
Overhead Projector	1	Sep 97	Onboard
Videotape, E-28 Shore Based Arresting Gear Operation	1	Sep 97	Onboard

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

TYPES OF MATERIAL OR AID	QTY	DATE	STATUS
	REQD	REQD	
Curriculum Outline	10	Jan 00	Onboard
Instructor Guide	2	Jan 00	Onboard
Lesson Guide	5	Jan 00	Onboard
Overhead Projector	1	Jan 00	Onboard
Student Evaluations	5	Jan 00	Onboard
Transparencies	2 sets	Jan 00	Onboard

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

TYPES OF MATERIAL OR AID	QTY	DATE	STATUS
	REQD	REQD	
Curriculum Outline	10	Jan 00	Onboard
Instructor Guide	2	Jan 00	Onboard
Lesson Guide	5	Jan 00	Onboard
Overhead Projector	1	Jan 00	Onboard
Student Evaluations	5	Jan 00	Onboard
Transparencies	2 sets	Jan 00	Onboard

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Curriculum Outline	10	Jan 00	Onboard
Instructor Guide	2	Jan 00	Onboard
Lesson Guide	5	Jan 00	Onboard
Overhead Projector	1	Jan 00	Onboard
Student Evaluations	5	Jan 00	Onboard
Transparencies	2 sets	Jan 00	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids
TRAINING ACTIVITY: NAMTRAU Norfolk
LOCATION, UIC : NAS Norfolk, 44680

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation, and Maintenance Instruction with IPB	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-14 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod O	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-15 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod 1	Hard copy	10	Sep 97	Onboard
NAVAIR 51-5-31 E-28 Emergency Runway Arresting Gear Parts A, B, and C	Hard copy	10	Sep 97	Onboard

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids
TRAINING ACTIVITY: NAMTRAU North Island
LOCATION, UIC : NAS North Island, 39476

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation and Maintenance Instruction with IPB	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-14 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod O	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-15 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod 1	Hard copy	10	Sep 97	Onboard
NAVAIR 51-5-31 E-28 Emergency Runway Arresting Gear Parts A, B, and C	Hard copy	10	Sep 97	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC : NAS Oceana, 68788

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 00-801-104 LSO NATOPS	Hard copy	5	Jan 00	Onboard
NAVAIR 00-801-105 Aircraft Carrier NATOPS Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation and Maintenance Instruction with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-10 Fresnel Lens Optical Landing System MK-6 MOD 3 Installation, Service, Operation and Maintenance Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-21 Improved Fresnel Lens Optical Landing System Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40BA-11 Illustrated Parts Breakdown for the MK-6 MOD 3 Fresnel Lens Optical Landing System	Hard copy	5	Jan 00	Onboard
NAVAIR 51-50ABA-2 Visual Landing Aids on Aircraft Carriers	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9 MK1 MOD 0 LSO HUD Maintenance and Overhaul Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9.1 MK-1 MOD 0 Console System IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-ABA-6 Long Range Line-UP Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
OPNAVINST 3710.7P General NATOPS	Hard copy	5	Jan 00	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC : NAS Oceana, 68788

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 00-801-104 LSO NATOPS	Hard copy	5	Jan 00	Onboard
NAVAIR 00-801-105 Aircraft Carrier NATOPS Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation, and Maintenance Instruction with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-10 Fresnel Lens Optical Landing System MK-6 MOD 3 Installation, Service, Operation, and Maintenance Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-21 Improved Fresnel Lens Optical Landing System Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40BA-11 Illustrated Parts Breakdown for the MK-6 MOD 3 Fresnel Lens Optical Landing System	Hard copy	5	Jan 00	Onboard
NAVAIR 51-50ABA-2 Visual Landing Aids on Aircraft Carriers	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9 MK1 MOD 0 LSO HUD Maintenance and Overhaul Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9.1 MK-1 MOD 0 Console System IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-ABA-6 Long Range Line-Up Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
OPNAVINST 3710.7P General NATOPS	Hard copy	5	Jan 00	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC : NAS Oceana, 68788

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 00-801-104 LSO NATOPS	Hard copy	5	Jan 00	Onboard
NAVAIR 00-801-105 Aircraft Carrier NATOPS Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation, and Maintenance Instruction with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-10 Fresnel Lens Optical Landing System MK-6 MOD 3 Installation, Service, Operation, and Maintenance Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-21 Improved Fresnel Lens Optical Landing System Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40BA-11 Illustrated Parts Breakdown for the MK-6 MOD 3 Fresnel Lens Optical Landing System	Hard copy	5	Jan 00	Onboard
NAVAIR 51-50ABA-2 Visual Landing Aids on Aircraft Carriers	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9 MK1 MOD 0 LSO HUD Maintenance and Overhaul Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9.1 MK-1 MOD 0 Console System IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-ABA-6 Long Range Line-UP Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
OPNAVINST 3710.7P General NATOPS	Hard copy	5	Jan 00	Onboard

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
PDA	Achieved NSD for MOVLAS	Sep 69	Completed
PDA	Conducted OPEVAL and TECHEVAL of E-28 Emergency Runway Arresting Gear	1980s	Completed
PDA	Conducted OPEVAL and TECHEVAL of GSI	1980s	Completed
PDA	Conducted OPEVAL and TECHEVAL of Mark 8 FLOLS	1980s	Completed
PDA	Achieved NSD for Mark 8 FLOLS	May 88	Completed
PDA	Conducted TECHEVAL of IFLOLS	Sep 96	Completed
PDA	Achieved IOC for Shore-Based IFLOLS	Aug 99	Completed
PDA	Conducted ALRE Integrated Logistics Support Management Team Meeting	Apr 01	Completed
TSA	Developed Shore-Based ALRE NTSP	Jul 01	Completed
PDA	Achieve Initial Operating Capability for LRLS	Sep 01	Completed
TSA	Distributed Updated Draft Shore-Based ALRE NTSP	Oct 01	Completed
TSA	Deliver IFLOLS TTE to LSO School	Nov 01	Pending
ICP	Achieve Organic Material Support for LRLS	Mar 02	Pending
TSA	Begin Teaching IFLOLS at LSO School	Apr 02	Pending
ICP	Achieve Organic Material Support for IFLOLS	Jun 02	Pending
PDA	Achieve NSD for IFLOLS	Jun 03	Pending
PDA	Complete Installation of Shore-Based IFLOLS	Jul 04	Pending

PART VI - DECISION ITEMS / ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS
No actions pending			

PART VII - POINTS OF CONTACT

NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL	TELEPHONE NUMBERS
CAPT Owen Fletcher Deputy Aviation Maintenance Programs CNO, N781B fletcher.owen@hq.navy.mil	COMM: (703) 604-7747 DSN: 664-7747 FAX: (703) 604-6972
CDR Wanda Janus Resource Sponsor / Program Sponsor CNO, N785D1 janus.wanda@hq.navy.mil	COMM: (703) 6026758 DSN: 227-7658 FAX: (703) 602-8523
CAPT Terry Merritt Head, Aviation Technical Training Branch CNO, N789H merritt.terry@hq.navy.mil	COMM: (703) 604-7730 DSN: 664-7730 FAX: (703) 604-6939
AZCS Gary Greenlee NTSP Manager CNO, N789H1A greenlee.gary@hq.navy.mil	COMM: (703) 604-7743 DSN: 664-7743 FAX: (703) 604-6939
CDR Kevin Neary Aviation Manpower CNO, N122C1 n122c1@bupers.navy.mil	COMM: (703) 695-3247 DSN: 225 3247 FAX: (703) 695-5308
Mr. Robert Zweibel Training Technology Policy CNO, N795K zweibel.robert@hq.navy.mil	COMM: (703) 602-5151 DSN: 332-5151 FAX: (703) 602-5175
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PART VII - POINTS OF CONTACT

NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL	TELEPHONE NUMBERS
<p>Mr. Armando Machado Arresting Gear Training Manager NAWCADLKE, 3.4.5 machadoaj@navair.navy.mil</p>	<p>COMM: (732) 323-7191 DSN: 624-7191 FAX: (732) 323-4064</p>
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<p>Mr. Terry McGovern In-Service Engineer for FLOLS NAWCADLKE, 4.8.10.3 mcgovernt@navair.navy.mil</p>	<p>COMM: (732) 323-1828 DSN: 624-1828 FAX: (732) 323-7233</p>
<p>Mr. Dan Bischoff PAPI Engineer NAWCADLKE, 4.8.10.3 bischoffd@navair.navy.mil</p>	<p>COMM: (732) 323-1827 DSN: 624-1827 FAX: (732) 323-7233</p>
<p>Mrs. Pollyanna Randol Aviation NTSP Point of Contact CINCLANTFLT, N71 randolpa@clf.navy.mil</p>	<p>COMM: (757) 836-0103 DSN: 863-0103 FAX: (757) 863-6737</p>
<p>Mr. Bob Long Deputy Director for Training CINCPACFLT, N70 longrh@cpf.navy.mil</p>	<p>COMM: (808) 471-8513 DSN: 315-471-8513 FAX: (808) 471-8596</p>
<p>CAPT Patricia Huiatt Deputy Assistant, Chief of Naval Personnel for Distribution NAVPERSCOM, PERS-4B p4b@persnet.navy.mil</p>	<p>COMM: (901) 874-3529 DSN: 882-3529 FAX: (901) 874-2606</p>
<p>CDR Timothy Ferree Branch Head, Aviation Enlisted Assignments NAVPERSCOM, PERS-404 p404@persnet.navy.mil</p>	<p>COMM: (901) 874-3691 DSN: 882-3691 FAX: (901) 874-2642</p>
<p>LCDR Raymond Lawry Aviation Department Head NAVMAC, 30 raymond.lawry@navmac.navy.mil</p>	<p>COMM: (901) 874-6218 DSN: 882-6218 FAX: (901) 874-6471</p>
<p>AZCS Randall Lees NTSP Coordinator NAVMAC, 32 randall.lees@navmac.navy.mil</p>	<p>COMM: (901) 874-6434 DSN: 882-6434 FAX: (901) 874-6471</p>

PART VII - POINTS OF CONTACT

NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL	TELEPHONE NUMBERS
<p>AKC Tina Jacobs NTSP Coordinator (Assistant) NAVMAC, 32 parthina.jacobs@navmac.navy.mil</p>	<p>COMM: (901) 874-6483 DSN: 882-6483 FAX: (901) 874-6471</p>
<p>Mr. Steve Berk CNET NTSP Distribution CNET, ETS-23 stephen-g.berk@cnet.navy.mil</p>	<p>COMM: (850) 452-8919 DSN: 922-8919 FAX: (850) 452-4853</p>
<p>CDR Erich Blunt Aviation Technical Training CNET, ETE-32 cdr-erich.blunt@cnet.navy.mil</p>	<p>COMM: (850) 452-4915 DSN: 922-4915 FAX: (850) 452-4901</p>
<p>GMC James Allen PQS Development Officer NETPDTS, Group 34 gmc-james.allen@cnet.navy.mil</p>	<p>COMM: (850) 452-1001 ext. 2217 DSN: 922-1001 ext. 2217 FAX: (850) 452-1764</p>
<p>ABFCS John Coontz Curricula Manager NAMTRAU Norfolk, 3040 abfcs-john.coontz@cnet.navy.mil</p>	<p>COMM: (757) 444-3527 DSN: 564-3527 FAX: (757) 565-3527</p>
<p>Mr. Bill Loucks NTSP Author Management Analysis Group Associates loucksb@us.hsnet.net</p>	<p>COMM: (301) 737-3500 DSN: FAX: (301) 737-6442</p>
<p>Mr. Phil Szczyglowski Competency Manager NAVAIRSYSCOM, AIR 3.4.1 szczyglowspr@navair.navy.mil</p>	<p>COMM: (301) 757-8280 DSN: 757-8280 FAX: (301) 342-7737</p>
<p>Mr. Bob Kresge NTSP Manager NAVAIRSYSCOM, AIR 3.4.1 kresgerj@navair.navy.mil</p>	<p>COMM: (301) 757-1844 DSN: 757-1844 FAX: (301) 342-7737</p>
<p>ADCS Steve Reed NTSP Coordinator NAVAIRSYSCOM, AIR 3.4.1 reedps@navair.navy.mil</p>	<p>COMM: (301) 757-3107 DSN: 757-3107 FAX: (301) 342-7737</p>
<p>AMC Mark Gray Manpower, Personnel and Training Analyst NAVAIRSYSCOM, AIR 3.4.1 graymd@navair.navy.mil</p>	<p>COMM: (301) 757-3103 DSN: 757-3103 FAX: (301) 342-7737</p>