

**INITIAL**  
**NAVY TRAINING SYSTEM PLAN**  
**FOR THE**  
**AVIATION DATA MANAGEMENT**  
**AND CONTROL SYSTEM**

**MARCH 1999**

**March 1999**

## **AVIATION DATA MANAGEMENT AND CONTROL SYSTEM**

### **EXECUTIVE SUMMARY**

This Initial Navy Training System Plan (NTSP) for the Aviation Data Management And Control System (ADMACS) was developed by the Naval Air Systems Command. It provides an early estimate of the manpower, personnel, and training requirements needed to support and sustain ADMACS. Since the Integrated Shipboard Information System (ISIS) is a companion system of ADMACS, its manpower, personnel, and training requirements are also included in this document.

ADMACS is a real time, configuration managed, tactical Local Area Network providing connectivity among flight operations and Aircraft Launch and Recovery Equipment related work centers on Aircraft Carriers and Amphibious Assault Ships. Through connectivity with ISIS and direct interface with the Joint Maritime Command Information System (JMCIS), ADMACS will support the command, control, communication, computer, and intelligence requirements of the Joint Navy and Marine Corps commanders.

Currently, data collected from paper documents, telephones, and intercoms are being transcribed and hand written on plastic status boards. The ISIS system will replace these plastic status boards. It will be an electronic data processing and display system improving the timeliness and accuracy of Air Operations (AIR OPS) information provided to decision-makers onboard CV, CVN, LHA, and LHD ships during shipboard flight operations. The ISIS employs existing and emerging technologies, and interfaces with other shipboard tactical, navigational, and meteorological databases through the ADMACS to enable rapid input, collection, processing, and distribution of relevant air operations data and the display of this information to all required air operations work centers throughout the ship.

Based on an operator and maintainer functional workload analysis, it is estimated that no additional personnel will be required to support ADMACS or ISIS. ADMACS and ISIS hardware maintenance will be performed by shipboard Electronic Technicians (ET) with Navy Enlisted Classification (NEC) code 1677. Software maintenance will be performed by Radioman (RM) with NEC code 2735. ADMACS and ISIS operator functions at AIR OPS, Carrier Controlled Approach, Primary Flight Control, and Flight Deck Control work centers will be performed by personnel in the Air Traffic Controller (AC) rating with various NECs, depending on the type of ship.

The ADMACS and ISIS training requirements consist of initial and follow-on training. Initial training was provided to maintainers and operators on a prototype system by Naval Air Warfare Center Aircraft Division, Lakehurst, New Jersey. Based on a cursory training analysis it is estimated ADMACS and ISIS follow-on training will be incorporated into existing courses and will not increase or decrease the lengths of these courses.

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**AVIATION DATA MANAGEMENT AND CONTROL SYSTEM**

**LIST OF ACRONYMS**

AATCC	Amphibious Air Traffic Control Center
AC	Air Traffic Controller
ADM	Advanced Development Model
ADMACS	Aviation Data Management And Control System
AIR OPS	Air Operations
ALRCS	Advanced Launch and Recovery Control System
ALRE	Aircraft Launch and Recovery Equipment
ATM	Asynchronous Transfer Module
AWIMS	Aviation Weapons Information Management System
BIT	Built-In Test
CATCC	Carrier Air Traffic Control Center
CBT	Computer-Based Training
CCA	Carrier Controlled Approach
CIN	Course Identification Number
CNO	Chief of Naval Operations
CSE	Common Support Equipment
CV	Aircraft Carrier
CVN	Aircraft Carrier, Nuclear
DS	Data Systems Technician
EDM	Engineering Development Model
ET	Electronics Technician
FDC	Flight Deck Control
FISC	Fleet Industrial Supply Center
HARDMAN	Hardware/Manpower
HDC	Hangar Deck Control
ILSP	Integrated Logistics Support Plan
ISIS	Integrated Shipboard Information System
JMCIS	Joint Maritime Command Information System
LAN	Local Area Network

**AVIATION DATA MANAGEMENT AND CONTROL SYSTEM**

**LIST OF ACRONYMS**

LHA	Landing Ship, Helicopter Assault
LHD	Multi-Purpose Amphibious Assault Ship
LSO	Landing Signal Officer
NATTC	Naval Air Technical Training Center
NAVAIRSYSCOM	Naval Air Systems Command
NAWCADLKE	Naval Air Warfare Center Aircraft Division Lakehurst
NEC	Navy Enlisted Classification
NTSP	Navy Training System Plan
OJT	On-the-Job Training
OPIS	Operations Planning and Information System
PQS	Personnel Qualification Standards
PRI-FLY	Primary Flight
PSICP	Program Support Inventory Control Point
RFT	Ready For Training
RM	Radioman
TAC	Tactical Advanced Computer
TBD	To Be Determined
TD	Training Device
TTE	Technical Training Equipment
UPS	Uninterruptible Power Supply
VISUAL	Virtual Imaging System for Approach and Landing
VLA	Visual Landing Aid

**March 1999**

## **AVIATION DATA MANAGEMENT AND CONTROL SYSTEM**

### **PREFACE**

This is the first iteration of the Initial Navy Training System Plan (NTSP) for the Aviation Data Management And Control System (ADMACS). It includes the training course information, billet, and personnel requirements to support both ADMACS and the Integrated Shipboard Information System (ISIS). As these programs mature, additional information will be included as it becomes available.

The ADMACS development and implementation will be divided into five increments. Each increment will be managed, funded, developed, and tested separately and will comprise of system(s) which contribute to the overall ADMACS development objectives and address the specific requirements of that particular user community. Currently Increment I (the Integrated Shipboard Information System), Increment III (Virtual Imaging for Approach and Landing), and Increment IV (Advanced Launch and Recovery Control System) are funded for development. As a result, this Initial NTSP contains only the manpower, personnel, and training requirements for ADMACS and ISIS equipment included in these increments. The manpower, personnel, and training requirements for ADMACS and ISIS equipment included in future increments will be added to this document as each of the increments are approved and funded.

This Initial NTSP is a product of the Training Planning Process Methodology (TRPPM), which is the Navy's replacement for the Hardware/Manpower (HARDMAN) Integration Program Methodology. As such, the format of this document is somewhat different than its predecessor, the HARDMAN Concept Document. However, their purposes are the same.

## PART I - TECHNICAL PROGRAM DATA

### A. NOMENCLATURE-TITLE-PROGRAM

1. **Nomenclature-Title-Acronym.** Aviation Data Management And Control System (ADMACS).

2. **Program Element.** 0603512N.

### 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 (N88D)

OPO Resource Sponsor ..... CNO (N885D)

Developing Agency ..... NAVAIRSYSCOM (PMA251)

Training Agency ..... CINCLANTFLT (N721)  
CINCPACFLT (N321)  
CNET (T234)

Training Support Agency ..... NAVAIRSYSCOM (PMA205)

Manpower and Personnel Mission Sponsor ..... CNO (N12)  
NAVPERSCOM (NPC-4, 404D, 406D)

Director of Naval Training ..... CNO (N7)

### D. SYSTEM DESCRIPTION

1. **Operational Uses.** The ADMACS is a tactical, real time, configuration managed Local Area Network (LAN) which will provide connectivity throughout the Air Department and other ship divisions that manage aircraft during launch and recovery operations on Aircraft Carriers (CV), Nuclear Aircraft Carriers (CVN), and Helicopter/Amphibious Assault (LHA/LHD)

class ships. The ADMACS provides connectivity between Aircraft Launch and Recovery Equipment (ALRE) used to conduct aircraft operations, and other shipboard systems.

The ISIS will provide input for automatic collection, distribution and display of critical Air Operations (AIR OPS) information in all flight operation areas aboard CV, CVN, LHA, and LHD type ships. ISIS will acquire data automatically from existing equipment and shipboard data sources through operator input. This information will be distributed between AIR OPS, Carrier Air Traffic Control Center (CATCC), Primary Flight Control (PRI-FLY), Landing Signal Officer (LSO), Flight Deck Control (FDC), Squadron Ready Rooms, Bridges, Strike Operations, OA Division (weather), Arresting Gear Officer, Integrated Catapult Control Station, and Combat Direction Center. In addition, ISIS will have the capability to accept and display launch and recovery information from interfaces with current and future systems. This information will be displayed to decision makers on electronic status boards and displays through operator input stations in other Air Department spaces. The information collected and displayed in the ISIS databases includes the following: Air Plan, Aircraft Status, Launch/Recovery data, Divert data, Squadron/Pilot data, Ship data, and Weather data.

**2. Foreign Military Sales.** There are no Foreign Military Sales or other service procurements associated with ADMACS at this time.

**E. DEVELOPMENTAL TEST AND OPERATIONAL TEST.** The Advanced Development Model (ADM) evaluation for ISIS, the core LAN component of ADMACS, was completed onboard the USS George Washington (CVN-73) during the ship's deployment in FY95 and FY97. ADMACS/ISIS Engineering Development Model (EDM) was installed aboard USS Theodore Roosevelt (CVN-71) in March 1999. Naval Air Warfare Center Aircraft Division (NAWCADLKE), Lakehurst, New Jersey, installed both the ADM and EDM.

**F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED.** ISIS will replace the Plexiglas status boards with monitors and large screen displays. Currently, data is being transmitted over telephones or intercoms, transcribed from paper documents, and then hand written backwards on the Plexiglas status boards. ADMACS is a new system that will be compatible with the Joint Maritime Command Information System (JMCIS) and will provide instantaneous data distribution over the LAN incorporating ISIS as the initial component for management of aircraft launch and recovery information and air traffic control information.

## **G. DESCRIPTION OF NEW DEVELOPMENT**

**1. Functional Description.** As previously stated, ADMACS will provide connectivity between ALRE used to conduct aircraft operations, and other shipboard systems. The systems and equipment being connected and interfaced to ADMACS will be connected in five increments. The first increment is the ISIS. The functional description of ISIS and the four other systems are included in the following paragraphs:

**a. Increment I - ADMACS and ISIS.** ADMACS allows the incorporation of the functionality of many ALRE and AIR OPS components into a single software and hardware baseline. The ADMACS is a real-time, redundant, survivable LAN supporting its components through one-way and two-way secure transfer of critical flight operations data, ensuring information is correctly received by those components requiring the information. This will provide command and supervisory personnel adequate opportunity to assess status and needs quickly and effectively. The ADMACS is a mission critical system that is required to act as a stand-alone, autonomous LAN with the ALRE and AIR OPS supporting work centers when failures and/or battle damage prevent communications with and/or through external interfaces. When a reliable, embedded, overarching LAN (such as the Integrated Communications Advanced Networks) has been successfully tested and fielded, ADMACS functions which are found to be repetitive with this LAN will be transferred. Overall, the ADMACS will provide an open system interface allowing future enhancements to be incorporated into the ADMACS baseline, including the processing of video and voice recognition, along with other audio data.

ISIS will be an electronic data processing and display system improving the timeliness and accuracy of AIR OPS information provided to decision makers aboard CV, CVN, LHA, and LHD type ships during shipboard flight operations. The ISIS employs existing and emerging technologies, interfacing with other shipboard tactical, navigational, and meteorological databases through the ADMACS to enable rapid input, collection, processing, and distribution of relevant air operations data and the display of this information to all required air operations work centers throughout the ship.

Through the ADMACS/ISIS information, including the Air Plan, will be available to all authorized users. The system will include an emergency back-up capability for equipment supporting critical functions with dedicated Uninterruptible Power Supply (UPS) to allow system operation in the event of power outages. The system will be capable of operating through at least one critical failure without degradation. The system will support the transfer of critical functions from a single failing item to other operational items. Upon a critical system failure, where multiple failing subsystems exist or back-up power is about to expire, the system will save and print the current data. In the event of the loss of inter-space communications, the system will also include the capability for a workstation to operate autonomously supporting critical functions, allowing manual updates into the database and automatically reconciling databases upon re-establishment of inter-space communications. Other features include an electronic paperwork system to standardize and automate the preparation, and distribution and storage of official forms, reports, records and logs.

**b. Increment II - Aviation Weapons Information Management System, including the Magazine Arrangement Planning Aid - Computerized.** The Aviation Weapons Information Management System (AWIMS) will provide information management, control, and communications for the Weapons Department. It will fulfill requirements for improved planning, tracking, control, and monitoring of aviation weapons aboard CV, CVN, LHA, and LHD ships. These improvements will permit the rapid response to situational changes, provide real-time data to decision makers, and reduce the workload associated with these functions. The AWIMS will provide an integrated, economical tool supporting the Weapons Department information

requirements by enhancing their ability to enter, store, retrieve, report, and communicate aviation weapons data in a high tempo, real time operational environment. Functions to be performed by the AWIMS are, but not limited to, the following: Weapons Movement Tracking, Automated Load Planning, automated aid supporting on-loads and underway replenishments, magazine arrangement functions, Weapons Build Status tracking and reporting, and Automated Display/Status Boards.

Through the ADMACS, the AWIMS will provide information to key decision-makers and other ship departments, making weapons data available when and where it is needed. The AWIMS will also be able to receive data such as the Air Plan and its revisions from the ISIS, essential to developing the Load Plan and responding to situational changes.

**c. Increment III - Virtual Imaging System for Approach and Landing.** The Virtual Imaging System for Approach and Landing (VISUAL) is an electro-optical sensor and display system that will provide the ship's company and approaching pilots enhanced images of the aircraft and ship, respectively, in low visibility and night conditions. The VISUAL will develop and integrate emerging technologies and data networks synergistically in order to provide critical recovery information to the LSO and other decision-makers. It will replace stand-alone, obsolete systems and/or components currently found in the Integrated Launch and Recovery Television Surveillance system and the LSO workstation. The VISUAL will also provide a two-way communication link with the aircraft and ship so that critical information can be exchanged during the approach. The VISUAL in its entirety is applicable to CV and CVN ships, while some subsystems, including the integrated LSO workstation, will be applicable to LHA and LHD ships.

**d. Increment IV - Advanced Launch and Recovery Control Systems.** The Advanced Launch and Recovery Control System (ALRCS) will provide catapult and arresting gear control systems to improve the performance, reliability, and safety of existing systems aboard Nimitz-class aircraft carriers and to reduce the maintenance costs associated with these systems. The ALRCS will integrate all operating, sequence, and interlock equipment monitoring and data acquisition functions into a redundant microprocessor-based control system, and will include the automatic generation of individualized Launch and Recovery Bulletins. The ALRCS will consist of several subsystems installed in critical aviation workspaces located throughout the ship. The ALRCS includes a Sequence and Interlock System, an Automated Data Acquisition and Monitoring System, a Computer-Aided Control Selector Valve Touch Input System, a Constant Run-Out Valve Weight Setting System, and a Power Retract System for the arresting gear. The ALRCS will support the ship's V-2 Division and the Aircraft Launch and Recovery Equipment Maintenance Program. The ALRCS architecture will support current ALRE (C-13 series catapults and Mk-7 series arresting gear) as well as future advanced technology systems. The ALRCS will reduce system maintainability requirements and complexity, while increasing reliability, safety, and system availability and providing system failure trend data automatically.

**e. Increment V - Operations Planning and Information System.** The Operations Planning and Information System (OPIS) will utilize sensors, displays, signal processing, digital communications, and expert systems to provide modern, high performance, fully integrated aviation work centers, which will increase aircraft sortie generation rates while

also increasing the safety of aviation operations and the affordability of these systems. All aviation related work centers on CV and CVN ships, including PRI-FLY Control, FDC and Hangar Deck Control (HDC) will be modernized and integrated. The focus will be on Human Systems Integration issues with the consolidation of operator and equipment interface by redesigning, replacing, relocating, and/or absorbing equipment functions into an integrated command and control system. The OPIS will improve the quality, accuracy, timeliness, and distribution of critical aviation information. In addition to providing the status and condition of ALRE systems, the OPIS will provide improved wind information and real-time aircraft status and location. Knowing the location and status of each aircraft, and utilizing expert systems, the OPIS will provide decision aids for aircraft and ALRE maintenance and aviation mission planning (i.e., matching aircraft and missions). The OPIS will accommodate the integration of future systems utilizing robust systems architecture.

## **2. Physical Description**

**a. ADMACS.** ADMACS/ISIS will integrate commercial off-the-shelf and government off-the-shelf data management hardware and software components with a fiber-optic LAN. As this program matures, additional data will be incorporated. The main components are:

### **(1) Servers**

- 4 - Tactical Advanced Computer (TAC) slow cost servers
- 4 - TAC high performance server

### **(2) Network Switches**

- 4 - Network switches (with Asynchronous Transfer Mode (ATM) and Ethernet interface)
- 1 - Network HUB (with Ethernet parts)

### **(3) Power Supply**

- UPS (both rack mountable and stand-alone)

**b. ISIS.** Four ISIS primary work centers will be configured as follows:

### **(1) Air Operations**

- 4 - Large Screen Displays
- 2 - Operator Workstations
- 1 - Printer

### **(2) Carrier Controlled Approach**

- 5 - Large Screen Displays
- 3 - Operator Workstations

1 - Printer

**(3) Primary Flight Control**

2 - Executive displays  
3 - Operator Workstations  
1 - Printer

**(4) Flight Deck Control**

2 - Executive Displays  
3 - Operator Workstations  
1 - Printer

**c. Weight and Dimensional Limits**

Servers: .....weight < 150 lbs.  
Electronic Status Boards: .....weight < 50 lbs.  
Display Monitors: .....weight < 50 lbs.  
Data Entry Stations: .....weight < 50 lbs.  
Switches: .....weight < 100 lbs.  
UPS: .....weight < 200 lbs.

**3. New Development Introduction.** ADMACS/ISIS will be installed on CV, CVN, LHA, and LHD type ships during overhaul periods as new production items. The ADMACS development and implementation will be divided into five increments (as described above in paragraph G.1.). Each increment will be managed, funded, developed, and tested separately and will comprise of systems that contribute to the overall ADMACS development objectives.

**4. Significant Interfaces.** ADMACS/ISIS will interface with the ship's associated electrical power systems and will integrate all component functions required to support flight operations. Installed equipment will be selected to support ship class and external system interfaces required for ship's command. Examples of the ship's command are JMCIS and ship's closed circuit television (9TV and 23TV).

**5. New Features, Configurations, or Material.** The key element of ADMACS/ISIS will be an ATM over a fiber optic backbone used for electronic data. Other major features will be the large screen displays and data input terminals. ADMACS/ISIS will be used in Carrier Controlled Approach (CCA), AIR OPS, PRI-FLY, FDC, Strike Ops, Squadron Ready Rooms, and other spaces throughout the 03 level for CVs and CVNs, and into different spaces for LHA and LHD ships to initiate, distribute, or receive shipboard information from both manual and automatic data sources.

## H. CONCEPTS

**1. Operational Concept.** For CV/CVN class ships, ADMACS/ISIS will provide related data in CCA, AIR OPS, PRI-FLY, FDC, LSO platform, Squadron Ready Rooms, and other spaces. For LHA and LHD ships, ADMACS/ISIS will provide related data in PRI-FLY, FDC, HDC, Tactical Air Control Center, Squadron Ready Rooms Debarck Control, and other spaces. Manual input stations will require a variety of ratings from different divisions and branches to be manned during flight operations or special evolutions, as is done currently. ADMACS will be a continuously operating LAN, acquiring data automatically from existing equipment and shipboard data sources as well as utilizing manual data input. System diagnostics will monitor components for full up status. The system will send both visual and aural alarms to indicate equipment failures and reduced operation and reconfigure automatically to minimize the problem.

**2. Maintenance Concept.** Maintenance of the ADMACS/ISIS will consist of organizational and depot levels only.

**a. Organizational.** Organizational level maintenance will include preventive and corrective maintenance including cleaning, Built-In Test (BIT) fault isolation of components, removal and replacement of modules and components. The system will be fault tolerant and capable of overcoming single point failures with no system degradation. In the event of critical equipment failure, the system will maintain degraded prioritized communication when possible.

**(1) Preventive Maintenance.** Preventive maintenance will be conducted at specified intervals in accordance with procedures established by Maintenance Requirements Cards and system certification.

**(2) Corrective Maintenance.** Corrective maintenance will consist of BIT fault isolation and removal and replacement of failed modules and components, and system functional testing.

**b. Intermediate.** Organic personnel will perform no intermediate level maintenance.

**c. Depot.** The original equipment manufacturer or an authorized repair station will perform depot level maintenance. Depot level maintenance will consist of repair, rework, and overhaul of the replaceable assemblies and shop replaceable assemblies that are beyond the repair capability of the organizational level.

**d. Interim Maintenance.** NA

**e. Life-Cycle Maintenance Plan.** ADMACS/ISIS will be installed during carrier overhaul periods with configuration requests and upgrades documented through the current ship's Maintenance Plan.

**3. Manning Concept.** Based on an operator and maintainer functional workload analysis, it is estimated that no additional personnel will be required to support ADMACS/ISIS.

Operator requirements for ADMACS/ISIS will be satisfied by personnel currently assigned operator (watch station) responsibilities with the existing system. Existing personnel in the Electronics Technician (ET) rating assigned to the Operations Department will satisfy maintainer requirements.

**a. Estimated Maintenance Man-Hour per Operating Hour.** The ADMACS/ISIS and its related components are designated continuously operating systems and will be capable of distributing and processing information in support of air operations 24 hours per day throughout a six month deployment. The technical parameter threshold values derived from the Operational Requirements Document for system reliability, availability, and repair times are as follows:

<b>PARAMETER</b>	<b>DEFINITION</b>	<b>THRESHOLD</b>	<b>OBJECTIVE</b>
System Reliability	Mean Time Between Operational Mission Failures	1406 hours	3626 hours
System Availability	Uptime / (Uptime + Downtime) (percent of uptime usage)	95%	98%
Weekly Downtime	Preventive and Corrective Maintenance per Week	8.4 hours	3.36 hours
Operational Mission System Maintainability	Maximum Corrective Mean Time for Operational Mission Failures	1.5 hours	1.0 hours
Overall System Maintainability	Estimated Corrective Maintenance Man-Hours per Operating Hour	0.001 hours	0.0002 hours

Assuming the ADMACS/ISIS threshold and objective goals (above) are attained, the system will not generate enough maintenance actions to require any additional maintenance personnel. Further, since ADMACS/ISIS does not generate any additional watch stations or operator positions, no additional operators will be necessary.

**b. Proposed Utilization.** The proposed utilization is 5040 hours annually (210 days times 24 hours).

**c. Recommended Qualitative and Quantitative Manpower Requirements**

**(1) Aircrew.** NA

**(2) Enlisted.** ADMACS/ISIS maintainer functions are identified in two groups, hardware and software. Shipboard ETs with Navy Enlisted Classification (NEC) code 1677 will accomplish preventive and corrective maintenance. This NEC previously belonged to

the Data Systems (DS) Technician rating. The ET and DS ratings merged in October 1997. Software will be maintained by shipboard Radioman (RM) rating with NEC 2735, Information System Administrator. Separate NEC groups from the Air Traffic Controller (AC) rating, depending on the type of ship, will perform most ADMACS/ISIS operator functions. CV and CVN operators will be ACs with NEC 6902, CATCC Controllers. LHA and LHD operators will be ACs with NEC 6903, Amphibious Air Traffic Control Center (AATCC) Controllers. Personnel who are not within the AC rating may perform some operator functions.

**4. Training Concept**

**a. Initial Training.** Initial training will be required for Operational Evaluation personnel so they can successfully perform testing functions. Navy AC instructors will also require initial training so that they can establish organic follow-on training. This initial training was scheduled and provided in March 1998. Personnel from the NAWCADLKE provided training at Naval Air Technical Training Center (NATTC) Millington, Tennessee, to AC operators. Maintainers (i.e., RMs and ETs) were trained on CVN-73 for the ISIS prototype test. AC operator training has relocated to NATTC Pensacola, Florida. Training for the CVN-71 AC operators will be completed on the ship. The maintainers were trained at NAWCADLKE in March 1998 and on the ship in September 1998.

**b. Follow-on Training**

**(1) Operator.** Follow-on operator training for shipboard operators within the Air Traffic Control Center will be integrated into the existing training courses for the AC rating listed below. It is estimated that the addition of ADMACS training data into these courses will not increase course lengths.

<b>Title .....</b>	<b>Carrier Air Traffic Control Center Operator</b>
CIN .....	C-222-2012
Model Manager ...	NATTC, Pensacola, Florida

Description ..... The course covers the organization, directives, rules, procedures, phraseology, and equipment related to a CATCC and carrier air operations. It includes coverage of: shipboard organization and interrelations; training and operational directives; Carrier Naval Air Training Operating Procedures Standardization (CV NATOPS) Manual; ships CATCC Doctrine; operation orders and daily air plans; use and operation of CV CATCC radar, the Direct Altitude Indicator Readout system, internal and external communications systems and informational display systems; and the duties, responsibilities and skill requirements associated with different operational and controller positions in the CATCC. The major portion of the course is spent in the CATCC controller and status board keeper watch station and system operations functions under simulated operational conditions.

Location ..... NATTC, Pensacola

Length ..... 42 days

RFT date ..... Currently available

Skill identifier ..... AC 6902

TTE/TD ..... An ADMACS/ISIS simulator is currently being incorporated for CATCC team training.

Prerequisites .....

- AC rating
- C-222-2010, Air Traffic Controller Class A1
- Current NAVMED 6410/2 Clearance Notice (Aeronautical) signed by a Naval Flight Surgeon

**Title ..... Amphibious Air Traffic Control Center Operations**

CIN ..... C-222-2019

Model Manager ... NATTC, Pensacola

Description .....	This course covers the organization, directives, rules, procedures, phraseology, and equipment related to an AATCC and amphibious air operations. Topics include: Overview of Amphibious Operations; Amphibious Task Force Organization and Command Relationships; Overview of Tactical Air Control Squadron Operations and how they relate to operations in an AATCC; Ship Organization including pre-deployment requirements; Overview of Amphibious Air Operations including Operations Control division responsibility for equipment and pre-launch brief, publications, charts, and messages used during amphibious air operations; Publication and use of the Daily Air Plan; Charts used in an AATCC and airspace concerns; Watch station duties and responsibilities in AATCC; Air Traffic control Doctrine; Departure, Assault, and Recovery procedures both helicopter and Vertical/Short Take Off and Landing during Case I, II, and III Operations; Amphibious Air Traffic control related equipment (including AATCC radar, Direct Altitude Indicator Readout system, status boards, and internal and external communications); a lab indoctrination on the use of the voice activated Advanced Shipboard Air Traffic Control System including an overview of training scenarios and voice enrollment. The major portion of the course is spent in the AATCC lab performing all watch station and system operations functions under simulated operational conditions.
Location .....	NATTC, Pensacola
Length .....	33 days
RFT date .....	Currently available
Skill identifier .....	AC 6903
TTE/TD .....	An ADMACS/ISIS simulator will be incorporated for CATCC team training.
Prerequisites .....	<ul style="list-style-type: none"> <li>• AC rating</li> <li>• C-222-2010, Air Traffic Controller Class A1</li> <li>• Current NAVMED 6410/2 Clearance Notice (Aeronautical) signed by a Naval Flight Surgeon</li> </ul>

Follow-on operator training for ADMACS/ISIS manual data input operators not within the AC rating will be satisfied by On-the-Job Training (OJT) at local commands, using both Computer-Based Training (CBT) and the operator manual.

**(2) Maintainer.** Within the ADMACS/ISIS two-level maintenance concept, two groups of maintainers will be used, one for hardware and the other for software. Shipboard ETs with NEC 1677 will accomplish preventive and corrective maintenance of the ADMACS/ISIS hardware. The hardware maintainers will require course J-150-2305 modified to incorporate ADMACS or ISIS information. Software (organizational) will be maintained by shipboard RMs with NEC 2735, Information System Administrator. The training for this maintenance will be integrated into the Class “C” schools listed below. It is estimated that the addition of ADMACS/ISIS maintenance training data into these courses will not increase course lengths.

<b>Title .....</b>	<b>Information Systems Administrator</b>
CIN .....	A-531-0046
Model Manager ...	Fleet Combat Training Center, Atlantic, Dam Neck, Virginia
Description .....	To prepare technical personnel to administer commercial network operating systems, focusing on the following functional areas: (1) Configuration Management: Implement changes, additions, and upgrades to network system configuration; (2) System Management: Administer network services and maintain user accounts, access rights, and directory services; (3) Performance Management: Monitor and take actions to optimize network system performance, ensuring integrity of data reliability of application programs. Graduates will have foundation skills from this core training to apply to specific strand follow-on training.
Location .....	Navy/Marine Corps Intelligence Training Center, Dam Neck, Virginia
Length .....	54 days
RFT date .....	Currently available
Skill identifier .....	NEC 2735
TTE/TD .....	To Be Determined (TBD).
Prerequisite .....	<ul style="list-style-type: none"> <li>• Completed one tour of duty and have a basic understanding of computers, Automated Information System security, operating software and applications</li> </ul>

**Title .....** **Joint Maritime Command Information System  
Maintenance Technician Tactical Advance Computer**

**CIN .....** J-150-2305

**Model Manager ...** Fleet Combat Training Center, Atlantic, Dam Neck,  
Virginia

**Description .....** Provide the knowledge and skills to operate and maintain  
the following systems: JMCIS TAC-N to the lowest  
replaceable unit level of maintenance. Provide core  
training for Command Center Maintenance, SNAP III  
Maintenance and Intelligence Center Maintenance courses  
of instruction.

**Location .....**

- Fleet Combat Training Center, Atlantic, Dam Neck
- Fleet Training Center, San Diego, California

**Length .....** 54 days

**RFT date .....** Currently available

**Skill identifier .....** NEC 1677

**TTE/TD .....** TBD

**Prerequisite .....**

- Paygrade E2-E6 and Graduate of any Technical “A”  
School that teaches basic electronics/electricity.

**c. Student Profiles**

<b>SKILL IDENTIFIER</b>	<b>PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS</b>
AC 6902	° C-222-2012, Carrier Air Traffic Control Center Operator
AC 6903	° C-222-2019, Amphibious Air Traffic Control Center Operator
ET 1677	° J-150-2305, Joint Maritime Command Information System
RM 2735	° A-531-0046, Information System Administrator

**I. ONBOARD (IN-SERVICE) TRAINING**

**1. Proficiency or Other Training.** An Operator Manual was developed to assist operators with program and system familiarity in the ADM/EDM.

**2. Personnel Qualification Standards.** Personnel Qualifications Standards (PQS) will be developed by the PQS development center as required.

**3. Other Onboard or In-service Training Packages.** OJT will be based on the ADM/EDM Operator Manual and CBT and will be provided at all user activities. Formal technical manuals will be developed. Preliminary technical manuals have been delivered to both CVN73 and CVN71.

## **J. LOGISTICS SUPPORT**

### **1. Manufacturer and Contract Numbers.** TBD

### **2. Program Documentation**

- Initial Integrated Logistics Support Plan (ILSP) development, ILSP-82095001, approved 3 Oct 1996.
- Maintenance Plan for ISIS MP M84097002, completion date TBD.
- Maintenance Plan for ADMACS MP M90097001, completion date TBD.

**3. Technical Data Plan.** Preliminary operation and maintenance manuals have been developed. A final operation and maintenance manual with an illustrated parts breakdown will be prepared by NAWCADLKE. It will be developed in accordance with the Technical Manual Contract Requirement generated by the Naval Air Technical Services Facility. The formal technical manuals will be ready for printing and distribution approximately 90 days after receipt of verification of comments. Commercial manuals will be used where applicable.

**4. Test Sets, Tools, and Test Equipment.** Additional ADMACS Common Support Equipment (CSE) requirements will be identified through the Logistic Support Analysis process. Peculiar Support Equipment identified as special support equipment is a standard laptop computer used for setting up the network switch and a DAT tape drive to restore a server disc in case of a hard disk crash. CSE typically consist of monitoring, check-out, and calibrating equipment; special tools; and handling devices. If any system CSE calibration and measurement requirements are identified as this program advances, NAWCADLKE will prepare a Calibration Measurement Requirements Summary.

**5. Repair Parts.** Supply support will be managed under the Program Support Inventory Control Point (PSICP) concept. The PSICP will maintain land-based and shipboard allowance stock levels at Fleet Industrial Supply Centers (FISC) and fleet activities. Fleet users will requisition these items from FISC via Military Standard Requisition and issue procedures. Interim support will be the responsibility of NAWCADLKE until the Material Support Date is established.

**6. Human Systems Integration.** A human engineering effort will be integrated into the program to develop and improve the man-machine interface and to achieve required effectiveness of human performance during system operation and maintenance. The efforts for ADMACS and each of its components will include a fleet project team composed of fleet representatives for whom the equipment will support. This will provide direct feedback on the effectiveness of the

equipment and how it will be used. The human engineering effort will include, but not necessarily be limited to, active participation in the following three major interrelated areas of system development: analysis, design and development, and test and evaluation.

## K. SCHEDULES

**1. Installation and Delivery Schedules.** Installations are currently scheduled for aircraft carriers only. Scheduling for all other locations is yet TBD.

### INSTALLATION SCHEDULE

ACTIVITY	FY00	FY01	FY02	FY03	TOTAL
CV-63 Kitty Hawk			x		1
CVN-65 Enterprise			x		1
CV-67 Kennedy				x	1
CVN-68 Nimitz	x				1
CVN-69 Eisenhower			x		1
CVN-70 Vinson			x		1
CVN-71 Roosevelt			x		1
CVN-72 Lincoln		x			1
CVN-73 Washington		x			1
CVN-74 Stennis		x			1
CVN-75 Truman		x			1
CVN-76 Reagan		x			1

**2. Ready For Operational Use Schedule.** The Initial Operational Capability scheduled date is 31 October 2000. The ADMACS is considered Ready For Operational Use upon installation and check-out.

**3. Time Required to Install at Operational Sites.** Approximately four months will be required for equipment installation, check-out, and grooming.

**4. Foreign Military Sales and Other Source Delivery Schedule.** No Foreign Military Sales are planned at this time.

**5. Training Device and Technical Training Equipment Delivery Schedule.** ADMACS/ISIS AC simulator training will be provided through NECs 6902 and 6903 pipelines at

NATTC, Pensacola, Florida. The CV/CVN version is now being installed at NATTC Pensacola, Florida.

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

**M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS**

<b>DOCUMENT OR NTSP TITLE</b>	<b>DOCUMENT OR NTSP NUMBER</b>	<b>PDA CODE</b>	<b>STATUS</b>
Initial ILSP	ILSP-82095001	PMA251	Approved May 95
Maintenance Plan for ISIS	MP M84097002	PMA251	TBD
Maintenance Plan for ADMACS	MP M90097001	PMA251	TBD
Aircraft Carrier Visual Landing Aid (VLA) System NTSP	A-50-9202A/D		Preliminary Draft Dec 97
Amphibious Assault Ship VLA System NTP	A-50-9203/A		Approved Jan 94
NALCOMIS NTP	S-40-8501C/A		Approved May 94
Future Generation Aircraft Carrier Manpower Study	Z-50-0025		May 97

## APPENDIX A - POINTS OF CONTACT

NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL	TELEPHONE NUMBERS
<b>CAPT F. Coleman</b> Aircraft Carrier Program Sponsor CNO, N885D coleman.frank@hq.navy.mil	<b>COMM:</b> (703) 697-9359 <b>DSN:</b> 227-9359 <b>FAX:</b> (703) 695-7103, DSN 225
<b>AZC Scott Dean</b> NTSP Manager CNO, N889H7 dean.scott@hq.navy.mil	<b>COMM:</b> (703) 604-7714 <b>DSN:</b> 664-7714 <b>FAX:</b> (703) 604-6939
<b>CAPT J. Rhea</b> Director, Enlisted Assignments Division NAVPERSCOM, NPC 40 p40@persnet.navy.mil	<b>COMM:</b> (901) 874-3548 <b>DSN:</b> 882-3548 <b>FAX:</b> (901) 874-2647
<b>CDR F. Lineburg</b> Head, Aviation Enlisted Assignments Branch NAVPERSCOM, NPC 404 p404@persnet.navy.mil	<b>COMM:</b> (901) 874-3691 <b>DSN:</b> 882-3691 <b>FAX:</b> (901) 874-2642
<b>Mr. Robert Zweibel</b> Training Technology Policies CNO, N751 bobzweibel@ntsc.navy.mil	<b>COMM:</b> (703)-614-1344 <b>DSN:</b> 224-1344 <b>FAX:</b> (703) 695-5698, DSN 225
<b>GSCM Lunney</b> Surface Technical Training CNET, T2341 gscm-thomas.lunney@smtp.cnet.navy.mil	<b>COMM:</b> (850) 452-8948 <b>DSN:</b> 922-8948 <b>FAX:</b> (850) 452 4452
<b>CDR E. Hawkins</b> Aviation NSTP Manager CINCLANTFLT, N721 hawkinsel@clf.navy.mil	<b>COMM:</b> (757) 322-0101 <b>DSN:</b> 836-0101 <b>FAX:</b> (757) 322-0141
<b>Mr. R. Long</b> Deputy Director for Training CINCPACFLT, N70 u70@cpf.navy.mil	<b>COMM:</b> (808) 471-8513 <b>DSN:</b> 315-8513 <b>FAX:</b> (808) 471-8596
<b>CDR B. Mack</b> Aviation Manpower CNO, N122C1 n122c1@bupers.navy.mil	<b>COMM:</b> (703) 604-3247 <b>DSN:</b> 664-3247 <b>FAX:</b> (703)-614-5308, DSN 224
<b>CAPT L. Knolhoff</b> Developing Agency NAVAIRSYSCOM, PMA251 knolhoffle@navair.navy.mil	<b>COMM:</b> (301) 757-6825 <b>DSN:</b> 757-6825 <b>FAX:</b> (301)-757-6800

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<p><b>Mr. Art Holland</b>                      Program Team Leader                      NAVAIRSYSCOM, PMA251E                      hollanda@navair.navy.mil</p>	<p><b>COMM:</b> (301) 757-6820  <b>DSN:</b> 757-6820  <b>FAX:</b> (301) 757-6800</p>
<p><b>Mr. Victor Brown</b>                      Logistics Manager                      NAVAIRSYSCOM, AIR 3.1.4C                      brownvl.ntrprs@navair.navy.mil</p>	<p><b>COMM:</b> (301) 757-6814  <b>DSN:</b> 757-6814  <b>FAX:</b> (301) 757-6800</p>
<p><b>ACCM Howard McGrath</b>                      Training Support                      NAVAIRSYSCOM, PMA2053B1                      mcgrathh.jfk@navair.navy.mil</p>	<p><b>COMM:</b> (301) 757-8126  <b>DSN:</b> 757-8126  <b>FAX:</b> (301) 757-6945</p>
<p><b>Mr. Bruce Chiodi</b>                      NAWC Team Leader                      NAWCADLKE, 1.1.X.6.1                      chiodib@lakehurst.navy.mil</p>	<p><b>COMM:</b> (732) 323-1802  <b>DSN:</b> 624-1802  <b>FAX:</b> (732) 323-4029</p>
<p><b>Mr. John Kovacs</b>                      Systems Engineer                      NAWCADLKE, 4.8.1.2                      kovacsj@lakehurst.navy.mil</p>	<p><b>COMM:</b> (732) 323-2891  <b>DSN:</b> 624-2891  <b>FAX:</b> (732) 323-1282</p>
<p><b>Mr. Dave Walter</b>                      Logistics Manager                      NAWCADLKE, 3.1.4.1                      walterd@lakehurst.navy.mil</p>	<p><b>COMM:</b> (732) 323-1817  <b>DSN:</b> 624-1817  <b>FAX:</b> (732) 323-2983</p>
<p><b>Mr. Matt Roberts</b>                      LSA Manager                      NAWCADLKE, 3.2.4.1  <a href="mailto:robertsm@lakehurst.navy.mil">robertsm@lakehurst.navy.mil</a></p>	<p><b>COMM:</b> (732) 323-7934  <b>DSN:</b> 624-7934  <b>FAX:</b> (732) 323-2983</p>
<p><b>Ms. Teri Kostbar</b>                      Training Requirements                      NAWCADLKE, 3.4.1                      kostbat4@lakehurst.navy.mil</p>	<p><b>COMM:</b> (732) 323-1841  <b>DSN:</b> 624-1841  <b>FAX:</b> (732) 323-4064</p>
<p><b>Mr. Art Hyde</b>                      Technical Data, MRC                      NAWCADLKE, 3.3.1                      hydea4@lakehurst.navy.mil</p>	<p><b>COMM:</b> (732) 323-2992  <b>DSN:</b> 624-2992  <b>FAX:</b> (732) 323-2983</p>
<p><b>Ms. Janice Walsh</b>                      Supply Support, Item Manager                      NAVICP, 03323.58</p>	<p><b>COMM:</b> (215) 697-5412  <b>DSN:</b> 442-5412  <b>FAX:</b></p>

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<b>Mr. Phil Szczyglowski</b> Competency Manager NAVAIRSYSCOM, 3.4.1 szczyglowspr@navair.navy.mil	<b>COMM:</b> (301) 757-9182 <b>DSN:</b> 757-9182 <b>FAX:</b> (301) 342-4723, DSN 342
<b>Mr. Bruce Colby</b> Front End Analysis Manager NAVAIRSYSCOM, 3.4.1 colbybc@navair.navy.mil	<b>COMM:</b> (301) 757-2635 <b>DSN:</b> 757-2635 <b>FAX:</b> (301) 342-4723, DSN 342
<b>AFCM M. Breboneria</b> Front End Analysis Coordinator NAVAIRSYSCOM, 3.4.1 breboneriamn@navair.navy.mil	<b>COMM:</b> (301) 757-9184 <b>DSN:</b> 757-9184 <b>FAX:</b> (301) 342-4723, DSN 342
<b>Mr. Gary Barnes</b> MPT Analyst (NTSP Author) NAVAIRSYSCOM, 3.4.1 barnesgd@navair.navy.mil	<b>COMM:</b> (301) 757-9199 <b>DSN:</b> 757-9199 <b>FAX:</b> (301) 342-4723, DSN 342