



NAVY TRAINING SYSTEM PLAN

FOR THE

AIRCRAFT LAUNCH AND RECOVERY

EQUIPMENT WIND SYSTEMS

N78-NTSP-A-50-0301/D

APRIL 2003

AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT WIND SYSTEMS

EXECUTIVE SUMMARY

This Navy Training System Plan (NTSP) has been developed to identify the life-cycle manpower, personnel, and training requirements associated with Aircraft Launch and Recovery Equipment (ALRE) Wind Systems.

Due to functional similarity, all ALRE Wind Systems are addressed together in this NTSP. The complement of ALRE Wind Systems includes the Wind Measuring and Indicating System (WMIS), Moriah Wind System, (MWS), and Digital Wind System (DWS). All Navy ships are equipped with an ALRE Wind System, which provides continuous visual indication of wind direction and wind speed relative to the ship's bow. The WMIS and DWS have achieved Initial Operating Capability (IOC) and are post Milestone C Decision Point, Operations and Support Phase of the Defense Acquisition System. IOC for the MWS is scheduled for Fiscal Year (FY) 05. The MWS will be introduced as a Non-Developmental Item utilizing a combination of commercial and government off-the-shelf components. The Navy Support Date (NSD) and Material Support Date (MSD) for WMIS have been achieved. The NSD and MSD for the DWS are scheduled for FY03. The NSD and MSD for the MWS are scheduled for FY07.

Personnel involved in all phases of aircraft launch and recovery operate ALRE Wind Systems displays to gain information required to perform their primary duties. There are no billets designated for the sole purpose of operating and maintaining ALRE Wind Systems. Maintenance of ALRE Wind Systems is performed by Interior Communications Electricians (IC) as a part of their overall workload.

Initial training for the WMIS and DWS has been completed. Initial training for MWS is scheduled for FY04. No formal follow-on operator training for ALRE Wind Systems has been established. ALRE Wind Systems operator skills are gained through on-the-job training. Follow-on maintenance training for WMIS is established as part of the non Navy Enlisted Classification (NEC) awarding Propulsion Alarms and Indicating Systems Maintenance course (A-651-0047) at Fleet Training Center (FTC) Norfolk, Virginia and FTC San Diego, California. Current plans are to add MWS and DWS maintenance information to this existing course. Ready for training dates for MWS and DWS have not been established.

An alternative operator and maintainer training concept for ALRE Wind Systems is being investigated that would establish formal operator training and award maintenance training course graduates an NEC for tracking and detailing purposes.

Current Fleet manning is sufficient to operate and maintain the ALRE Wind Systems addressed in this NTSP. No changes to current manpower requirements are anticipated.

**AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT
WIND SYSTEMS**

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**AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT
 WIND SYSTEMS**

LIST OF ACRONYMS

ACDU	Active Duty
ALRE	Aircraft Launch and Recovery Equipment
ASIR	Aeronautical Shipboard Installation Representative
ATIR	Annual Training Input Requirement
BITE	Built-in Test Equipment
CFY	Current Fiscal Year
CIN	Course Identification Number
CNO	Chief of Naval Operations
COMLANTFLT	Commander Atlantic Fleet
COMPACFLT	Commander Pacific Fleet
COTS	Commercial Off The Shelf
DCNO	Deputy Chief of Naval Operations
DLA	Defense Logistics Agency
DT	Developmental Test
DWS	Digital Wind System
FMS	Foreign Military Sales
FODMS	Fibre Optic Data Multiplex System
FTC	Fleet Training Center
FY	Fiscal Year
GFE	Government Furnished Equipment
GOTS	Government Off The Shelf
GPETE	General Purpose Electronic Test Equipment
GPTE	General Purpose Test Equipment
IC	Interior Communications Electrician
IOC	Initial Operating Capability
ISE	In Service Engineering
MFCR	Multifunction Color Repeater
MIU	Meteorological Interface Unit
MRC	Maintenance Requirement Card
MSD	Material Support Date
MWS	Moriah Wind System

**AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT
 WIND SYSTEMS**

LIST OF ACRONYMS

NA	Not Applicable
NAVAIR	Naval Air Systems Command
NAVICP	Navy Inventory Control Point
NAVPERSCOM	Naval Personnel Command
NAVSEASYSYSCOM	Naval Sea Systems Command
NDI	Non-Developmental Item
NEC	Navy Enlisted Classification
NETC	Naval Education and Training Command
NSD	Navy Support Date
NTSP	Navy Training System Plan
OJT	On-the-Job Training
OPEVAL	Operational Evaluation
OPNAV	Office of the Chief of Naval Operations
OPO	OPNAV Principal Officer
PMA	Program Manager, Air
PQS	Personnel Qualifications Standards
SHOL	Ships Helicopter Operating Limit
TBD	To Be Determined
TD	Training Device
TTE	Technical Training Equipment
ULSS	User Logistics Support Summary
WMIS	Wind Measuring and Indicating System

**AIRCRAFT LAUNCH AND RECOVERY EQUIPMENT
WIND SYSTEMS****PREFACE**

This Draft Navy Training System Plan (NTSP) for Aircraft Launch and Recovery Equipment (ALRE) Wind Systems has been prepared in accordance 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 NTSP was developed by consolidating ALRE Wind Systems data from the following sources:

- Wind Measuring and Indicating System (WMIS) data from the draft NTSP for the Aircraft Carrier Visual Landing Aid Systems, A-50-9202B/D.
- WMIS data from the approved NTSP for the Amphibious Assault Ships Visual Landing Aid Systems, A-50-9203A/A.
- WMIS data from the draft NTSP for the Air Capable Ships Visual Landing Aid Systems, A-50-9205B/D.
- Moriah Wind System (MWS) data from the approved NTSP for the Moriah Program, A-50-0001A/A.
- Digital Wind System (DWS) data provided by the Naval Air Systems Command (NAVAIR) Lakehurst, New Jersey.

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. Nomenclature-Title-Acronym. Aircraft Launch and Recovery Equipment (ALRE) Wind Systems

2. Program Elements. 0204161N and 0604512N

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 NAVAIR (PMA251)

Training Agency COMLANTFLT
COMPACFLT
NETC

Manpower and Personnel Mission Sponsor..... CNO (N12)
NAVPERSCOM (PERS-4, PERS-404)

Director Naval Education and Training..... CNO (N00T)

D. SYSTEM DESCRIPTION

1. Operational Uses. All Navy ships are equipped with an ALRE Wind System, which provides continuous visual indication of wind direction and wind speed relative to the ship's bow. The system also provides electrical signals representative of wind direction and speed for computation of flight deck crosswind and head wind conditions, computation of wind vectors for weapon launch systems, and record keeping by meteorological equipment.

2. Foreign Military Sales. At this time there are no Foreign Military Sales (FMS) planned for any ALRE Wind System described in this NTSP.

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST

1. Developmental Test

a. Wind Measuring and Indicating System. NAVAIR and Naval Sea Systems Command (NAVSEASYS COM) activities successfully completed Technical Evaluation of WMIS equipment over the past 40 years.

b. Moriah Wind System. Over the past several years, individual demonstrations and validations were performed on MWS and components to reduce risk to the MWS Program. Developmental Tests (DT) for the MWS are scheduled to begin in September 2003.

c. Digital Wind System. No formal DT was conducted for the DWS; however, shock testing and electromagnetic impulse tests were conducted in a shipboard environment.

2. Operational Test

a. Wind Measuring and Indicating System. Formal Operational Evaluation (OPEVAL) was not required for the WMIS.

b. Moriah Wind System. OPEVAL of the MWS is scheduled to begin in September 2003.

c. Digital Wind System. Formal OPEVAL was not required for the DWS.

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

1. Wind Measuring and Indicating System. WMIS did not replace any system.

2. Moriah Wind System. MWS will replace WMIS onboard all ships except DDG 79 through DDG86 and DDG 87 through DDG-101.

3. Digital Wind System. The DWS will replace WMIS onboard DDG 79 through DDG86. The DWS will be installed onboard DDG 87 through DDG-101 during construction.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description

a. Wind Measuring and Indicating System. There are two primary types of WMIS in use, Type B and Type F. Both systems operate by transmission of electrical synchro signals. The Type B system is based on 60 Hertz (Hz) electrical power, while the newer Type F system utilizes 400 Hz. Type F systems have replaced the B systems on aircraft carriers. Type B systems remain on a significant number of air capable and amphibious ships.

b. Moriah Wind System. The MWS will provide an integrated wind indicating system for the ship and in the battle group. MWS will provide continuous data for display and direct digital or analog input to ship systems. MWS will provide continuous output of the parameters measured by the sensors and processed by the MWS central processor in standard units of measure as required by the end users (systems and people). These units of measure and the algorithms or formulas used to convert base output data will be identified in appropriate system specification documents. MWS will use open system architecture to reduce the integration effort of additional sensors.

(1) Wind Sensors. The MWS has been designed to use new sensor technology. The MWS will have the ability to interface with new solid state, wind sensors such as those based on sonic measurement technology. These types of sensors require little or no preventive maintenance and are capable of transmitting wind speed and direction data in a digital format.

(2) Data Processing. The data processing component of the MWS receives all of the data critical to the launch and recovery tasks. Due to the safety of flight nature of these functions, it is planned that the core MWS processing function will be executed within two self-checking central processing units.

(3) Data Distribution. The MWS data distribution unit will be used to transmit information to various displays throughout the ship.

(4) Data Displays. Multiple display types will be available to support the differing requirements of individual watch-stations. High-end displays will display information such as: true wind speed and direction, relative wind speed and direction, crosswind and/or headwind, ship's speed and course, launch and recovery bulletins, and fox corpen data. Fox corpen data was previously calculated on a slide-rule. It is data used while landing an aircraft. It would recommend a ship's course to steer to get the correct wind speed and direction. In the MWS it will be calculated automatically and displayed. However, it is only a recommendation for perfect conditions.

c. Digital Wind System. The DWS is fitted to selected DDG-51 Class ships. It is designed to provide the ship's combat system with accurate relative and true wind direction and speed via the ship's Fiber Optic Data Multiplex System (FODMS). The DWS uses three Multifunction Color Repeaters (MFCR) to present information to operators and can display launch and recovery envelopes for helicopter operations. The DWS System incorporates several Built-In Test Equipment (BITE) features to identify fault conditions and display system status at the MFCRs. Major components of the DWS are as follows:

(1) Meteorological Interface Unit. Two, identical Meteorological Interface Units (MIU) are fitted to ensure 100 percent redundancy and system availability. Each MIU houses a main processing and interfacing element of the DWS. Inputs to each MIU consist of: wind speed and direction data from the anemometers, and ship's heading and speed data from the FODMS. Each MIU Processor accepts the relative wind speed and direction data from the anemometers and rescales them in relation to a set of stored calibration figures. Wind envelopes

are derived during first of class flying trials for the ship and reflect the effects of ship's structures on the wind flow over and around the anemometers. Following processing, each MIU Processor reformats the relative wind data for transmission to the ship's FODMS. In the dual MIU redundancy configuration, one of the MIUs is set as the Master unit and the other is set as the Slave unit. Under normal operating conditions the Master performs all interface processing while the Slave provides only messages to indicate its Built In Test status. In the event that the Master MIU reports a fault condition, the Slave MIU assumes control of the system and performs all interface processing functions. The two MIUs are situated in Director Equipment Room 1, on opposite bulkheads, and once connected to separate ship's power supplies to improve survivability.

(2) Multifunction Color Repeater. The primary display element of the DWS is the MFCR. The MFCR receives the relative, damped wind data and ship's speed and heading from the FODMS in RS 422 format. The Single Board Computer within the MFCR uses the ship's parameter data to convert the relative, damped wind data into true values. These data are then reformatted for display. Both relative and true wind data can be selected for display. The user is able to select the various presentations of data via a series of programmable switches on the display's lower, front panel. Three MFCRs are used. One MFCR is situated on the bridge; a second is located in Helicopter Control, and the third in the RAST Control Position. The ability to display Ships Helicopter Operating Limit (SHOL) data in the form of launch and recovery envelopes at selected positions is also provided. Software updates to the MFCR operating programs and SHOL data can be accomplished through the use of the support equipment computer and associated software.

(3) Anemometer. The anemometer is the prime sensor unit within the system. Two anemometers are fitted to the mainmast, well away from any structures that may affect the unobstructed flow of wind across the sensor. The anemometers are in a cruciform structure with an ultrasonic transducer fitted to the head of each arm of the cross. The resultant wind speed and direction data are formatted and transmitted via the Junction/Splitter Box to the MIUs for processing. The anemometers are situated on the port and starboard extremities of the lower yardarm of the mainmast.

(4) Junction Box. The junction box consists of an array of diodes that permits the connection of power supplies to both anemometers from both MIUs, providing the sensors with continued power supply in the event of a loss of one of the MIUs. The diodes act as safety devices, preventing the power supplies from one MIU appearing at the output of the other whenever it is shut down or in a fault condition. Data lines from each anemometer are connected for input to both MIUs within the junction box.

2. Physical Description

a. Wind Measuring and Indicating System

NOMENCLATURE	HEIGHT (inches)	WIDTH (inches)	DEPTH (inches)	WEIGHT (pounds)	LOCATION
Detector Unit	32.5	15.5	27.5	15.5	Top of Island
Transmitter Unit	13.5	15.5	7.5	61.0	IC Watch Station
Indicator Unit	11.1	7.4	4.8	15.0	Various
Single Station BITE	24.0	20.0	11.2	81.0	Meteorology
Dual Station BITE	14.0	13.0	7.0	24.0	Meteorology

b. Moriah Wind System. Physical descriptions for the MWS are not available at this time. As descriptive information becomes available, it will be included in updates to this NTSP.

c. Digital Wind System

NOMENCLATURE	HEIGHT (inches)	WIDTH (inches)	DEPTH (inches)	WEIGHT (pounds)	LOCATION
MIU	23.6	12.2	4.7	44.0	Equipment Room
MFCR	11.0	12.1	5.6	17.6	Bridge, Helicopter Control, and RAST Control Room
Anemometer	17.7	See note below.		6.6	Lower Yardarm of the Mast
Junction Box	12.0	9.0	5.0	5.0	Equipment Room

Note: The anemometer is cylindrical and varies in width

3. New Development Introduction

a. Wind Measuring and Indicating System. The WMIS was introduced to the Fleet under the Fleet Modernization Program, the Service Life Extension Program, and new ship construction program.

b. Moriah Wind System. The MWS Program equipment will be introduced as new production equipment based upon the MWS operational and support concepts, with heavy reliance on Non-Developmental Item (NDI), Commercial Off-The-Shelf (COTS), and

Government Off-The-Shelf (GOTS) hardware, software, and firmware, repackaged for the shipboard operating environment.

c. Digital Wind System. The DWS will be introduced to the Fleet under the Fleet Modernization Program and new ship construction program.

4. Significant Interfaces. The three wind systems addressed in this NTSP interface with other systems through designated circuits or local networks for data acquisition and display, where applicable. Examples of other systems to be interfaced include the Joint Maritime Command Information System, Global Command and Control System, FODMS, Aviation Data Management and Control System, Advanced Combat Direction System, and Sonar Local Area Network.

5. New Features, Configurations, or Material. Not Applicable (NA)

H. CONCEPTS

1. Operational Concept. The wind systems addressed in this NTSP are activated during all underway periods, 24 hours per day. Personnel involved in all phases of aircraft launch and recovery operate ALRE Wind Systems displays to gain information required to perform their primary duties. Operators include the Commanding Officer, Air Boss, Mini Boss, Tactical Action Officer, Navigator, Quartermaster, Operations Specialist, Meteorologist, Aircraft Handler, Air Traffic Controller, and other shipboard operations personnel. There are no billets designated for the sole purpose of operating wind systems.

2. Maintenance Concept. Wind systems maintenance is based on two levels, organizational and depot.

a. Organizational. Organizational level maintenance includes all maintenance performed aboard ship by ship's personnel. Organizational level maintenance is performed by Interior Communications Electrician (IC) personnel.

(1) Preventive. Preventive maintenance is conducted at specified intervals per procedures to be established by Maintenance Requirements Cards (MRC). Preventive maintenance actions include cleaning, inspection, lubrication, and operational and functional testing.

(2) Corrective. Corrective maintenance consists of operational and functional tests, fault isolation, and unit repair.

b. Intermediate. NA

c. Depot. Depot level maintenance includes overhaul and calibration of all end items, including units, repairable assemblies, and subassemblies. Depot level maintenance of the WMIS is performed at the Navy Shipyard Norfolk, Virginia. MWS and DWS units will be

maintained by the contractor. The Navy Support Date (NSD) for MWS is scheduled for Fiscal Year (FY) 07 and the Material Support Date (MSD) for DWS is scheduled for FY03.

d. Interim Maintenance. NA

e. Life Cycle Maintenance Plan. NA

3. Manning Concept. There are no billets identified for the sole purpose of operating or maintaining wind systems. Wind systems are operated in conjunction with other tasks that support a primary billet. Maintenance of wind systems is performed by IC personnel as a part of their overall workload.

4. Training Concept. Two training concepts exist for ALRE Wind Systems. Training Concept One identifies ALRE Wind Systems training as it currently exists. Training Concept Two outlines a proposed ALRE Wind Systems training scenario for the future. Training Concept One has been used to develop Parts II through IV of this NTSP.

a. Training Concept One. Initial training for the WMIS was completed decades ago. DWS initial training for Aeronautical Shipboard Installation Representatives (ASIR) and In-Service Engineering (ISE) team members was completed in October 2001. DWS initial training for Fleet Training Center (FTC) instructors was completed in March 2002. Initial MWS training is scheduled for FY04. No follow-on operator training has been established. Follow-on maintenance training for WMIS is established as part of course, *A-651-0047, Propulsion Alarms and Indicating Systems Maintenance*, at FTC Norfolk, Virginia, and FTC San Diego, California. Current plans are to add MWS and DWS maintenance information to this existing course.

(1) Initial Training. NAVAIR Lakehurst will create MWS initial operator and maintainer training for ASIRs, ISE team members, and FTC instructor personnel. This training will be available in FY04.

(2) Follow-on Training

Title **Propulsion Alarms and Indicating Systems Maintenance**

CIN A-651-0047

Model Manager.... FTC Norfolk

Description..... This course provides training to the Interior Communications Electrician, including:

- Type “B” and Type “F” WMIS Maintenance
- Pressure and Temperature Alarm Sensors Maintenance
- Alarm Panels Maintenance
- Switchboard Maintenance
- McNabb Salinity Indicating Level Alarm and Indicating System Maintenance

Upon completion, the graduate will be able to perform organizational level maintenance on propulsion alarms and indicating systems and ALRE Wind Systems in a shipboard environment under limited supervision.

Location ◦ FTC Norfolk
◦ FTC San Diego

Length..... 31 days. To Be Determined (TBD) with DWS and MWS.

RFT date Currently available. TBD with DWS and MWS.

Skill identifier None

TTE/TD..... WMIS for Technical Training Equipment (TTE). Training Device (TD) is NA.

Prerequisite A-623-0105, Interior Communications Electrician Class A School

(3) Student Profile

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
IC	A-623-0105, Interior Communications Electrician Class A School

(4) Training Pipelines. NA

a. Training Concept Two. As ALRE Wind Systems evolve, each new generation provides more information and more complex information displays. To ensure the user is sufficiently skilled to use and accurately interpret wind system data, follow-on operator training is desirable. Additionally, under Training Concept One, it is impossible to identify IC personnel who have received wind system maintenance training, because no Navy Enlisted Classification (NEC) is awarded for completing course, *A-651-0047 Propulsion Alarms and Indicating Systems Maintenance*.

(1) Initial Training. NA

(2) Follow-on Training

(a) Operator Training. Personnel involved in all phases of aircraft launch and recovery operate ALRE Wind Systems displays, including the Commanding Officer, Air Boss, Mini Boss, Tactical Action Officer, Navigator, Quartermaster, Operations Specialist, Meteorologist, Aircraft Handler, Air Traffic Controller, and other shipboard operations personnel. A short course that provides operators with knowledge of the various information available through the ALRE Wind System, and the skills to maximize use of the information is considered essential to efficient flight operations. An alternative to formal classroom operator's training is a Computer-Based Training course that would be completed as part of each operator's watch station qualifications.

(b) Maintainer Training. There are three possible solutions to the problem of identifying IC personnel who have received formal ALRE Wind System maintenance training.

- Assign a NEC to graduates of course *A-651-0047, Propulsion Alarms and Indicating Systems Maintenance*.
- Develop a stand-alone maintenance course that awards an NEC upon successful completion.
- Incorporate the existing course *A-651-0047, Propulsion Alarms and Indicating Systems Maintenance* and a new Aircraft Launch and Recovery Equipment Wind Systems Maintenance course into a new training track that awards an NEC upon completion.

(3) Student Profile

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
IC	A-623-0105, Interior Communications Electrician Class A School

(4) Training Pipelines. TBD**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. No Personnel Qualification Standards (PQS) were developed for the WMIS. PQS will be developed for the MWS and DWS by the Personnel Qualification Standards Development Group, Naval Education and Training Professional Development and Technology Center, Pensacola, Florida.

3. Other Onboard or In-Service Training Packages. On-the-Job Training (OJT) is used aboard all ships. OJT is currently the only source of follow-on operator training for the ALRE Wind Systems.

J. LOGISTICS SUPPORT**1. Manufacturer and Contract Numbers****a. Wind Measuring and Indicating System**

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N68335-97-C-0043 (Type B and F)	Belfort Instrument Incorporated	727 South Wolfe Street Baltimore, MD 21231

b. Moriah Wind System

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N68335-02-D-0008	Quality Performance Incorporated	600H Interstate Business Park Fredericksburg, VA 22405

c. Digital Wind System

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N68335-00-C-0432	Quality Performance Incorporated	600H Interstate Business Park Fredericksburg, VA 22405

2. Program Documentation

a. Wind Measuring and Indicating System. No Logistics Support Plans were developed for WMIS. The WMIS Maintenance Plan, SSIED MP 002-80, was approved in November 1980.

b. Moriah Wind System. A MWS User Logistics Support Summary (ULSS), Maintenance Plan, and Operational Requirements Document are being developed and will be available in late FY03.

c. Digital Wind System. A DWS ULSS, Maintenance Plan, and Operational Requirements Document are being developed and will be available in late FY03.

3. Technical Data Plan

a. Wind Measuring and Indicating System. All WMIS technical manuals are available and have been distributed.

b. Moriah Wind System. The contractor will provide MWS technical documentation, including Maintenance Instruction MRCs to each activity during installation.

c. Digital Wind System. The contractor is providing DWS technical documentation, including Maintenance Instruction MRCs to each activity during installation.

4. Test Sets, Tools, and Test Equipment. Special tools and test equipment for the three ALRE Wind Systems are listed in Part IV, element IV.A.1 of this NTSP.

5. Repair Parts

a. Wind Measuring and Indicating System. Formal supply support for the WMIS is currently available through the Navy Inventory Control Point (NAVICP), Mechanicsburg, Pennsylvania.

b. Moriah Wind System. The MWS contractor will provide interim spare parts support prior to the MSD scheduled for FY07. After the MSD, supply support will be available through the NAVICP Mechanicsburg and the Defense Logistics Agency (DLA).

c. Digital Wind System. The DWS contractor will provide interim spare parts support prior to the MSD scheduled for FY03. After the MSD, supply support will be available through the NAVICP Mechanicsburg and the DLA.

6. Human Systems Integration. New design systems and software address the human-machine interface for operators, maintainers, and support personnel. The MWS and DWS design processes conformed to standard human engineering practices as defined in existing human factors engineering design standards. All new hardware and software will minimize the requirement for special cognitive, physical, or sensory requirements of the operators, maintainers, or support personnel beyond those available in current Naval personnel resources. This NTSP is a combination of three wind systems currently only WMIS is being taught in the Propulsion Alarms and Indicating Systems Maintenance course, the delivery method is paper based with no CAI. The DWS is going to be taught in the Propulsion Alarms and Indicating Systems Maintenance course when technical manual becomes finalized. A job analysis and subsequent task analysis were conducted to identify and knowledge, skill and attitudinal requirements for the job of operator/maintainer. These tasks were then subjected to an analysis to identify candidate tasks for training. The analysis was conducted on two levels. A subjective SME based identification of tasks, sub-tasks and task elements that require training and a formal, criterion-referenced analysis process where nine key criteria of the tasks were rated. The SME analysis was used as a control to detect any significant deviations that might occur in the criterion based analysis. The delivery method will be a blend of CBT and paper based instruction to support the instructor and to act as the focus of learner centered remedial and operator drill training. The decision to recommend PC based simulation was derived from the outcomes of training methods and media analysis, which was conducted to identify the most cost-effective solution from a range of candidate resources. The decision to develop a CBT product was derived from the methods and media analysis, conducted during the training design stage. That was followed by a source data collection period in which engineering and user data were collated to ensure that the final CBT product accurately reflects the system being simulated, and that it meets the learning needs of the target population. The Training Program Development and Management Plan was done by the contractor who developed/manufactured and provided all Logistics for the system. The Training Program Development and Management Plan were done in accordance with DI-ILSS-81070. The MWS is still in development and will be taught in the Propulsion Alarms and Indicating Systems Maintenance course and is anticipated that the delivery method will be a blend of CBT/ICW and paper based instruction.

K. SCHEDULES

1. Installation and Delivery Schedule

a. Wind Measuring and Indicating System. All WMIS installations have been completed.

b. Moriah Wind System. The MWS will replace the WMIS on all Navy ships except DDG 79 through DDG 86 and DDG 87 through DDG 101. When an installation schedule

has been developed, the information will be included in updates to this NTSP. MWS Initial Operating Capability (IOC) is scheduled for FY05.

c. Digital Wind System. The DWS has been installed onboard DDG 79 through DDG 86. The DWS will be installed onboard DDG 87 through DDG 101 during construction beginning in FY03.

2. Ready For Operational Use Schedule. Wind systems are Ready for Operational Use upon completion of installation and certification.

3. Time Required to Install at Operational Sites

a. Wind Measuring and Indicating System. The WMIS requires approximately three months to install.

b. Moriah Wind System. It is expected to take eight to ten weeks to install the MWS.

c. Digital Wind System. DWS installation requires nine weeks.

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

5. Training Device and Technical Training Equipment Delivery Schedule

a. Wind Measuring and Indicating System. One WMIS has been installed at each of the two training activities for use as TTE. No TD is required.

b. Moriah Wind System. TTE and TD requirements for MWS are TBD.

c. Digital Wind System. No TTE or TD are required to support DWS training.

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

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT TITLE	DOCUMENT NUMBER	PDA CODE	STATUS
Moriah Need Statement	M067-096-95	PMA251	Aug 95
WMIS Maintenance Plan	SSIED MP No. 002-80	NAVAIR Lakehurst	Approved Nov 80

DOCUMENT TITLE	DOCUMENT NUMBER	PDA CODE	STATUS
Aircraft Carrier Visual Landing Aid Systems NTSP	A-50-9202B/D	PMA251	Draft Feb 03
Air Capable Ships Visual Landing Aid Systems NTSP	A-50-9205B/D	PMA251	Draft Jul 02
Amphibious Assault Ships Visual Landing Aid Systems NTSP	A-50-9203A/A	PMA251	Approved Jul 02
Moriah Program NTSP	A-50-0001A/A	PMA251	Approved Sep 02

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the ALRE Wind Systems and, therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

- II.A.1.a. Operational and Fleet Support Activity Activation Schedule
- II.A.1.b. Billets Required for Operational and Fleet Support Activities
- II.A.1.c. Total Billets Required for Operational and Fleet Support Activities
- 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
- II.A.3. Training Activities Instructor and Support Billet Requirements
- II.A.4. Chargeable Student Billet Requirements
- II.A.5. Annual Incremental and Cumulative Billets

II.B. Personnel Requirements

- II.B.1. Annual Training Input Requirements

Note: Personnel involved in all phases of aircraft launch and recovery operate ALRE Wind Systems displays to gain information required to perform their primary duties. There are no billets designated for the sole purpose of operating ALRE Wind Systems. There are no billets identified for the sole purpose of maintaining ALRE Wind Systems. Maintenance of ALRE Wind Systems is performed by Interior ICs as a part of their overall workload. Therefore, there are no specific billet or personnel requirements associated with this NTSP.

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the ALRE Wind Systems and, therefore, are not included in Part III of this NTSP:

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.1. INITIAL TRAINING REQUIREMENTS

COURSE TITLE: MWS Initial Training
COURSE DEVELOPER: NAVAIR Lakehurst
COURSE INSTRUCTOR: NAVAIR Lakehurst
COURSE LENGTH: TBD
ACTIVITY DESTINATIONS: FTC Norfolk
FTC San Diego
ISE Team
Shipyard

LOCATION, UIC
NAVAIR Lakehurst, 45945

BEGIN DATE	STUDENTS			
	OFF	ENL	CIV	
Mar 04		4	10	Input AOB Chargeable

III.A.2. FOLLOW-ON TRAINING

III.A.2.a. EXISTING COURSES

CIN, COURSE TITLE: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance
TRAINING ACTIVITY: FTC
LOCATION, UIC: NS Norfolk, 61797

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

CFY03		FY04		FY05		FY06		FY07		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	81		81		81		81		81	ATIR
	73		73		73		73		73	Output
	5.1		5.1		5.1		5.1		5.1	AOB
	5.1		5.1		5.1		5.1		5.1	Chargeable

CIN, COURSE TITLE: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance
TRAINING ACTIVITY: FTC
LOCATION, UIC: NTC San Diego, 61690

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

CFY03		FY04		FY05		FY06		FY07		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	81		81		81		81		81	ATIR
	73		73		73		73		73	Output
	5.1		5.1		5.1		5.1		5.1	AOB
	5.1		5.1		5.1		5.1		5.1	Chargeable

Note: ATIR, Output, AOB, and Chargeable student billet data provided by the course manager, FTC Norfolk. This is a stand-alone course that does not award an NEC.

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the ALRE Wind Systems and, therefore, are not included in Part IV of this NTSP:

IV.A. Training Hardware

IV.A.2. Training Devices

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: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance

TRAINING ACTIVITY: FTC

LOCATION, UIC: NS Norfolk, 61797

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
001	Detector Wind Direction	1	Jul 00	GFE	Onboard
002	Mount, Detector, Wind Direction	1	Jul 00	GFE	Onboard
003	Transmitter, Wind Direction	1	Jul 00	GFE	Onboard
004	Indicator, Wind Direction	1	Jul 00	GFE	Onboard
005	Synchro Panel	1	Jul 00	GFE	Onboard
006	Test Panel Assembly	1	Jul 00	GFE	Onboard
007	Wind Measuring Set	1	Jul 00	GFE	Onboard
008	Indicator, Single Bite	12	Jul 00	GFE	Onboard
009	NAVAIR Certification and Test Kit	1	Jul 00	GFE	Onboard

CIN, COURSE TITLE: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance

TRAINING ACTIVITY: FTC San Diego

LOCATION, UIC: NTC San Diego, 61690

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
001	Detector Wind Direction	1	Jul 00	GFE	Onboard
002	Mount, Detector, Wind Direction	1	Jul 00	GFE	Onboard
003	Transmitter, Wind Direction	1	Jul 00	GFE	Onboard
004	Indicator, Wind Direction	1	Jul 00	GFE	Onboard
005	Synchro Panel	1	Jul 00	GFE	Onboard
006	Test Panel Assembly	1	Jul 00	GFE	Onboard
007	Wind Measuring Set	1	Jul 00	GFE	Onboard
008	Indicator, Single Bite	12	Jul 00	GFE	Onboard
009	NAVAIR Certification and Test Kit	1	Jul 00	GFE	Onboard

IV.B. COURSEWARE REQUIREMENTS

IV.B.1. TRAINING SERVICES

COURSE / TYPE OF TRAINING	SCHOOL LOCATION, UIC	NO. OF PERSONNEL	MAN WEEKS REQUIRED	DATE BEGIN
MWS initial training	NAVAIR Lakehurst, 45945	2	TBD	FY04

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

CIN, COURSE TITLE: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance

TRAINING ACTIVITY: FTC

LOCATION, UIC: NOB Norfolk, 61797

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Instructor Guide	1	Jul 00	Onboard
Student Guide Volume I	9	Jul 00	Onboard
Student Guide Volume II	9	Jul 00	Onboard
Transparencies	10	Jul 00	Onboard
Video Cassette, Wind Measuring System	1	Jul 00	Onboard
Wall Chart	1	Jul 00	Onboard

CIN, COURSE TITLE: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance

TRAINING ACTIVITY: FTC

LOCATION, UIC: NTC San Diego, 61690

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Instructor Guide	1	Jul 00	Onboard
Student Guide Volume I	9	Jul 00	Onboard
Student Guide Volume II	9	Jul 00	Onboard
Transparencies	10	Jul 00	Onboard
Video Cassette, Wind Measuring System	1	Jul 00	Onboard
Wall Chart	1	Jul 00	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance
TRAINING ACTIVITY: FTC
LOCATION, UIC: NS Norfolk,61797

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
AM-410AA-MAN-000 Operational and Maintenance Instructions with Illustrated Parts Breakdown for Type B WMIS	Hard copy	12	Jul 00	Onboard
AM-410AB-MAN-000 Operational and Maintenance Instructions With Illustrated Parts Breakdown for Type F WMIS	Hard copy	12	Jul 00	Onboard
AM-420-AD-MAN-000 Cross Wind and Head Wind Computer Assembly and Speed Indicator	Hard copy	12	Jul 00	Onboard

CIN, COURSE TITLE: A-651-0047, Propulsion Alarms and Indicating Systems Maintenance
TRAINING ACTIVITY: FTC
LOCATION, UIC: NTC San Diego, 61690

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
AM-410AA-MAN-000 Operational and Maintenance Instructions with Illustrated Parts Breakdown for Type B WMIS	Hard copy	12	Jul 00	Onboard
AM-410AB-MAN-000 Operational and Maintenance Instructions With Illustrated Parts Breakdown for Type F WMIS	Hard copy	12	Jul 00	Onboard
AM-420-AD-MAN-000 Cross Wind and Head Wind Computer Assembly and Speed Indicator	Hard copy	12	Jul 00	Onboard



PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
TSA	Began WMIS Initial Training	Mar 95	Complete
TSA	Delivered WMIS Curricula Materials	Apr 95	Complete
TA	Began WMIS Follow-On Training	Oct 95	Complete
PDA	Began Analysis of MPT Requirements	Jan 96	Complete
DCNO	Programmed Manpower and Training Resource Requirements	Feb 96	Complete
NAVICP	Established WMIS Type F Hi-Shock NSD	Feb 97	Complete
TSA	Delivered WMIS Technical Training Equipment	Jul 00	Complete
PDA	Conducted Analysis of Moriah MPT Requirements	Feb 99	Complete
DA	Distributed Moriah Draft NTSP for Review	Mar 00	Complete
PDA	Developed Moriah Integrated Logistics Support Master Plan	Sep 00	Complete
PDA	Achieved IOC for DWS	Mar 02	Complete
TSA	Develop Draft ALRE Wind Systems NTSP	Feb 03	Complete
NAVICP	Attain DWS MSD	FY03	Pending
PDA	Attain DWS NSD	FY03	Pending
TSA	Begin MWS Initial Training	FY04	Pending
TSA	Deliver MWS Curricula Materials	FY04	Pending
PDA	Begin MWS Fleet Introduction	FY05	Pending
NAVICP	Attain MWS MSD	FY07	Pending
PDA	Attain WMS NSD	FY07	Pending
TSA	Begin DWS Follow-On Maintenance Training	TBD	Pending
TSA	Begin MWS Follow-On Maintenance Training	TBD	Pending



PART VI - DECISION ITEMS / ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED

COMMAND ACTION

DUE DATE

STATUS

No NTSP decisions items or actions are pending.



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