INITIAL NAVY TRAINING SYSTEM PLAN FOR THE DENTIFICATION EDIEND OR FOR

IDENTIFICATION FRIEND OR FOE INTERROGATOR TRANSPONDER TEST SET

SEPTEMBER 1997

EXECUTIVE SUMMARY

This Initial Navy Training System Plan for the Identification Friend or Foe Interrogator/ Transponder Test Set (IFFITTS) was developed by the Naval Air Systems Command (3.4.1) using the Training Planning Process Methodology. It provides an early-on estimate of manpower, personnel, and training requirements needed to support the employment concept currently being considered. It also contains appropriate and pertinent data required to make accurate decisions concerning training alternatives for the IFFITTS.

The IFFITTS program will be procured as support equipment and has no acquisition program classification. The program is in the Engineering and Manufacturing Development phase; Milestone II was reached during third quarter FY96 and Milestone III is scheduled for fourth quarter FY98. Initial Operational Capability is scheduled for first quarter FY99.

The IFFITTS will replace the AN/APM-349, AN/APM-378, and AN/APM-424 test sets which are difficult and extremely costly to support due to production status, low reliability under new operational requirements, and ever increasing parts obsolescence problems. The IFFITTS will be of a modified Non-Developmental Item design consisting of several Commercial Off-The-Shelf equipment and a previously designed controlling section. As such, little can be done to influence the design of the equipment.

The IFFITTS is a portable, hand-held test set capable of performing flight line carrier deck rapid indication of the operational readiness of AIMS MK XII transponders and AIMS 65-1000 interrogators. Testing will be accomplished through radiated or direct coupled testing of MK XII transponder and interrogator modes 1, 2, 3/A, C, Identification Friend or Foe Mode 4 and transponder Mode S.

Training requirements analysis based on the present IFFITTS employment and maintenance concepts indicates no new formal courses will be required. Initial operator training will be conducted by the selected contractor at the Naval Air Warfare Centers Patuxent River, Maryland and Indianapolis, Indiana to Technical and Operational Evaluation personnel and Naval Aviation Engineering Services Unit (NAESU) personnel. All organizational level Navy Aviation Electronics Technicians and equivalent Marine Corps personnel will receive their initial IFFITTS operator training at their respective commands from NAESU representatives. Follow-on (replacement) IFFITTS operator training requirements will be satisfied by including the pertinent IFFITTS data in existing Type/Model/Series organizational level courses. If intermediate level maintenance is to be performed by organic personnel, it is estimated this training will only be minimal in nature and within the capability of NAESU.

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LIST OF ACRONYMS

AEW Airborne Early Warning

AMIST Aviation Maintenance In-Service Training

AMTCS Aviation Maintenance Training Continuum System

AT Aviation Electronics Technician

BIT Built-In Test

CBT Computer-Based Training
COTS Commercial Off-The-Shelf

FST Fleet Support Team

IFFITTS Identification Friend or Foe Interrogator/Transponder Test Set

IOC Initial Operational Capability
ISS Interim Supply Support

MATMEP Maintenance Training Management and Evaluation Program

MCAS Marine Corps Air Station
MOS Military Occupational Specialty

MSD Material Support Date

MTIP Maintenance Training Improvement Program

MTU Maintenance Training Unit

NAESU Naval Aviation Engineering Services Unit NAMP Naval Aviation Maintenance Program

NAMTGD Naval Air Maintenance Training Group Detachment

NAS Naval Air Station

NAVICP Naval Inventory Control Point

NAWCAD Naval Air Warfare Center-Aircraft Division

NEC Navy Enlisted Classification NTTU Naval Technical Training Unit

SAIP Spares Acquisition Integrated with Production

TYCOM Type Commander

PREFACE

This is the first iteration of the Initial Navy Training System Plan (NTSP) for the Identification Friend or Foe Interrogator/Transponder Test Set upgrade. It includes the proposed training sites, training equipment, training course information, and billet and personnel requirements.

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.

Date: September 1997

PART I - TECHNICAL PROGRAM DATA

A. TITLE-NOMENCLATURE-PROGRAM

- **1. Title-Nomenclature-Acronym.** Identification Friend or Foe Interrogator/Transponder Test Set (IFFITTS)
 - 2. Program Element. NA.

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
OPO Resource Sponsor
Developing Agency
Training Agency CINCLANTFLT (N721) CINCPACFLT (N321) CNET (N252) COMNAVRESFOR
Training Support Agency
Manpower and Personnel Mission Sponsor
Director of Naval Training
Commander, Reserve Program Manager
Marine Corps Combat Development Command Manpower Management

D. SYSTEM DESCRIPTION

- 1. Operational Uses. The Identification Friend or Foe Interrogator/Transponder Test Set (IFFITTS) will be used at organizational level maintenance activities, day or night, ashore and afloat. The equipment will be assigned to intermediate level maintenance activities and checked out by organizational level maintenance activities on a sub-custody basis. The intermediate level maintenance activity will be responsible for maintenance of the IFFITTS. The primary purpose of the equipment will be identification of Unit Under Test operational status via a Go/No-Go status check.
- **2. Foreign Military Sales.** No Foreign Military Sales or other procurements are planned for the IFFITTS at this time.
- **E. DEVELOPMENTAL TEST AND OPERATIONAL TEST.** Developmental and operational testing will commence concurrently during the second quarter FY98 at Naval Air Warfare Center-Aircraft Division (NAWCAD) Patuxent River, Maryland, and NAWCAD Indianapolis, Indiana.
- **F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED.** The IFFITTS will replace the AN/APM-349, AN/APM-378, and AN/APM-424 test sets.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The IFFITTS will be used at organizational level maintenance activities, both ashore and afloat, to provide rapid pre-flight go/no-go testing of the operational status of AIMS MK XII transponder systems and AIMS MK 65-1000 interrogator systems. The IFFITTS will be a hand-held single case design. Testing will be accomplished through radiated or direct coupled testing of MK XII transponder and interrogator modes 1, 2, 3/A, IFF mode 4 and transponder mode S.

2. Physical Description

Volume	0.8 cubic feet
Height	10.0 inches
Width	15.0 inches
Depth	9.0 inches
Weight	less than 25 pounds
Operational Weight	less than 18 pounds (test set with battery and antenna
	installed)

3. New Development Introduction. Procured as a Non-Developmental Item from contractor.

- 4. Significant Interfaces. None.
- 5. New Features, Configurations, or Material. The Mode S beacon system is a combined secondary surveillance radar and ground-air-ground data link system capable of providing the aircraft surveillance and communication necessary to support Air Traffic Control automation in dense traffic environments. The fundamental difference between Mode S and standard identification modes 1, 2, 3/A and C, is the manner by which aircraft are addressed, allowing selection of which aircraft will respond to an interrogation. Mode S has been used in domestic and foreign commercial airspace since 1988. Secure versions of the Mode S waveform are not currently in service. Message traffic from COMNAVAIRPAC to NAVAIRSYSCOM documented a joint Type Commander (TYCOM) request for flight-line test set procurement to include Mode S functional testing capability with full integrated logistics support. Debate over the Mode S requirements for military transponder systems exists. Currently, the AN/APX-100 transponder is receiving an upgrade to include the Mode S waveform for use with Air National Guard C-130s. The F/A-18C/D/E/F combined interrogator transponder (AN/APX-111) has provisions for expandability to Mode S by the year 2000. All in-production Tri-service military transponders are seriously being considered for upgrade to Mode S. None of the transponder test sets currently fielded in the Navy inventory have the capability to test the Mode S waveform. The IFFITTS will have the ability to test the Mode S waveform.

H. CONCEPTS

- **1. Operational Concept.** The IFFITTS will be operated by Navy or Marine Corps personnel assigned to organizational level activities in Work Center 210. These individuals will use IFFITTS to perform flight-line carrier deck rapid indication of the operational readiness of AIMS MK XII transponders and AIMS 65-1000 interrogators.
- **2. Maintenance Concept.** Based on the current employment concept, it is anticipated that the IFFITTS will employ, at a minimum, a two-level maintenance concept in accordance with OPNAVINST 4790.2F (Naval Aviation Maintenance Program (NAMP)). The two levels of maintenance will be organizational level and depot level. Depending on the contractor selected to produce the IFFITTS, a third level of maintenance may be required. The third level will be the intermediate level.
- **a. Organizational.** Organizational level maintenance activities (i.e., fleet squadrons) will be the "users" of the IFFITTS. Under the present design concept, organizational level activities will not perform scheduled or unscheduled maintenance on the IFFITTS. A routine preoperational Built-In Test (BIT) will be performed by organizational level users prior to making any flight-line carrier deck operational readiness checks of AIMS MK XII transponders or AIMS 65-1000 interrogators. If the BIT indicates the IFFITTS is not operating properly, the unit will be returned to the intermediate level maintenance activity or depot level activity for repair.
- **b. Intermediate.** As previously stated, depending on the contractor selected to produce the IFFITTS, it may require organic intermediate level maintenance. If so, this

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maintenance will be performed by Navy or Marine Corps personnel assigned to intermediate level Work Center 670 with Navy Enlisted Classifications (NEC) code 6673 or Military Occupational Specialty (MOS) 6462. The intermediate level maintenance functions that will be performed on the IFFITTS at this level are described in the following subparagraphs:

- (1) Corrective Maintenance. Corrective maintenance will consist of the following: fault isolate to repair or replace Weapons Replaceable Assemblies; fault isolate to replace or repair chassis mounted components; preventive maintenance actions; and corrosion inspection and control actions.
- (2) Calibration. Calibration requirements for this equipment will be determined by the selected contractor and Naval Warfare Assessment Center, Corona, California. Pertinent information will be provided to the government in the form of Calibration Measurement Requirements Summary. The IFFITTS will have a minimum calibration interval of 12 months. The Integrated Calibration Procedures will be developed by the Naval Warfare Assessment Center.
- **c. Depot.** There will be no scheduled maintenance at the depot level. Unscheduled maintenance at this level will normally consist of rework, overhaul of the end item, and repair of Shop Replaceable Assemblies determined through the Logistics Support Analysis process to be beyond the intermediate level maintenance capability and cost effective to be repaired at depot level. A Level of Repair Analysis will be performed by the contractor to determine whether and/or where depot facilities are required, and the most cost effective means of sustaining the equipment. In the event the selected contractor employs an organizational to depot level maintenance concept (i.e., two level maintenance concept), intermediate and depot level maintenance functions will be performed at the depot level maintenance activity.
- **d. Interim Maintenance.** It is expected that all required support will be in place at Initial Operational Capability (IOC), third quarter FY98. A transition conference will be held at the Naval Inventory Control Point (NAVICP) Philadelphia, the year prior to Material Support Date (MSD) to certify IFFITTS readiness. Trained operators, necessary technical documentation (including maintenance publications and calibration procedures if required), and spare parts (acquired concurrently with production and centrally located at interim supply support warehouses) will be in place. With all the above elements in place, organic support is considered to be achieved.
- **e.** Life Cycle Maintenance Plan. A Life Cycle Cost estimate has been completed by the NAWCAD Indianapolis Cost Analysis Estimating Competency Center and has determined that a class "C" estimate is appropriate for this program.
- **3. Manning Concept.** Preliminary assessment of the impact of fielding the IFFITTS equipment indicates no requirement to change existing manning or skill levels. Personnel in the appropriate Navy Aviation Electronics Technician (AT) rating, and Marine Corps Aviation Electronics MOSs currently man the work centers which will utilize the equipment. The NEC and MOS code requirements for specific aircraft will not change. The equipment is designed to be

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user friendly. Upon receiving training, existing personnel should be able to easily operate and maintain the IFFITTS.

4. Training Concept

- **a.** Initial Training. Initial training will be developed and taught by the selected contractor and presented to Technical/Operational Evaluation and Naval Aviation Engineering Services Unit (NAESU) personnel.
- (1) Operator. Both Navy and Marine Corps Fleet squadron personnel will receive IFFITTS operator training from local NAESU personnel.
- (2) Maintenance. The need for organic maintenance training depends on the maintenance concept used by the contractor selected to produce the IFFITTS. If the selected contractor employs a traditional three level maintenance concept, initial training for intermediate level maintenance will be required. Since this training is expected to be minimal, it is anticipated that NAESU personnel could provide it to intermediate level maintenance personnel.

b. Follow-on Training

(1) **Operator.** Follow-on IFFITTS operator training will be required for all AT and Marine Corps Aviation Electronics personnel in fleet squadrons. Because of the minimal nature of this training, the most cost effective method of satisfying this requirement is to add IFFITTS training to existing organizational level courses. The following is a listing of the organizational level training courses that will require modification to include IFFITTS data:

Title	E-2C Initial Basic AEW Systems Analyst Organizational		
	Maintenance		
CIN	C-102-9480 (Part of training track D-102-0327)		
Model Manager.	Naval Air Maintenance Training Group Detachment (NAMTGD),		
	Naval Air Station (NAS), Norfolk		
Description	Upon completion of this course, ATs will have acquired sufficient		
	knowledge of the Integrated Weapons Systems of the E-2C		
	aircraft, including operation and maintenance, to perform, under		
	close supervision, organizational level maintenance in the squadron		
	working environment.		
Location	Maintenance Training Unit (MTU) 1026, NAS Norfolk		
Length	75 days		
RFT date	Currently available		
TTE/TD	Current course curriculum provides training on the AN/USM-424		
	or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will		
	require replacement of these test sets at the MTU.		
Prerequisite	C-100-2018, Avionics Technician O-Level Class A1		
Skill identifier	AT NEC 8805 upon completion of training track.		

Title...... E-2C Advanced Airborne Early Warning (AEW) Systems

Analyst Organizational Maintenance

CIN...... C-102-0321 (Part of training track D-102-0321)

Model Manager. NAMTGD, NAS Norfolk

Description...... Provides personnel with the minimum requirements leading to

assignment of the AT NEC 8305.

Location...... MTU 1026, NAS Norfolk

Length..... 82 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... D-102-0327, E-2C Initial Basic AEW Systems Organizational

Level Maintenance

Skill identifier.. AT NEC 8305 upon completion of training track.

Title...... KC-130F/R/T Communication Navigation and Identification

Organizational Maintenance

CIN..... C-102-4505 (Part of training track E-102-4505)

Model Manager. NAMTGD, Marine Corps Air Station (MCAS) El Toro

Description...... Upon completion of this course, Avionics Electronic Technicians

will have sufficient knowledge/theory of the Communication, Navigation, and Identification Systems of the KC-130 aircraft, to include system analysis, troubleshooting techniques, and test equipment operation, to perform under close supervision,

organizational maintenance in the squadron working environment.

Location...... MTU 1078, MCAS El Toro

Length..... 26 days

RFT date...... Currently available

TTE/TD...... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisites.... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier.. AT NEC 8318 upon completion of training track.

Title...... KC-130 Aircraft Communication/Navigation Systems

Technician

CIN...... C-102-4511 (Part of training track M-102-0451)

Model Manager. NAMTGD, MCAS El Toro

Description..... This course is designed to provide the KC-130 aircraft

Communication/Navigation technician the knowledge necessary

for the maintenance of the KC-130 aircraft COM/NAV systems.

Location...... MTU 1078, MCAS El Toro

Length..... 46 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier.. AT NEC 8318 or MOS 6316 upon completion of training track.

Title...... P-3C Avionics (Career) Organizational Level Maintenance

CIN...... C-102-9587 (Part of training track D-102-1132)

Model Manager. NAMTGD, NAS Jacksonville

Description...... Upon completion of this course, ATs will have sufficient

knowledge/skills of the P-3C Update III Integrated Avionics Systems, using analysis and troubleshooting techniques, to perform, under limited supervision, organizational level maintenance in the squadron working environment.

Location...... MTU 1011, NAS Jacksonville

Length..... 103 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... D-102-1029, P-3C Initial Weapons Systems Organizational

Maintenance

Skill identifier.. AT NEC 8319 upon completion of training track

Title...... P-3C Integrated Avionics Systems CP-901(V) ASQ 114(V)

Integrated (Initial) Organizational Maintenance

CIN...... C-102-9586 (Part of training track D/E 102-1029)

Model Manager. VP-30, NAS Jacksonville

Description...... To train selected AT personnel with the minimum techniques

required to perform maintenance at the organizational level on the

Avionics Weapons Systems installed in the P-3C.

Location...... MTU 1011, NAS Jacksonville

MTU 1012, NAS Whidbey Island

Length..... 40 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisites..... C-100-2018, Avionics Technician O-Level Class A1

Skill identifier.. AT NEC 8819 upon completion of training track

Title..... EA-6B COM/NAV/Radar Sets Maintenance Career

Organizational Maintenance

CIN...... C-102-9741 (Part of training track E-102-1823)

Model Manager. NAMTGD, NAS Whidbey Island

Description..... Provides fleet maintenance personnel with the necessary

information to troubleshoot and maintain the EA-6B Communication/Navigation and Radar equipment.

Location...... MTU 1001, NAS Whidbey Island

Length..... 19 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... E-102-1827, EA-6B Initial ICAP II/Block 86 COM/NAV/Radar

Set Organizational Maintenance

Skill Identifier.. AT NEC 8332 upon completion of training track

Title...... EA-6B COM/NAV/Radar Systems (Initial) Organizational

Maintenance

CIN...... C-102-9740 (Part of training track E-102-1827)

Model Manager. NAMTGD, NAS Whidbey Island

Description..... Provides fleet maintenance personnel with the necessary

information to troubleshoot and maintain the EA-6B Communication/Navigation and Radar equipment.

Location...... MTU 1001, NAS Whidbey Island

Length..... 12 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier.. AT NEC 8832 or MOS 6313 upon completion of training track

Title..... F-14D Avionics Technician (Initial) Organizational

Maintenance

CIN...... C-102-9898 (Part of training track D/E-102-1625)

Model Manager. NAMTGD, NAS Oceana

Description...... Upon completion of this course, ATs will have acquired sufficient

knowledge of the Integrated Weapons Systems of the F-14D aircraft, including operation and maintenance, to perform, under close supervision, organizational maintenance in the squadron

working environment.

Location...... MTU 1107, NAS Oceana

MTU 1008, NAS Miramar

Length..... 33 days

Currently available RFT date.....

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... C-100-2018, Avionics Technician O-Level Class A1 Skill Identifier.. AT NEC 8835 upon completion of training track

F-14D Avionics Technician (Career) Organizational Title.....

Maintenance

CIN..... C-102-9899 (Part of training track D/E-102-1630)

Model Manager. NAMTGD, NAS Oceana

Description..... Provide necessary training required to perform organizational level

maintenance on the F-14D.

Location..... MTU 1107, NAS Oceana

MTU 1008, NAS Miramar

81 days Length.....

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

D-102-1625, F-14D Avionics Systems Initial Organizational Level Prerequisite.....

Maintenance

Skill Identifier.. AT NEC 8335 upon completion of training track

Title..... F-14A/B Avionics System Initial Organizational Maintenance

C-102-9904 (Part of training track D/E-102-1624) CIN.....

NAMTGD, NAS Oceana Model Manager.

Description..... Upon completion of this course, ATs will have sufficient

> knowledge/skills, including component location characteristics, basic testing, and servicing, to safely perform, under supervision, organizational level maintenance on the F-14A/B Integrated

Avionics Systems in the squadron working environment.

MTU 1107, NAS Oceana Location.....

MTU 1008, NAS Miramar

Length..... 40 days

RFT date..... Currently available

Current course curriculum provides training on the AN/USM-424 TTE/TD.....

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... C-100-2018, Avionics Technician O-Level Class A1 Skill Identifier.. AT NEC 8845 upon completion of training track

F-14A/B Career Avionics System Organizational Maintenance Title.....

CIN..... C-102-9905 (Part of training track D/E-102-1623)

Model Manager. NAMTGD, NAS Oceana

Description..... Upon completion of this course, ATs will have sufficient

knowledge/theory of the Avionics Systems of the F-14A/B aircraft,

including system analysis and troubleshooting techniques to

perform, under close supervision, organizational maintenance in the

squadron environment.

MTU 1107, NAS Oceana Location.....

MTU 1008, NAS Miramar

Length..... 67 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

D-102-1624, F-14A/B Avionics System Initial Organizational Prerequisite.....

Maintenance

Skill Identifier.. AT NEC 8345 upon completion of training track

Title..... F/A-18 Avionics Systems (Initial) Organizational Maintenance

CIN..... C-102-9964 (Part of training track D/E-102-0622)

NAMTGD, NAS Lemoore Model Manager.

Description..... Provides minimum required training to perform organizational

apprentice level maintenance on the F/A-18 aircraft.

Location..... MTU 1038, NAS Lemoore

MTU 1039, NAS Cecil Field

Length..... 54 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier.. AT NEC 8842 or MOS 6317 upon completion of training track

Title...... F/A-18 Career Electronic Systems Organizational Maintenance

CIN..... C-102-9963 (Part of training track D/E-102-0630)

NAMTGD, NAS Lemoore Model Manager.

Description..... This course defines the minimum required knowledge and skills to

the assignment as an F/A-18 Integrated Electronics Systems

Technician, NEC 8342.

MTU 1038, NAS Lemoore Location.....

MTU 1039, NAS Cecil Field

Length...... 33 days

RFT/Date...... Currently available

TTE/TD...... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisites.... D/E-102-0622, F/A-18 Initial Electronic Systems

Skill Identifier.. AT NEC 8342

Title...... AV-8B Aircraft COM/NAV/Identification ECM Weapon

System Specialist Organizational Maintenance

CIN...... C-102-9895 (Part of training track M-102-0122)

Model Manager. VMAT 203 FREST, MCAS Cherry Point

Description..... Provides designated personnel with the technical and practical

knowledge skills required to operate, troubleshoot and maintain the

Communication, Navigation, Identification and Electronic Countermeasures Systems of the AV-8B aircraft at the

organizational level.

Location...... MTU 1006, MCAS Cherry Point

Length...... 93 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier.. MOS 6315 upon completion of training track.

Title...... E-6A Mission Avionics Systems Organizational Maintenance

CIN...... C-102-4502 (Part of training track E-102-0425)

Model Manager. NAMTGD, Tinker AFB, Oklahoma

Description...... Provides ATs with sufficient knowledge and theory of the E-6A

Mission Avionics System, including system analysis and

troubleshooting techniques to perform, under close supervision, organizational maintenance in the squadron and airborne working

environment.

Location...... MTU 1080, Tinker AFB

Length...... 170 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisites..... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier... AT NEC 8343

Title...... S-3B Initial Avionics Systems Organizational Maintenance

CIN...... C-102-9691 (Part of training track D/E-102-1728)

Model Manager. NAMTGD, NAS Jacksonville

Description...... Upon completion of this course, ATs will have acquired sufficient

knowledge of the Integrated Weapons Systems of the S-3B aircraft,

including operation and maintenance, to perform, under close supervision, organizational maintenance in the squadron working

environment.

Location...... MTU 1037, NAS Cecil Field

MTU 1036, NAS, North Island

Length..... 26 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018 Avionics Technician O-Level Class A1

Skill Identifier... AT NEC 8847 upon completion of training track

Title...... S-3B Career Avionics Systems Organizational Maintenance

CIN...... C-102-9690 (Part of training track D-102-1741)

Model Manager... NAMTGD, NAS Jacksonville

Description...... Upon completion of this course, ATs will have sufficient

knowledge/skills, including operation, location and repair procedures, to perform under supervision, organizational maintenance on the S-3B Avionics Systems, in the squadron

environment.

Location...... MTU 1037, NAS Jacksonville

Length...... 68 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424

or AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... D-102-1728, S-3B Initial Avionics Systems Organizational

Maintenance

Skill Identifier.... AT NEC 8347 upon completion of training track

Title...... CH-46 Communication Navigation Identification Systems

Organizational Maintenance

CIN...... C-102-3416 (Part of training track M-102-2424)

Model Manager. HMT-204 FREST, MCAS New River

Description...... Upon completion of this course, Avionics Technicians will have

sufficient knowledge and theory of the Communication, Navigation, and Identification Systems of the H-46 aircraft, including system analysis and troubleshooting techniques, to perform, under close supervision, organizational maintenance in the squadron

environment.

Location...... MTU 1027, MCAS New River

Length..... 12 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1

Skill identifier... MOS 6322 upon completion of training track

Title...... H-46 Aircraft Communication, Navigation and Identification

(Initial) Organizational Maintenance

CIN...... C-102-3420 (Part of training track E-102-2422)

Model Manager. NAMTGD, NAS North Island

Description...... Provides AT maintenance personnel the basic skills/knowledge

training to perform organizational apprentice level maintenance on

the H-46 helicopter.

Location...... MTU 1028, NAS North Island

Length..... 5 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1

Skill identifier.... AT NEC 8879 upon completion of training track

Title...... H-46 Aircraft Communication, Navigation and Identification

Systems Organizational Maintenance

CIN...... C-102-3416 (Part of training track M-102-2425)

Model Manager. FREST 204, MCAS New River

Description...... Upon completion of this course, Avionics Technicians will have

sufficient knowledge/theory of the Communication, Navigation, and Identification Systems of the H-46 aircraft, including system analysis and troubleshooting techniques, to perform, under close supervision,

organizational maintenance in the squadron environment.

Location...... MTU 1027, MCAS New River

Length..... 12 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1 Skill Identifier... AT NEC 8379 upon completion of training track

Title...... H-46 Aircraft Communication Navigation and Identification

Systems Organizational Maintenance

CIN...... C-102-3416 (Part of training track E-102-2420)

Model Manager. NAMTGD, NAS North Island

Description...... Upon completion of this course, Avionics Technicians will have

sufficient knowledge and theory of the Communication, Navigation, and Identification Systems of the H-46 aircraft, including system analysis and troubleshooting techniques, to perform, under close

supervision, organizational maintenance in the squadron

environment.

Location...... MTU 1028, NAS North Island

Length..... 12 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite..... E-102-2422 CH-46D Electronic Systems Organizational Initial

Maintenance Technician

Skill Identifier... AT NEC 8379 upon completion of training track

Title...... MH/CH-53 Communication/Navigation and Identification

Systems (Initial) Organizational Maintenance

CIN...... C-102-9445 (Part of training track D-102-2735)

Model Manager. NAMTGD, NAS Norfolk

Description....... Upon completion of this course, Aviation Electronics Technicians

will have sufficient knowledge and skills of the MH/CH-53

helicopter components, their location and function, including basic ground handling and safety precautions, to perform, under close supervision, organizational maintenance in the squadron working

environment.

Location...... MTU 1031, NAS Norfolk

Length...... 26 days

RFT date...... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier... AT NEC 8803 upon completion of training track

Title...... MH/CH-53E Communication/Navigation and Identification Systems Integrated Organizational Maintenance

CIN...... C-102-9444 (Part of training track D-102-2725)

Model Manager.. NAMTGD, NAS Norfolk

Description...... Provides training for newly assigned personnel, in all aspects of the

Communication, Navigation, and Identification Systems of the MH-

53 and CH-53 helicopters, including theory of operation and maintenance procedures, to perform, under close supervision, organizational maintenance in the squadron working environment.

Location...... MTU 1031, NAS Norfolk

Length...... 33 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... D-102-2735, MH-53 Initial COM/NAV/IDENT (CNI) Systems

Organizational Maintenance

Skill Identifier... AT NEC 8303 upon completion of training track

Title...... CH-53A/D/E Communication/Navigation Systems Integrated

Organizational Maintenance

CIN...... C-102-9945 (Part of training track M-102-2731)

Model Manager. HMT-302 FREST, MCAS Tustin

Description...... Upon completion of this course, Aviation Electronics Technicians

will have sufficient knowledge and skills of the CH-53 helicopter components, their location and function, including basic ground

handling and safety precautions, to perform, under close

supervision, organizational maintenance in the squadron working

environment.

Location...... MTU 1032, MCAS Tustin

Length...... 40 days

RFT date..... Currently available

TTE/TD...... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier.... AT NEC 8303 and MOS 6323 upon completion of training track

Title...... SH-60B LAMPS MKIII Weapon Systems Technician (Initial)

Organizational Maintenance Course

CIN...... C-102-9406 (Part of training track D-102-08xx)

Model Manager. NAMTGD, NAS Mayport

Description...... This course provides basic knowledge and troubleshooting theory

required for assignment as a SH-60 Electronics System Maintenance

Technician.

Location...... MTU 1066, NAS Mayport

Length..... 66 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1

Skill Identifier.... AT NEC 8876 upon completion of training track

Title...... SH-60F/HH -60H Electronic Systems (Initial) Organizational

Maintenance

CIN...... C-102-9408 (Part of training track D/E-102-0823)

Model Manager.. NAMTGD, NAS Jacksonville

Description...... To provide ATs training in the organizational maintenance of the

SH-60F and HH-60H electronic systems.

Location...... MTU 1005, NAS Jacksonville

MTU 1067, NAS North Island

Length..... 26 days

RFT date..... Currently available

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1 Skill Identifier.... AT NEC 8878 upon completion of training track

Title...... SH-60F/ HH-60 Electronic Systems Organizational

Maintenance

CIN...... C-102-9407 (Part of training track D/E-102-0822)

Model Manager. NAMTGD, NAS Jacksonville

Description...... This course defines the minimum required knowledge and skills,

including theory of operation and troubleshooting procedures of the SH-60F Electronics System, required to perform maintenance at the

organizational level within a squadron environment.

Location...... MTU 1005, NAS Jacksonville

MTU 1067, NAS North Island

Length...... 39 days

RFT date..... Currently available

TTE/TD............ Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... D-102-0823, SH-60F/HH-60H Initial Electronic Systems

Organizational Maintenance

Skill Identifier.... AT NEC 8378 upon completion of training track

Title...... H-1 Communication/Navigation and Identification and Related

Systems Integrated Organizational Maintenance

CIN...... C-102-9345 (Part of training track M-102-2024)

Model Manager.. HMT-303, MCAS Camp Pendleton

Description...... Provides training for newly assigned personnel, in all aspects of the

communications, navigation, identification and related systems of the

H-1 aircraft.

Location...... MTU 1030, MCAS Camp Pendleton

RFT date..... Currently available

Length..... 22 days

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1

Skill identifier.... MOS 6324 upon completion of training track.

Title...... H-1 Communication/Navigation/Identification and Related

Systems Integrated Organizational Maintenance

CIN...... C-102-9354 (Part of training track M-102-2021)

Model Manager.. HMT-303, MCAS Camp Pendleton

Description...... Provides training for newly assigned personnel, in all aspects of the

communications, navigation, identification and related systems of the

UH-1N aircraft.

Location...... MTU 1030, MCAS Camp Pendleton

RFT date..... Currently available

Length..... 22 days

TTE/TD..... Current course curriculum provides training on the AN/USM-424 or

AN/APM-378 IFF Test Sets. Introduction of the IFFITTS will

require replacement of these test sets at the MTU.

Prerequisite...... C-100-2018, Avionics Technician O-Level Class A1 Skill identifier.... AT NEC 8380 upon completion of training track

(2) **Maintainer.** If the selected IFFITTS contractor employs a traditional three level maintenance concept, organic intermediate level maintenance personnel will require maintenance training. It is estimated that this maintenance training will be minimal and can be provided informally by local NAESU personnel. If IFFITTS requires organic calibration as expected, intermediate level maintenance personnel will need to attend the calibration course

listed below. As intermediate level Work Center 670 personnel already attend this course, this requirement will not change with the introduction of IFFITTS.

Title	Intermediate Level Calibration of Physical/Dimensional Test
	Measuring Systems
CIN	C-198-2012
Model Manager	Naval Technical Training Unit (NTTU), Keesler AFB, Biloxi,
	Mississippi
Description	Upon completion of this course, Navy and Marine Corps technicians will have sufficient knowledge and theory to perform, under limited supervision, intermediate level calibration of physical and dimensional test and measuring systems in an intermediate level maintenance environment.
Location	NTTU, Keesler AFB
Length	124 days (estimated)
RFT date	Currently available
TTE/TD	Basic electronic test and measuring equipment
Prerequisites	C-100-2017, Avionics Technician Intermediate Level Class A1
Skill Identifier	AT NEC 6673 or MOS 6462

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
AT 6587, 8238, 8803, 8303, 8805, 8305, 8806, 8306, 8318, 8819, 8319, 8832, 8332, 8845, 8345, 8842, 8342, 8343, 8847, 8376, 8376, 8378, 8878, 8379, 8879, 8380	C-100-2020, Avionics Common Core Class A1 C-100-2018, Avionics Technician Organizational Level Class A1
MOS 6313, 6315, 6316, 6317, 6322, 6323, 6324, and 6325	C-100-2020, Avionics Common Core Class A1 C-100-2018, Avionics Technician O-Level Class A1
AT 6673	C-100-2020, Avionics Common Core Class A1 C-100-2017, Avionics Technician Intermediate Level Class A1

(d) **Training Pipelines.** No new training tracks or pipelines will be required due to the introduction of the IFFITTS.

I. ONBOARD (IN-SERVICE) TRAINING

- 1. Proficiency or Other Training Organic to the New Development. Training Devices and equipment will be provided as part of the IFFITTS acquisition, with delivery to the prospective training sites planned concurrently with the first equipment deliveries.
- a. Maintenance Training Improvement Program. The Maintenance Training Improvement Program (MTIP) will be used to establish an effective and efficient training system that is responsive to fleet training requirements. MTIP is a training management tool that, through diagnostic testing, identifies individual training deficiencies at both the organizational and intermediate levels of maintenance. MTIP is the comprehensive testing of one's knowledge. It consists of a bank of test questions that are managed through automated data processing. The Deputy Chief of Staff for Training will assist in the development of MTIP by providing those question banks (software) already developed by the Navy. MTIP will be implemented in accordance with OPNAVINST 4790.2F. MTIP will allow increased effectiveness in the application of training resources through identification of skills and knowledge deficiencies at the activity, work center, or individual technician level. Remedial training will be concentrated where needed to combat identified skill and knowledge shortfalls.
- b. Aviation Maintenance In-Service Training. Aviation Maintenance In-Service Training (AMIST) is intended to support the Fleet training requirements now satisfied by MTIP, and in that sense is the planned replacement. However, it is structured very differently, and will function as an integral part of the new Aviation Maintenance Training Continuum System (AMTCS) that will replace the existing aviation maintenance training structure. AMIST will provide standardized instruction to bridge the training gaps between initial and career training. With the implementation of AMIST, the technician will be provided the training required to maintain a level of proficiency necessary to effectively perform the required tasks to reflect a career progression.

AMTCS redesigns the aviation training process (training continuum), and introduces Computer-Based Training (CBT) throughout the Navy technical training process. The application and adoption of recent advances in computer hardware and software technology have enabled CBT with its basic elements of Computer Managed Instruction (CMI), Computer Aided Instruction (CAI), and Interactive Courseware (ICW) to be integrated into the training continuum and provide essential support for standardizing technical training.

- **2. Personnel Qualification Standards.** Specific aircraft Communications/Navigation/IFF Personnel Qualifications Standards will be updated to include the introduction of the IFFITTS.
- **3. Other Onboard or In-Service Training Packages.** Marine Corps on-board training is based on the current series of MCO P4790.12, Individual Training Standards System and Marine Training Management Evaluation Program (MATMEP). This program is designed to meet Marine Corps, as well as Navy OPNAVINST 4790.2F, maintenance training requirements. It is a performance-based, standardized, level-progressive, documentable, training management and evaluation program. It identifies and prioritizes task inventories by MOS through a front-end analysis process that identifies task, skill, and knowledge requirements of each MOS. MTIP

questions coupled to MATMEP tasks will help identify training deficiencies that can be addressed with remedial training.

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers. Contract not yet awarded.

2. Program Documentation

- Integrated Logistics Support Plan, 176095001, dated 27 August 1996.
- Integrated Logistics Statement of Work, W176095001, dated 13 September 1996.
- User's Logistic Support Summary, dated 26 August 1996.
- **3. Technical Data Plan.** The Naval Air Technical Services Facility will serve as the manager for all technical data. Hardware technical data, a level two drawing package, will be procured with the IFFITTS. Specification Control Drawings will be requested as a future support element for Commercial Off-The-Shelf (COTS) items. COTS item may be replaced with similar equipment which meets the same performance requirements vice identical replacements. Software technical data, a Computer Resources Life Cycle Management Plan will not be generated for this equipment. The IFFITTS is not software intensive.
- **4. Test Sets, Tools, and Test Equipment.** The BIT capability of this test set, and existing intermediate level general purpose electronic test equipment should be able to provide the required support. Any additional support equipment required to support the IFFITTS will be determined by the contractor, but as a goal there will be no new support equipment required. Any support equipment required will be identified via a Support Equipment Requirements Data. Use of Automatic Test Equipment to troubleshoot the equipment is not anticipated.

5. Repair Parts

a. Interim Supply Support. Interim Supply Support (ISS) will be provided through establishment of the Spares Material List prepared by the selected contractor. Spare parts approved for procurement as ISS will be acquired concurrently with production and will be placed in ISS warehouses located in Beaufort, South Carolina, and San Diego, California. Fleet activities requiring parts will order them through normal supply channels using the part number, Commercial And Government Entity (CAGE) code, and special Interim Navy Identification Code Number (NICN). Urgent requirements can be filled by calling the Assistant Program Manager for Logistics. Upon reaching MSD, materials remaining in the ISS warehouse will transition to the NAVICP or other appropriate organization for stocking. Spares Acquisition Integrated with Production (SAIP) allows achievement of cost reductions through economics of scale purchasing, as well as ensuring timely delivery of required spares. The IFFITTS program will utilize SAIP to obtain initial spares. By procuring spares at the same time with production ordering of component parts, savings can be achieved through larger orders. This also reduces lead time for obtaining spare parts.

- **b. Material Support Date.** The second phase of support is organic support. Organic support is reached at MSD, the date at which NAVICP Philadelphia determines that all required supply support and other required elements are in place and the Navy assumes responsibility for materially supporting the equipment. MSD is currently projected as 31 October 2000.
- **6. Human Systems Integration.** Established human engineering principles and practices will be used to develop the IFFITTS system. These principles will guide the design and development of the system's functions and features.

K. SCHEDULES

1. Schedule of Events

a. Installation and Delivery Schedules. The current acquisition strategy reflects a requirement for approximately 450 test sets. Approximately 415 units will be procured for organizational and intermediate level use, 30 units for training, and three units for the Fleet Support Team (FST), formerly known as the Cognizant Field Activity. Procurements will take place over a three-year period with initial deliveries beginning in FY98. Priorities will be two-fold. First, a limited number of assets will be delivered to selected training sites for initial fleet training to support those fleet sites standing up first. The next priority will be for supporting deployed fleet activities requiring immediate support. Allocation of IFFITTS will be in accordance with the Site Activation Plan which will be developed in concert with the TYCOM requirements as expressed via the Integrated Logistics Support Plan. The Site Activation Plan will be published prior to the IOC.

FUNDING PROJECTIONS

FISCAL YEAR	NUMBER OF ASSETS
97	3
98	150
99	147
00	153
Total	453

INSTALLATION ALLOCATION

COMMAND	QUANTITY
AIRLANT	130
AIRPAC	178
CNAVRES	23
CNATRA	16
NAVAIR	73

COMMAND	QUANTITY
* Test/Eval	3
** Training	30

- * The three Test/Eval pre-production assets will be refurbished and provided to the FST for use in fulfilling the requirements of those activities.
- ** See Training Device and Delivery Schedule paragraph.
 - b. Ready For Operational Use Schedule. Upon delivery.
 - c. Time Required to Install at Operational Sites. None.
 - d. Foreign Military Sales and Other Source Delivery Schedule. None.
- **e.** Training Device and Delivery Schedule. Training Devices and Technical Training Equipment will be provided as part of the IFFITTS acquisition. Deliveries to the prospective training sites are planned to be concurrent with the first equipment deliveries. The allocation of 30 test sets procured for training commands will be determined by PMA205, with inputs from TYCOMs.
- L. GOVERNMENT-FURNISHED EQUIPMENT AND CONTRACTOR-FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA
- M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS. None

APPENDIX A - POINTS OF CONTACT

NAME, ACTIVITY, CODE	FUNCTION	TELEPHONE NUMBERS COMMERCIAL, DSN, FAX INTERNET ADDRESS
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CDR Q. Hodge CNO N122	Aviation Manpower	(703) 614-5364, DSN 224
LCDR E. Hawkins CINCLANTFLT N721	Aviation NTSP Manager	(804) 445-7853, DSN 565 (804) 445-7849 (fax)
LT Takamnya CINCPACFLT N321	Fleet Training Readiness	(808) 471-6965, DSN 474
Mr. R. Cole NAVAIRSYSCOM 6.0C3	Depot LEM	(703) 604-1750 ext 4932, DSN 664 (703) 604-2046 (fax)
LCDR L. Lamarre NAVAIRSYSCOM PMA260C15	Assistant Program Manager	(301) 757-6889, DSN 757
Major Victor Wigfall NAVAIRSYSCOM PMA260C36	MALSP SE Program Coordinator	(301) 757-6854, DSN 757
ATC Frankforter NAVAIRSYSCOM PMA205-3C1	Training Manager	(301) 757-8130 , DSN 757
CAPT S. Davis BUPERS PERS-4B	Deputy Assistant, Chief Of Military Personnel Distribution	(703) 614-3454, DSN 224
CDR Lineberg BUPERS PERS-404	Head, Aviation Assignment Branch	(703) 693-1370, DSN 223
Mr. E. Scheye CNET N252	Aviation NTSP Manager	(904) 452-4059, DSN 992

APPENDIX A - POINTS OF CONTACT

NAME, ACTIVITY, CODE	FUNCTION	TELEPHONE NUMBERS COMMERCIAL, DSN, FAX INTERNET ADDRESS
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