NAVY TRAINING SYSTEM PLAN

FOR THE

AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

N78-NTSP-A-50-0207/P

JULY 2003

AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

EXECUTIVE SUMMARY

The AN/AVS-9(V) Night Vision Image Intensifier Set is a helmet mounted, direct view, battery powered, night vision system that provides operators with improved situational awareness during periods of low natural illumination. The system amplifies ambient light from sources such as the moon, stars, and sky glow so the viewed scene becomes clearly visible to the operator. The AN/AVS-9(V) is available in two versions: Tactical Aircraft (TACAIR) and Rotary-Wing. The TACAIR version replaced the MXU-810/U "CATSEYE" and is used by aircrew on the AV-8B, F-14, F/A-18, and EA-6B. The Rotary-Wing version replaced the AN/AVS-6(V) Aviator's Night Vision Imaging System and is used on helicopters and non-ejection seat, fixed-wing aircraft including the H-1, H-3, H-46, H-53, H-60, MV-22, and KC-130.

Initial delivery of the TACAIR version began in March 1997. Developmental Test (DT) and Operational Test (OT) were completed in December 1997. Rotary-Wing deliveries began in second quarter Fiscal Year (FY) 01 and are expected to be completed in fourth quarter FY03. Both the AN/AVS-9(V) TACAIR and Rotary-Wing versions have reached the Operations and Support phase of the Defense Acquisition System (DAS).

Initial and follow-on ground training for aircrew is conducted at the Night Imaging and Threat Evaluation Labs by Aeromedical Safety Officers or other qualified personnel. Organizational (A-School Course at Pensacola and Naval Air Maintenance Training Marine Unit C-School Course at Cherry Point) and intermediate level maintenance personnel will receive initial and follow-on training on request from Naval Air Technical Data and Engineering Service Command (NATEC) representatives or through the formal school, which is currently available at NAMTRA MARUNIT Cherry Point. NATEC training will be provided on-site at no cost to the requesting activity.

Organizational level maintenance is performed by Navy personnel in the Aircrew Survival Equipmentman (PR) rating and Marine Corps personnel with Military Occupational Specialty (MOS) 6060. Intermediate level maintenance at Navy activities is performed by personnel in the Aviation Electrician's Mate (AE) or Aviation Electronics Technician (AT) rating. In the Marine Corps this maintenance is performed by personnel with MOS 6060 at fixed-wing activities and MOS 6483 at rotary-wing activities. There is no depot maintenance planned for the AN/AVS-9(V) other than those units requiring repair while under warranty. All goggles and Image Intensifier Tubes that failed during the warranty period were returned to the manufacturer for repair or replacement.

Preliminary assessment of the impact of fielding the AN/AVS-9(V) indicated no requirement to change existing quantitative manpower or skill levels. Upon receiving training, existing personnel should be able to easily operate and maintain the system.

AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

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AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

LIST OF ACRONYMS

ACDU	Active Duty
AE	Aviation Electrician's Mate
AFB	Air Force Base
AMSO	Aeromedical Safety Officer
AMTCS	Aviation Maintenance Training Continuum System
ANVIS	Aviator's Night Vision Imaging System
AOB	Average Onboard
AR	Active Reserve
AT	Aviation Electronics Technician
ATIR	Annual Training Input Requirement
CFE	Commercially Furnished Equipment
CFY	Current Fiscal Year
CMC	Commandant Marine Corps
CNATT	Center for Naval Aviation Technical Training
CNO	Chief of Naval Operations
COMLANTFLT	Commander Atlantic Fleet
COMPACFLT	Commander Pacific Fleet
DA	Developing Agency
DT	Developmental Test
FY	Fiscal Year
GFE	Government Furnished Equipment
GPETE	General Purpose Electronic Test Equipment
GPTE	General Purpose Test Equipment
IPB	Illustrated Parts Breakdown
LIF	Light Interference Filter
MALS	Marine Aviation Logistics Squadron
MATMEP	Maintenance Training Management and Evaluation Program
MCAF	Marine Corps Air Facility
MCAS	Marine Corps Air Station
MCCDC	Marine Corps Combat Development Command
MOS	Military Occupational Specialty

AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

LIST OF ACRONYMS

MSD	Material Support Date
MTIP	Maintenance Training Improvement Program
NA	Not Applicable
NAMP	Naval Aviation Maintenance Program
NAMTRAGRU HQ	Naval Air Maintenance Training Group Headquarters
NAMTRA MARUNIT	Naval Air Maintenance Training Marine Unit
NAS	Naval Air Station
NATEC	Naval Air Technical Data and Engineering Service Command
NATTC	Naval Air Technical Training Center
NAVAIR	Naval Air Systems Command
NAVMAC	Navy Manpower Analysis Center
NAVPERSCOM	Naval Personnel Command
NAWC	Naval Air Warfare Center
NETC	Naval Education and Training Command
NITE	Night Imaging and Threat Evaluation
NSD	Navy Support Date
NSWC	Naval Surface Warfare Center
NTSP	Navy Training System Plan
NVD	Night Vision Device
OJT	On-the-Job Training
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	Office of the Chief of Naval Operations Instruction
OPO	OPNAV Principal Official
OPTEVFOR	Operational Test and Evaluation Force
OT	Operational Test
PFY	Previous Fiscal Year
PMA	Program Manager, Air
PMOS	Primary Military Occupational Specialty
PNEC	Primary Navy Enlisted Classification
PQS	Personnel Qualification Standards
PR	Aircrew Survival Equipmentman
RFT	Ready For Training
SMCR	Selected Marine Corps Reserve

AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

LIST OF ACRONYMS

SMOS	Secondary Military Occupational Specialty
SNEC	Secondary Navy Enlisted Classification
SPETE	Special Purpose Electronic Test Equipment
SPTE	Special Purpose Test Equipment
SRA	Shop Replaceable Assembly
ST	Special Tool
TACAIR	Tactical Aircraft
TD	Training Device
TSA	Training Support Agency
TTE	Technical Training Equipment
TYCOM	Type Commander
USMC	United States Marine Corps
USN	United States Navy

AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

PREFACE

This Proposed Navy Training System Plan (NTSP) explores the various employment and support alternatives currently under consideration for the AN/AVS-9(V) Night Vision Image Intensifier Set program. This NTSP is the first complete NTSP version, containing all seven parts. This Draft NTSP is a product of the Training Planning Process Methodology as outlined in Office of the Chief of Naval Operations (OPNAV) Publication P-751-3-9-97. No comments were received on this NTSP.

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. Nomenclature-Title-Acronym. AN/AVS-9(V) Night Vision Image Intensifier Set (ANVIS)-9

2. Program Element. 0604264N

B. SECURITY CLASSIFICATION

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

C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor ..... CNO (N78)

OPO Resource Sponsor..... CNO (N780)

Marine Corps Program Sponsor ..... CMC (APW-71)

Developing Agency ..... NSWC Crane Division (805B)
NAVAIR Patuxent River (AIR 4.6.4.5)

Training Agency ..... COMLANTFLT (N-721)
COMPACFLT (N70)
CNATT (FID-N5)

Training Support Agency..... NAVAIR (PMA205)

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

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

Marine Corps Force Structure.....MCCDC (C53)

D. SYSTEM DESCRIPTION

1. Operational Uses. The Tactical Aircraft (TACAIR) version of the AN/AVS-9(V) is being used by aircrew on the AV-8B, F-14, F/A-18 and EA-6B. The Rotary-Wing version is being used on helicopters and non-ejection seat, fixed-wing aircraft, including the H-1, H-3, H-46, H-53, H-60, MV-22, and KC-130. The missions involved for both versions include combat, combat support, anti-submarine warfare, vertical onboard delivery, and search and rescue. The enhanced night vision provided by the system increases the aircrew's capabilities in target acquisition, low altitude navigation, intelligence collection, landing zone identification, and landing.

2. Foreign Military Sales. A version of the AN/AVS-9(V) has been procured by Finland, Germany, Italy, Venezuela, Spain, Korea, Israel, Kuwait, and France. The system is also used by the United States Air Force and Coast Guard.

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST. Certification testing on the TACAIR version of the AN/AVS-9(V) was completed in December 1997. Through a Memorandum of Agreement with the Operational Test and Evaluation Force, Developmental Test (DT) and Operational Test (OT) were conducted as a DT/DT-assist. DT and OT on the Rotary-Wing version of the AN/AVS-9(V) were completed successfully on filmed tube systems. Filmless tube systems were also intended to be used but did not pass testing procedures. Therefore, all versions of the AN/AVS-9(V) will be filmed tube systems.

F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED. The AN/AVS-9(V) has replaced the MXU-810/U "CATSEYE" in the TACAIR communities and will be used in EA-6B aircraft. The replacement of the AN/AVS-6(V) Aviator's Night Vision Imaging System (ANVIS) in the Rotary-Wing and KC-130 communities began in second quarter Fiscal Year (FY) 01.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The AN/AVS-9(V) is a helmet mounted, direct view, battery powered, night vision system that provides operators with improved situational awareness during periods of low natural illumination. The system amplifies ambient light from sources such as the moon, stars, and skyglow so the viewed scene becomes clearly visible to the operator. A light-emitting diode indicator on the helmet mount assembly blinks if the battery voltage drops below safe limits. The system can be adjusted for vertical distance, tilt, eye relief, eye span, diopter setting, and focus. When not in use, the goggles can be flipped up and stored away from the eyes.

The TACAIR version of the AN/AVS-9(V) is powered by a front-mounted battery pack that holds two half-"AA" size lithium batteries. Each battery will provide power for approximately five hours. The Rotary-Wing version of the system is powered by a rear-

mounted, low profile battery pack containing four "AA" size alkaline batteries. This battery pack will provide power for approximately sixty hours.

The AN/AVS-9(V) consists of the following components:

a. Helmet Mount Assembly. The Helmet Mount Assembly serves as the mounting point for the Binocular Assembly and contains the system power selector switch, low battery indicator circuit, and the vertical adjustment mechanism. The mount also contains the battery compartment, which supplies system power on the TACAIR version and the quick-don mount interfaces with the battery pack on the Rotary-Wing version.

b. Binocular Assembly. The Binocular Assembly contains the optical elements that gather, amplify, and focus available light on the user's eye. It also houses the mechanisms for eye span, fore and aft, and tilt adjustment, as well as eyepiece and objective lens focus. The binocular assembly consists of the following major components:

(1) Objective Lens Assembly. The Objective Lens Assembly collects the available light and focuses it on the Image Intensifier Assembly. The TACAIR version contains a "leaky-green" filter that enables pilots to view the Head-Up Display through the goggles. The Rotary-Wing and EA-6B version has a Class B filter for the newer cockpits with more color.

(2) Monocular Housing Assembly. The Monocular Housing Assembly holds the Image Intensifier Assembly and provides electrical contact to that assembly through leads connected to a printed circuit board. The Monocular Housing Assembly attaches to the Objective Lens Assembly and the Eyepiece Lens Assembly.

(3) Image Intensifier Assembly. The Image Intensifier Assembly amplifies the available light received from the objective lens. The image is then inverted, allowing a correctly oriented image to be presented to the user's eye. The TACAIR and Rotary-Wing goggles delivered in FY00-02 contained Filmed Image Intensifier Assemblies. The remaining Rotary-Wing goggles were to contain filmless image intensifier assemblies. However, the filmless tube systems did not pass testing and are no longer an option. All TACAIR and Rotary-Wing goggles will contain filmed image intensifier assemblies.

(4) Eyepiece Lens Assembly. The Eyepiece Lens Assembly presents the intensified image to the eye and can compensate for variations in the user's eyesight.

(5) Pivot and Adjustment Shelf Assembly. The pivot and adjustment shelf assembly provides the interface between the two monocular housings and the Helmet Mount Assembly. It contains the mechanisms for eye span, fore and aft, and tilt adjustment.

c. Carrying Case. The Carrying Case is a soft-sided case designed to protect the system during transport. It contains foam inserts specifically cut to allow storage and easy access to the Binocular Assembly, batteries, operator's manual, and lens cleaning material. The Rotary-Wing version is slightly larger to allow storage space for the battery pack, clip-on power pack for

maintenance and egress, and Light Interference Filters (LIF) for laser protection and helmet mount.

2. Physical Description. The AN/AVS-9(V) weighs approximately 19.1 ounces. In addition, the TACAIR helmet mount weighs 8.83 ounces and the Rotary-Wing quick-don helmet mount weighs 11.65 ounces.

3. New Development Introduction. The AN/AVS-9(V) was introduced as a modernization retrofit. This process began in March 1997 for the TACAIR version and in February 2000 for the Rotary-Wing version.

4. Significant Interfaces. All aircraft require cockpit lighting compatible with Night Vision Devices (NVD) for any flight in which the aircrew will be using the AN/AVS-9(V). If the required lighting was not installed during production, through an Engineering Change Proposal, or through an Airframes Change, then filters must be installed over selected aircraft instruments by maintenance personnel prior to the flight.

5. New Features, Configurations, or Material. The AN/AVS-9(V) uses state-of-the-art light intensifying technology. The system provides significant increases in all areas of performance and reliability over the MXU-810/U "CATSEYE" and older Omni II versions of the AN/AVS-6(V) ANVIS. The Generation IV Image Intensifier Assembly are in AN/AVS-9(V) systems delivered in FY03 and beyond. These image intensifiers have gated power supplies and no ion barrier film, resulting in improved low light performance and reduced halo in urban areas.

H. CONCEPTS

1. Operational Concept. The AN/AVS-9(V) is the primary night vision system for the aircrew on the AV-8B, F-14, F/A-18, EA-6B, H-1, H-3, H-46, H-53, H-60, MV-22, and the KC-130 aircraft. The system will be used on missions requiring enhanced night vision.

2. Maintenance Concept

a. Organizational. Organizational level maintenance is performed by Navy personnel in the Aircrew Survival Equipmentman (PR) rating and Marine Corps personnel with Military Occupational Specialty (MOS) 6060. This maintenance consists of periodic inspections, cleaning, and removal and replacement of failed assemblies. The ANV-20/20 Night Vision Test Set is the preferred test equipment for performing organizational level inspections; however, a locally manufactured Eyelane may also be used.

Note: Night vision equipment must be preflight tested and adjusted for the individual aircrewman in a unit Eyelane or equivalent tester prior to flight.

(1) Preventive Maintenance. Preventive maintenance consists of performing a pre-operational check prior to issue and a 90-day inspection using the ANV-20/20 or Eyelane.

(2) Corrective Maintenance. Corrective maintenance consists of removal and replacement of drained batteries; removal, repair, and replacement of the Helmet Mount Assembly; and system cleaning in accordance with specified procedures.

b. Intermediate. Intermediate level maintenance at Navy activities is performed by personnel in the AE or AT ratings. In the Marine Corps this maintenance is performed by personnel with MOS 64XX at fixed-wing activities and MOS 6483 at rotary-wing activities. Intermediate level maintenance consists of a 180-day inspection, troubleshooting to a defective Shop Replaceable Assembly (SRA), removal and replacement of SRAs, and a system operational check after unscheduled maintenance. Technicians use the ANV-126-0001 or the ANV-126-004 NVD Test Set with the ANV-126-004-1 Night Vision Adapter Set to perform the 180-day inspection and operational check.

c. Depot. There is no depot level maintenance planned for the AN/AVS-9(V) other than those units requiring repair while under warranty. All goggles and image intensifier tubes that fail during the three-year warranty period will be returned to the manufacturer for repair or replacement. The three-year warranty period begins for each type aircraft when the DD250 is signed.

d. Interim Maintenance. Currently assigned organizational and intermediate level technicians perform interim maintenance with assistance and training provided by Naval Air Technical Data and Engineering Service Command (NATEC) personnel. The Navy Support Date (NSD) was achieved in September 1999 for the TACAIR AN/AVS-9(V). The NSD for the Rotary-Wing AN/AVS-9(V) was achieved in August 2002.

e. Life Cycle Maintenance Plan. There are no scheduled overhauls for the AN/AVS-9(V).

3. Manning Concept. The manpower requirements for the AN/AVS-9(V) are well within the capabilities of currently assigned personnel. No additional manpower was or is required.

a. Estimated Maintenance Man-Hours per Operating Hour. The Mean Time Between Failure for the AN/AVS-9(V) is approximately 2,000 hours. The 90-day organizational level and 180-day intermediate level scheduled inspections take approximately one-half hour each to complete.

b. Proposed Utilization. AN/AVS-9(V) utilization is the same as the systems being replaced.

c. Recommended Qualitative and Quantitative Manpower Requirements

(1) Aircrew. Aircrew manpower requirements are not affected by the transition to the AN/AVS-9(V).

(2) Maintenance. Maintenance manpower requirements are not affected by the transition to the AN/AVS-9(V).

4. Training Concept. Active duty and reserve aircrews must complete an approved NVD training syllabus prior to participating in NVD operations. Ground training is available at the Night Imaging and Threat Evaluation (NITE) Labs located at most major Marine Corps Air Stations (MCAS) and Naval Air Stations (NAS). Aeromedical Safety Officers (AMSO) or NITE Lab Supervisors conduct the operator training. Attendance at a NITE Lab is strongly recommended per OPNAVINST 3710.7R, Naval Air Training and Operating Procedures Standardization and General Flight and Operating Instructions. Flight training is conducted at the individual squadrons in accordance with criteria established by the Type Commanders (TYCOM).

Maintenance manpower requirements are to be evaluated upon initiation of AN/AVS-9(V) specific training in course C-602-2035 Aircrew Survival Equipmentman Common Core Class A1. Evaluation conducted by the HPPR process will determine requirement for a change to existing course content.

AN/AVS-9(V) specific maintenance training is available from NATEC personnel for both active and reserve Navy and Marine Corps organizational level personnel. NATEC personnel are also available for intermediate level training, but for Navy personnel only. This NATEC training is provided upon request and at no cost to the requesting unit. Program Manager, Air (PMA) 202 strongly recommends that intermediate level personnel receive formal training prior to performing scheduled or unscheduled maintenance on the AN/AVS-9(V).

For Marine Corps intermediate level maintenance training, course *C-198-3059, AN/AVS-6 ANVIS Intermediate Level Maintenance course*, taught at NAMTRA MARUNIT MCAS Cherry Point, was replaced by *C-198-3072, AN/AVS-9(V) Night Vision Image Intensifier Set Intermediate Level Maintenance Course* in October 2002. This new course, *C-198-3072*, is part of training track *M-102-6483, Helo Deceptive Electronic Countermeasures Intermediate Level Maintenance*, which is currently available.

a. Initial Training

(1) Instructor. The AMSOs at the NITE Labs have received an AN/AVS-9(V) Aircrew Transition Training Package. This package covers transition from the MXU-810/U "CATSEYE" to the TACAIR version of the AN/AVS-9(V). A package covering transition from the AN/AVS-6 ANVIS to the Rotary-Wing version of the AN/AVS-9(V) was compiled and delivered to the AMSOs. NATEC personnel received maintenance training at NSWC Crane, Indiana, on 13 to 15 July 1999 and refresher training on 30 October to 1 November 2001.

(2) Operator

Title	**MXU-810/U CATSEYE to AN/AVS-9 Aircrew Training**
Description	This course provides instruction to Aircrew personnel including: ° AN/AVS-9(V) TACAIR Version Setup ° AN/AVS-9(V) TACAIR Version Use ° Direct View Design and Projected View Design Differences ° System Specifications and Adjustment Control Differences Upon completion the student will be familiar with the AN/AVS-9(V).
Delivery Method	a. Total hours of instruction by delivery method: 6 hours of group paced instructor led lecture b. Media: Text c. Instructional Strategies by Hour: 6 Total hours of instruction by delivery method d. Evaluation Strategies: Evaluation of performance on troubleshooting problems
Locations	° MCAS Yuma ° MCAS Miramar ° Marine Corps Air Facility (MCAF) Quantico ° MCAS Cherry Point ° MCAS Beaufort ° MCAS Futenma ° MCAS Iwakuni ° NAS Lemoore ° NAS Fallon ° NAS Whidbey Island ° NAS Oceana
Length	Approximately six hours
RFT date	Currently available
TTE/TD	ANV-20/20 and AN/AVS-9(V)
Prerequisites	Designated Naval Aviator or Enlisted Aircrewman

Title	**AN/AVS-6 ANVIS to AN/AVS-9 Aircrew Training**
Description	This course provides instruction to Aircrew personnel including: ° AN/AVS-9(V)Rotary-Wing Version Adjustment ° AN/AVS-9(V)Rotary-Wing Version Use Upon completion the student will be familiar with the AN/AVS-9(V).
Delivery Method	Total hours of instruction by delivery method: 1 hour of group paced instructor led lecture Media: Text Evaluation Strategies: None
Locations	° MCAS Yuma ° MCAS Camp Pendleton ° MCAS Miramar ° MCAF Quantico ° MCAS New River ° MCAS Cherry Point ° MCAS Beaufort ° MCAS Futenma ° Marine Corps Base Hawaii, Kaneohe Bay ° MCAS Iwakuni ° NAS North Island ° NAS Lemoore ° NAS Fallon ° NAS Whidbey ° NAS Oceana ° NAS Norfolk ° NAS Mayport
Length	Approximately one hour
RFT date	Currently available
TTE/TD	ANV-20/20 and AN/AVS-9(V)
Prerequisites	Designated Naval Aviator or Enlisted Aircrewman

(3) Maintenance

Title	**AN/AVS-9(V) Intermediate Level Maintenance**
CIN	C-198-3072

Description ..... This course provides instruction to intermediate level technicians including:

° Preventive Maintenance Procedures
° Corrective Maintenance Procedures

Upon completion, the student will be able to perform intermediate level maintenance on the AN/AVS-9(V) in a shop environment under limited supervision.

Delivery Method Total hours of instruction by delivery method:

13 hours of group paced instructor led lecture

19 hours of group paced instructor laboratory
Level of learning 3
Level of interactivity 3
Media: Text
Instructional Strategies by Hour: Total hours of instruction by delivery method
Evaluation Strategies: 1 test: Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems

Location ..... On-site
Note: This training is available from NATEC on request at no cost to the requesting unit

Length ..... 2 days

RFT date ..... Currently available

TTE/TD ..... ANV-126-001 or ANV-126-004 with ANV-126-004-1 and AN/AVS-9(V)

Prerequisites ..... AE, AT

Title ..... AN/AVS-9(V) Organizational Level Maintenance

Description ..... This course provides instruction to organizational level technicians including:

° Preventive Maintenance Procedures
° Corrective Maintenance Procedures

Upon completion, the student will be able to perform organizational level maintenance on the AN/AVS-9(V) in a squadron environment under limited supervision.

Delivery Method — Total hours of instruction by delivery method:

4 hours of group paced instructor led lecture

Media: Text

Evaluation Strategies: Evaluation of performance on troubleshooting problems.

Location ..... On-site

Note: This training is available from NATEC on request at no cost to the requesting unit

Length ..... 4 hours

RFT date ..... Currently available

TTE/TD ..... ANV-20/20 and AN/AVS-9(V)

Prerequisites ..... PR or MOS 6060

Note: A video is also available from the Fleet Air Introduction Liaison of Survival Aircrew Flight Equipment that shows organizational level personnel the proper procedures for installing the Helmet Mount Assembly and for performing Preventive Maintenance on the TACAIR version of the AN/AVS-9(V).

b. Follow-on Training. Follow-on maintenance training for the AN/AVS-9(V) Aviators Night Vision Imaging System is available at NAMTRA MARUNIT MCAS Cherry Point. NAMTRA MARUNIT MCAS Cherry Point has completed the final "teach through" and sent the AN/AVS-9(V) training package to Naval Air Maintenance Training Group Headquarters (NAMTRAGRU HQ) for approval. Approval was granted in October 2002.

Title ..... Aircrew NITE Lab Indoctrination

Description ..... This course provides instruction to Aircrew personnel including:

- AN/AVS-9(V) Adjustment and Use
- Limits to NVD Capabilities Imposed by Environmental and Human Factors

Upon completion the student will be able to use the AN/AVS-9(V) during flight under limited supervision.

Delivery Method — Total hours of instruction by delivery method:

8 hours of group paced instructor led lecture

Media: Text

Evaluation Strategies: Evaluation of performance on troubleshooting problems.

Locations	° MCAS Yuma ° MCAS Camp Pendleton ° MCAS Miramar ° MCAF Quantico ° MCAS New River ° MCAS Cherry Point ° MCAS Beaufort ° MCAS Futenma ° MCBH Kaneohe Bay ° MCAS Iwakuni ° NAS North Island ° NAS Lemoore ° NAS Fallon ° NAS Whidbey Island ° NAS Oceana ° NAS Norfolk ° NAS Mayport
Length	1 day
RFT date	Currently available (with AN/AVS-9 included)
TTE/TD	ANV-20/20 and AN/AVS-9(V)
Prerequisites	Designated Naval Aviator or Enlisted Aircrew

Note: This training will be available in two versions, TACAIR and Rotary-Wing.

Title	**AN/AVS-9(V) Organizational Level Maintenance**
CIN	Not Applicable
Model Manager ...	NATEC
Description	This course provides instruction to organizational level technicians including: ° Preventive Maintenance Procedures ° Corrective Maintenance Procedures Upon completion the student will be able to perform AN/AVS-9(V) organizational maintenance in a squadron environment under limited supervision.
Delivery Method	Total hours of instruction by delivery method: 4 hours of group paced instructor led lecture Media: Text Evaluation Strategies: Evaluation of performance on troubleshooting problems.

Location ..... On-site

Length ..... 4 hours

RFT date ..... Currently available

TTE/TD ..... ANV-20/20 and AN/AVS-9(V)

Prerequisites ..... PR or MOS 6060

Note: This training is available on request from NATEC at no cost to the requesting unit.

Title ..... AN/AVS-9(V) Intermediate Level Maintenance

CIN C-198-3072

Model Manager ... NAMTRAMARUNIT CHERRY POINT

Description ..... This course provides training to intermediate level technicians including:

° Preventive Maintenance Procedures
° Corrective Maintenance Procedures

Upon completion the student will be able to perform AN/AVS-9(V) intermediate maintenance in a shop environment under limited supervision

Delivery Method

Total hours of instruction by delivery method:

13 hours of group paced instructor led lecture

19 hours of group paced instructor laboratory
Level of learning 3
Level of interactivity 3
Media: Text
Instructional Strategies by Hour: Total hours of instruction by delivery method
Evaluation Strategies: 1 test: Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems

Location ..... On-site

Length ..... 4 days

RFT date ..... Currently available

TTE/TD	ANV-126-001 or ANV-126-004 with ANV-126-004-1, and AN/AVS-9(V)
Prerequisites	AE, AT

Title	**Helo Deceptive Electronic Countermeasures Intermediate Maintenance**
CIN	M-102-6483
Model Manager ...	NAMTRA MARUNIT MCAS Cherry Point
Description	This track provides instruction to intermediate level technicians including: ° AN/AVS-9(V) Theory of Operation ° Preventive Maintenance Procedures ° Corrective Maintenance Procedures Upon completion the student will be able to perform AN/AVS-9(V) intermediate maintenance in a shop environment under limited supervision

Delivery Method

C-198-3072 AN/AVS-9 I MAINT
Total hours of instruction by delivery method:

13 hours of group paced instructor led lecture

19 hours of group paced instructor laboratory
Level of learning 3
Level of interactivity 3
Media: Text
Instructional Strategies by Hour: 32 Total hours of instruction by delivery method

Evaluation Strategies: 1 test: Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems.

C-102-3107 AN/ALE-39 IMA

Total hours of instruction by delivery method:

22 hours of group paced instructor led lecture

33 hours of group paced instructor laboratory
Level of learning 3
Level of interactivity 4
Media: Text
Instructional Strategies by Hour: 56 Total hours of instruction by delivery method

Evaluation Strategies: 2 tests: Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems.

C-102-4020A AN/ALQ-144A (V) 1 I

Total hours of instruction by delivery method:

22 hours of group paced instructor led lecture

31 hours of group paced instructor laboratory
Level of learning 3
Level of interactivity 2
Media: Text
Instructional Strategies by Hour: 53 Total hours of instruction by delivery method

Evaluation Strategies: 1 test(s): Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems.

C-102-4022A AN/ALQ-157 IRCM

Total hours of instruction by delivery method:

19 hours of group paced instructor led lecture

65 hours of group paced instructor laboratory
Level of learning 3
Level of interactivity 4
Media: Text
Instructional Strategies by Hour: 88 Total hours of instruction by delivery method

Evaluation Strategies: 2 test(s): Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems.

C-102-4022A AN/AAR-47 I Level

Total hours of instruction by delivery method:

11 hours of group paced instructor led lecture

21 hours of group paced instructor laboratory
Level of learning 1
Level of interactivity 3
Media: Text
Instructional Strategies by Hour: 32 Total hours of instruction by delivery method

Evaluation Strategies: 1 test(s): Fill-in the blank, multiple choice, short answer.

C-102-4019 AN/APR-39 (V) 1 RSDS

Total hours of instruction by delivery method:

28 hours of group paced instructor led lecture

49 hours of group paced instructor laboratory
Level of learning 1
Level of interactivity 3
Media: Text
Instructional Strategies by Hour: 77 Total hours of instruction by delivery method

Evaluation Strategies: 2 test(s): Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems.

C-102-4023 AN/VR-2 LDS IMA

Total hours of instruction by delivery method:

22 hours of group paced instructor led lecture

56 hours of group paced instructor laboratory
Level of learning 1
Level of interactivity 3
Media: Text
Instructional Strategies by Hour: 78 Total hours of instruction by delivery method

Evaluation Strategies: 2 test(s): Fill-in the blank, multiple choice, short answer. Evaluation of performance on troubleshooting problems.

Location ..... NAMTRA MARUNIT, MCAS Cherry Point

Length ..... 88 days

RFT date ..... Currently available

Skill identifier ..... MOS 6483

TTE/TD ..... ANV-126-001 or ANV-126-004 with ANV-126-004-1, and AN/AVS-9(V)

Prerequisites ..... ° C-100-2020, Avionics Common Core Class A1
° C-100-2017, Avionics Technician I Level Class A1

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
AE	° C-100-2020, Avionics Common Core Class A1 ° C-602-2039, Aviation Electrician's Mate Strand Class A1
AT	° C-100-2020, Avionics Common Core Class A1 ° C-100-2017, Avionics Technician I Level Class A1
PR	° C-602-2035, Aircrew Survival Equipmentman Common Core Class A1
MOS 6060	° C-602-2035, Aircrew Survival Equipmentman Common Core Class A1
MOS 6483	° C-100-2020, Avionics Common Core Class A1 ° C-100-2017, Avionics Technician I Level Class A1

d. Training Pipelines. NA

I. ONBOARD (IN-SERVICE) TRAINING

1. Proficiency or Other Training Organic to the New Development

a. Maintenance Training Improvement Program. Current planning is to adopt the Aviation Maintenance Training Continuum System (AMTCS) concepts to replace Maintenance Training Improvement Program (MTIP). AMTCS is scheduled to begin full implementation for fleet deployment in November 2003.

b. Aviation Maintenance Training Continuum System. AMTCS will provide career path training to the Sailor or Marine from their initial service entry to the end of their military career. AMTCS concepts will provide an integrated system that will satisfy the training and administrative requirements of both the individual and the organization. The benefits will be manifested in the increased effectiveness of the technicians and the increased efficiencies of the management of the training business process. Where appropriate, capitalizing on technological advances and integrating systems and processes can provide the right amount of training at the right time, thus meeting the CNO's mandated "just-in-time" training approach.

Technology investments enable the development of several state-of-the-art training and administrative tools: Interactive Multimedia Instruction (IMI) for the technicians in the Fleet in the form of Interactive Courseware (ICW) with Computer Managed Instruction (CMI) and Computer Aided Instruction (CAI) for the schoolhouse.

Included in the AMTCS development effort is the Aviation Maintenance Training Continuum System - Software Module, which provides testing [Test and Evaluation], recording [Electronic Certification Qualification Records], and a Feedback system. The core functionality of these AMTCS tools are based and designed around the actual maintenance-related tasks the technicians perform, and the tasks are stored and maintained in a Master Task List data bank. These tools are procured and fielded with appropriate Commercial-Off-The-Shelf (COTS) hardware and software, i.e., Fleet Training Devices - Laptops, PCs, Electronic Classrooms, Learning Resource Centers (LRC), operating software, and network software and hardware.

Upon receipt of direction from OPNAV (N789H), AMTCS concepts are to be implemented and the new tools integrated into the daily training environment of all participating aviation activities and supporting elements. AMTCS will serve as the standard training system for aviation maintenance training within the Navy and Marine Corps, and is planned to supersede the existing MTIP and Maintenance Training Management and Evaluation Program (MATMEP) programs.

2. Personnel Qualification Standards. The Personnel Qualification Standards (PQS) Development Group, Naval Education and Training Professional Development and Technology Center, Pensacola, Florida, updated the necessary PQS.

3. Other Onboard or In-Service Training Packages. AN/AVS-9(V) information has been integrated into existing On-the-Job Training (OJT) packages. Each Navy and Marine Corps squadron has an OJT program that has been structured to meet their operational requirements.

Marine Corps onboard training is based on MCO P4790.12B, Individual Training Standards System and MATMEP. This program is designed to meet Marine Corps, as well as Navy OPNAVINST 4790.2 series, 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 enhanced with refresher training. MATMEP will be replaced by AMTCS in FY03.

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers

CONTRACT NUMBERS	MANUFACTURER	ADDRESS
DAAB07-96-C-J209 N00019-98-C-0047 N00019-00-C-0444	ITT Industries, Inc.	Night Vision Division 7635 Plantation Road Roanoke, VA 24019-3222

2. Program Documentation

DOCUMENT	ORIGINATOR	APPROVAL DATE
User's Logistics Support Summary	Naval Surface Warfare Center, Crane Division	28 October 1998

3. Technical Data Plan. The technical manuals currently in use for the TACAIR version of the AN/AVS-9(V) are joint with the United States Air Force, which is the lead service. The Operator's and Organizational Maintenance Manual and the Intermediate Maintenance Manual with Illustrated Parts Breakdown have been rewritten to include information on the Rotary-Wing version of the system. These new manuals are Navy and Marine Corps specific and are written in the Navy work package format. They are currently available electronically from NATEC and PMA202.

4. Test Sets, Tools, and Test Equipment. The following special tools and test equipment are required to perform organizational or intermediate level maintenance on the AN/AVS-9(V).

NOMENCLATURE	PART NUMBER	REMARKS
Spanner Wrench	5003423	Used on the lens locking rings
Tube Retainer Wrench	5003424	Used on the tube retainer
Modified ¼-inch Open End Wrench	Local Manufacture	Used on the threaded shaft retaining nuts for inter-pupillary adjustments
Purge Adapter	269390	Used to purge the monocular assembly
8 inch-ounce Torque Screwdriver with Bit	Unknown	Used to install purge port
330 inch-ounce Torque Screwdriver	Unknown	Used to tighten tube retainer ring
Night Vision Device Test Set	ANV-126-004/ ANV-126-001	Used at intermediate level (Note)
Night Vision Adapter Set	ANV-126-004-1	Used with ANV-126-004 (Note)
Light Interference Filter (LIF) Objective Adapter Plate	ANV-126-067	Used with either ANV-126-001 or ANV-126-004 when LIFs are installed on objective lenses
Night Vision Device Infinity Focus Test Set	ANV-20/20	Used at organizational level (Preferred)
Eyelane	Local Manufacture	Can be used in place of ANV-20/20

Note: Future procurements will combine the ANV-126-004 and the ANV-126-004-1 under part number ANV-126-001.

5. Repair Parts. The AN/AVS-9(V) is being provisioned through standard provisioning and cataloging practices by the Naval Inventory Control Point in Philadelphia, Pennsylvania. The Material Support Date (MSD) was achieved in September 1999 for TACAIR AN/AVS-9(V). The MSD for Rotary-Wing was August 2002.

6. Human Systems Integration. AN/AVS-9 is a commercial off the shelf product. The design processes conformed to standard human engineering practices as defined in existing

human factors engineering design standards. A human systems integration plan was not developed for this system due to it being a commercial off the shelf product. Data was leveraged from lessons learned from AN/AVS-6 and MXU-810/U night vision systems.

This system has no habitability impact. Manpower issues are covered in part II and III of this document.

The curricula delivery methods that are employed to teach these courses is a blend of NATEC, platform, OJT and ICW instruction along with computer-aided instruction. NATEC has a charter from NSWC Crane to conduct training. All future CBT, CAI and ICW training material will be sharable content object reference model compliant. Marine Aviation Weapons and Tactics Squadron One, MCAS Yuma will provide operator training for the AMSO. AMSOs will subsequently train TACAIR operators at their activities. A training effectiveness evaluation has not been performed. Training evaluations for all courses that have a CIN are conducted annually though conducting formal course reviews with the maintainers and operators. Results of these formal course reviews are analyzed and are used to effect curriculum changes that better meets the needs of the fleet. A formal training effectiveness evaluation action chit has been documented in Part VI of this NTSP listing the IPT Lead and Assistant Program Manager Training Systems at NAVAIR as the action command.

The ECP process, in accordance with NAVAIRINST 4130.1C, is utilized to initiate upgrades to operational and training systems and allows for inputs to the affect on the human and MPT. All new engineering change proposals for the AN/AVS-9 take into consideration the human-machine interface for Operators, Maintainers and Support Personnel.

In its current state of design, the AN/AVS-9 system contains no explosive, radioactive, or carcinogenic materials. Toxic materials that have been documented are present in small amounts and in forms that present no hazard during any phase of system ownership, including disposal. If the unit were to be incinerated, limited amounts of corrosive vapors would be generated by the decomposition of wire insulation. This is common to all electronic equipment meeting the requirements to operate in the specified environments. Environmental and Occupational Safety and Health requirements meet federal, state, and local standards, regulations, and directives and are enforced by respective agencies, as applicable.

K. SCHEDULES

1. Installation and Delivery Schedules. Deliveries of the TACAIR version of the AN/AVS-9(V) began in March 1997 and were completed in November 2000. Deliveries of the Rotary-Wing version of the AN/AVS-9(V) began in second quarter FY00 and are ongoing. Deliveries are expected to be completed in fourth quarter FY03. The TYCOMs distribute the assets as required based on the quantities allocated by activity in the Weapon System Planning Document.

All deliveries of the AN/AVS-9(V) to training activities have occurred.

Initial deliveries of the Rotary-Wing version began in second quarter FY01 at the rate of 110 units per month.

AN/AVS-9(V) DELIVERY SCHEDULE

VERSION	PFYs	FY02	FY03
TACAIR	2012	20	
Rotary-Wing	1300	2000	2000

2. Ready For Operational Use Schedule. The AN/AVS-9(V) is Ready For Operational Use upon delivery to each activity.

3. Time Required to Install at Operational Sites. NA

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

5. Training Device and Technical Training Equipment Delivery Schedule. VMAT-203 NAMTRA MARUNIT has received one ANV-126-001 Night Vision Device Test Set for use in course *C-198-3072, AN/AVS-9(V) Night Vision Image Intensifier Set Intermediate Level Maintenance* (part of training track *M-102-6483, Helo Deceptive Electronic Countermeasures Intermediate Level Maintenance*)

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

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Maintenance Plan for AN/AVS-9(V) Night Vision Image Intensifier Set	AVMP-1480 Rev C	NSWC Crane 805B	Approved May 01
AN/AVS-6(V) ANVIS Navy Training System Plan	A-50-8214D/A	PMA202	Approved Dec 95
F-14A/B/D Aircraft	A-50-8511C/A	PMA241	Approved Feb 02

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
T/AV-8B Harrier II Weapon System	A-50-8210D/A	PMA257	Approved Sep 01
F/A-18 Aircraft	A-50-7703I/D	PMA265	Draft Oct 02
EA-6B Improved Capability Mod II and III	A-50-7904D/A	PMA234	Approved Mar 01
H-1 Upgrades Program AH-1Z and UH-1Y	A-50-9602A/A	PMA276	Approved Jan 02
VH-3D Helicopter	A-50-0007/A	PMA261	Approved Nov 01
H-46 Helicopter	A-50-9409A/A	PMA226	Approved May 01
CH-53D and CH-53E Aircraft	A-50-7604G/A	PMA261	Approved Mar 01
VH-60N Helicopter	A-50-0008/A	PMA261	Approved Nov 01
C-130 Aircraft	A-50-0120/P	PMA207	Proposed Jul 02
MH-60S Multi Mission Helicopter	A-50-9902A/A	PMA299	Approved Jan 03
V-22 Osprey	A-50-8412D/D	PMA275	Draft Jan 01
SH-60F Carrier Inner Zone Anti Submarine Helicopter	A-50-8508D/A	PMA299	Approved Aug 00
SH-60B Light Airborne Multi Purpose System MKIII	A-50-7702E/D	PMA299	On Hold Oct 01

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the AN/AVS-9(V) Night Vision Image Intensifier Set and, therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

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

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

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

PART II - BILLET AND PERSONNEL REQUIREMENTS

II.A. BILLET REQUIREMENTS

SOURCE OF MANPOWER: Total Force Manpower Management System **DATE:** September 2002

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

ACTIVITY, UIC		PFYs	CFY03	FY04	FY05	FY06	FY07
OPERATIONAL ACTIVITIES - USMC							
HMLA 773 Marietta	01773	1	0	0	0	0	0
HMLA 775 (DET A) Belle Chase	01767	1	0	0	0	0	0
HMLA 775 (DET A) Johnstown	01778	1	0	0	0	0	0
HMX 1 (Executive Support) MCAS Quantico	02403	1	0	0	0	0	0
MAG 29 (HMT 302) MCAS New River	65434	1	0	0	0	0	0
HMM 764 Edwards AFB	03028	1	0	0	0	0	0
TOTAL:		6	0	0	0	0	0
FLEET SUPPORT ACTIVITIES - USMC							
4th MAW (Site Support) JRB Fort Worth	03007	1	0	0	0	0	0
MAG 42 (HMM 774) NAS Norfolk	01774	1	0	0	0	0	0
MALS 26 (HMH 461) MCAS New River	01074	1	0	0	0	0	0
MALS 26 (HMLA 167) MCAS New River	01074	1	0	0	0	0	0
MALS 26 (HMM 261) MCAS New River	01074	1	0	0	0	0	0
MALS 26 (HMM 264) MCAS New River	01074	1	0	0	0	0	0
MALS 26 (HMM 266) MCAS New River	01074	1	0	0	0	0	0
MALS 26 (MAG 26) MCAS New River	01074	1	0	0	0	0	0
MALS 26 (VMMT 204) MCAS New River	01074	1	0	0	0	0	0
MALS 29 (HMH 464) MCAS New River	01227	1	0	0	0	0	0
MALS 29 (HMLA 269) MCAS New River	01227	1	0	0	0	0	0
MALS 29 (HMM 162) MCAS New River	01227	1	0	0	0	0	0
MALS 29 (HMM 263) MCAS New River	01227	1	0	0	0	0	0
MALS 29 (HMM 365) MCAS New River	01227	1	0	0	0	0	0
MALS 29 (MAG 29) MCAS New River	01227	1	0	0	0	0	0
MALS 42 Marietta	04156	1	0	0	0	0	0
MALS 49 Stewart	01197	1	0	0	0	0	0
MAG 46 (HMLA 775) Camp Pendleton	04780	1	0	0	0	0	0
MALS Augment (HMM 764) MCAS Miramar	03028	1	0	0	0	0	0
MALS 16 (HMH 361) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (HMH 462) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (HMH 465) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (HMH 466) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (HMM 161) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (HMM 163) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (HMM 165) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (HMM 166) MCAS Miramar	01020	1	0	0	0	0	0
MALS 16 (MAG 16) MCAS Miramar	01020	1	0	0	0	0	0
MALS 24 (HMT 301) MCAS Kaneohe Bay	01071	1	0	0	0	0	0
MALS 24 (Rotary Wing) MCAS Kaneohe Bay	01071	1	0	0	0	0	0
MALS 36 (HMM 262) MCAS Futenma	01024	1	0	0	0	0	0
MALS 36 (HMM 265) MCAS Futenma	01204	1	0	0	0	0	0
MALS 36 (MAG 36) MCAS Futenma	01024	1	0	0	0	0	0

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

ACTIVITY, UIC		PFYs	CFY03	FY04	FY05	FY06	FY07
MALS 39 (HMLA 169) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (HMLA 267) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (HMLA 367) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (HMLA 369) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (HMM 268) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (HMM 364) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (HMMT 164) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (HMT 303) Camp Pendleton	01158	1	0	0	0	0	0
MALS 39 (MAG 39) Camp Pendleton	01158	1	0	0	0	0	0
Site Support Edwards AFB	03021	1	0	0	0	0	0
TOTAL:		43	0	0	0	0	0

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

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
OPERATIONAL ACTIVITIES - USMC					
HMLA 773 Marietta, 01773					
USMC	0	1	CPL	6483	
SMCR	0	1	CPL	6483	
ACTIVITY TOTAL:	0	2			
HMLA 775 (DET A) Belle Chase, 01767					
USMC	0	1	CPL	6483	
ACTIVITY TOTAL:	0	1			
HMLA 775 (DET A) Johnstown, 01778					
USMC	0	1	CPL	6483	
ACTIVITY TOTAL:	0	1			
HMX 1 (Executive Support) MCAS Quantico, 02403					
USMC	0	1	CPL	6483	
	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	3			
MAG 29 (HMT 302) MCAS New River, 65434					
USMC	0	1	LCPL	6483	
	0	1	SGT	6483	
ACTIVITY TOTAL:	0	2			
HMM 764 Edwards AFB, 03028					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
FLEET SUPPORT ACTIVITIES - USMC					
4TH MAW (Site Support) JRB Fort Worth, 03007					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MAG 42 (HMM 774) NAS Norfolk, 01774					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			

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

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
MALS 26 (HMH 461) MCAS New River, 01074					
USMC	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 26 (HMLA 167) MCAS New River, 01074					
USMC	0	3	CPL	6483	
ACTIVITY TOTAL:	0	3			
MALS 26 (HMM 261) MCAS New River, 01074					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 26 (HMM 264) MCAS New River, 01074					
USMC	0	1	CPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 26 (HMM 266) MCAS New River, 01074					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 26 (MAG 26) MCAS New River, 01074					
USMC	0	4	LCPL	6483	
	0	2	SGT	6483	
ACTIVITY TOTAL:	0	6			
MALS 26 (VMMT 204) MCAS New River, 01074					
USMC	0	1	CPL	6483	
	0	1	LCPL	6483	
	0	1	SGT	6483	
ACTIVITY TOTAL:	0	3			
MALS 29 (HMH 464) MCAS New River, 01227					
USMC	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 29 (HMLA 269) MCAS New River, 01227					
USMC	0	3	CPL	6483	
ACTIVITY TOTAL:	0	3			

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

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
MALS 29 (HMM 162) MCAS New River, 01227					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 29 (HMM 263) MCAS New River, 01227					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 29 (HMM 365) MCAS New River, 01227					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 29 (MAG 29) MCAS New River, 01227					
USMC	0	4	LCPL	6483	
	0	2	SGT	6483	
ACTIVITY TOTAL:	0	6			
MALS 42 Marietta, 04156					
SMCR	0	4	LCPL	6483	
	0	2	SGT	6483	
ACTIVITY TOTAL:	0	6			
MALS 49 Stewart, 01197					
USMC	0	1	LCPL	6483	
SMCR	0	3	LCPL	6483	
	0	2	SGT	6483	
ACTIVITY TOTAL:	0	6			
MAG 46 (HMLA 775) Camp Pendleton, 04780					
USMC	0	1	CPL	6483	
SMCR	0	1	CPL	6483	
ACTIVITY TOTAL:	0	2			
MALS Augment (HMM 764) MCAS Miramar, 03028					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			

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

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
MALS 16 (HMH 361) MCAS Miramar, 01020					
USMC	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 16 (HMH 462) MCAS Miramar, 01020					
USMC	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 16 (HMH 465) MCAS Miramar, 01020					
USMC	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 16 (HMH 466) MCAS Miramar, 01020					
USMC	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 16 (HMM 161) MCAS Miramar, 01020					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 16 (HMM 163) MCAS Miramar, 01020					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 16 (HMM 165) MCAS Miramar, 01020					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 16 (HMM 166) MCAS Miramar, 01020					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 16 (MAG 16) MCAS Miramar, 01020					
USMC	0	4	LCPL	6483	
	0	2	SGT	6483	
ACTIVITY TOTAL:	0	6			

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

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
MALS 24 (HMT 301) MCAS Kaneohe Bay, 01071					
USMC	0	1	CPL	6483	
	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 24 (Rotary Wing) MCAS Kaneohe Bay, 01071					
USMC	0	2	LCPL	6483	
ACTIVITY TOTAL:	0	2			
MALS 36 (HMM 262) MCAS Futenma, 01024					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 36 (HMM 265) MCAS Futenma, 01204					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 36 (MAG 36) MCAS Futenma, 01024					
USMC	0	4	LCPL	6483	
	0	2	SGT	6483	
ACTIVITY TOTAL:	0	6			
MALS 39 (HMLA 169) Camp Pendleton, 01158					
USMC	0	3	CPL	6483	
ACTIVITY TOTAL:	0	3			
MALS 39 (HMLA 267) Camp Pendleton, 01158					
USMC	0	3	CPL	6483	
ACTIVITY TOTAL:	0	3			
MALS 39 (HMLA 367) Camp Pendleton, 01158					
USMC	0	3	CPL	6483	
ACTIVITY TOTAL:	0	3			
MALS 39 (HMLA 369) Camp Pendleton, 01158					
USMC	0	3	CPL	6483	
ACTIVITY TOTAL:	0	3			

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

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
MALS 39 (HMM 268) Camp Pendleton, 01158					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 39 (HMM 364) Camp Pendleton, 01158					
USMC	0	1	LCPL	6483	
ACTIVITY TOTAL:	0	1			
MALS 39 (HMMT 164) Camp Pendleton, 01158					
USMC	0	1	CPL	6483	
	0	1	LCPL	6483	
	0	1	SGT	6483	
ACTIVITY TOTAL:	0	3			
MALS 39 (HMT 303) Camp Pendleton, 01158					
USMC	0	1	CPL	6483	
	0	3	LCPL	6483	
	0	1	SGT	6483	
ACTIVITY TOTAL:	0	5			
MALS 39 (MAG 39) Camp Pendleton, 01158					
USMC	0	4	LCPL	6483	
	0	2	SGT	6483	
ACTIVITY TOTAL:	0	6			
Site Support Edwards AFB, 03021					
USMC	0	1	SGT	6483	
ACTIVITY TOTAL:	0	1			

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

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	CFY03 OFF	CFY03 ENL	FY04 OFF	FY04 ENL	FY05 OFF	FY05 ENL	FY06 OFF	FY06 ENL	FY07 OFF	FY07 ENL
USMC OPERATIONAL ACTIVITIES - USMC													
CPL	6483		4		0		0		0		0		0
LCPL	6483		4		0		0		0		0		0
SGT	6483		1		0		0		0		0		0
USMC OPERATIONAL ACTIVITIES - SMCR													
CPL	6483		1		0		0		0		0		0
USMC FLEET SUPPORT ACTIVITIES - USMC													
CPL	6483		24		0		0		0		0		0
LCPL	6483		57		0		0		0		0		0
SGT	6483		14		0		0		0		0		0
USMC FLEET SUPPORT ACTIVITIES - SMCR													
CPL	6483		1		0		0		0		0		0
LCPL	6483		7		0		0		0		0		0
SGT	6483		4		0		0		0		0		0
SUMMARY TOTALS:													
USMC OPERATIONAL ACTIVITIES - USMC			9		0		0		0		0		0
USMC OPERATIONAL ACTIVITIES - SMCR			1		0		0		0		0		0
USMC FLEET SUPPORT ACTIVITIES - USMC			95		0		0		0		0		0
USMC FLEET SUPPORT ACTIVITIES - SMCR			12		0		0		0		0		0
GRAND TOTALS:													
USMC - USMC			104		0		0		0		0		0
USMC - SMCR			13		0		0		0		0		0

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

DESIG RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	CFY03 OFF	CFY03 ENL	FY04 OFF	FY04 ENL	FY05 OFF	FY05 ENL	FY06 OFF	FY06 ENL	FY07 OFF	FY07 ENL
TRAINING ACTIVITY, LOCATION, UIC: EAMTMU, NAS Pensacola, 06050													
INSTRUCTOR BILLETS													
USMC													
GYSGT	6483	0	1	0	1	0	1	0	1	0	1	0	1
TOTAL:		0	1	0	1	0	1	0	1	0	1	0	1
TRAINING ACTIVITY, LOCATION, UIC: NAMTRA MARUNIT, MCAS Cherry Point, 31511													
INSTRUCTOR BILLETS													
USMC													
SGT	6483	0	4	0	4	0	4	0	4	0	4	0	4
TOTAL:		0	4	0	4	0	4	0	4	0	4	0	4

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs OFF	PFYs ENL	CFY03 OFF	CFY03 ENL	FY04 OFF	FY04 ENL	FY05 OFF	FY05 ENL	FY06 OFF	FY06 ENL	FY07 OFF	FY07 ENL
NAMTRA MARUNIT, MCAS Cherry Point, 31511													
	USMC	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0
SUMMARY TOTALS:													
	USMC	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0
GRAND TOTALS:													
		0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS	BILLET BASE	CFY03 +/-	CFY03 CUM	FY04 +/-	FY04 CUM	FY05 +/-	FY05 CUM	FY06 +/-	FY06 CUM	FY07 +/-	FY07 CUM
a. OFFICER - USN			Not Applicable										
b. ENLISTED - USN			Not Applicable										
c. OFFICER - USMC			Not Applicable										
d. ENLISTED - USMC													
Operational Billets USMC and AR													
CPL	6483		4	0	4	0	4	0	4	0	4	0	4
LCPL	6483		4	0	4	0	4	0	4	0	4	0	4
SGT	6483		1	0	1	0	1	0	1	0	1	0	1
Fleet Support Billets USMC and AR													
CPL	6483		24	0	24	0	24	0	24	0	24	0	24
LCPL	6483		57	0	57	0	57	0	57	0	57	0	57
SGT	6483		14	0	14	0	14	0	14	0	14	0	14
Staff Billets USMC and AR													
GYSGT	6483		1	0	1	0	1	0	1	0	1	0	1
SGT	6483		4	0	4	0	4	0	4	0	4	0	4
Chargeable Student Billets USMC and AR													
			6	0	6	0	6	0	6	0	6	0	6
SMCR Billets													
CPL	6483		2	0	2	0	2	0	2	0	2	0	2
LCPL	6483		7	0	7	0	7	0	7	0	7	0	7
SGT	6483		4	0	4	0	4	0	4	0	4	0	4
TOTAL USMC ENLISTED BILLETS:													
Operational			9	0	9	0	9	0	9	0	9	0	9
Fleet Support			95	0	95	0	95	0	95	0	95	0	95
Staff			5	0	5	0	5	0	5	0	5	0	5
Chargeable Student			6	0	6	0	6	0	6	0	6	0	6
SMCR			13	0	13	0	13	0	13	0	13	0	13

II.B. PERSONNEL REQUIREMENTS

II.B.I ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE TITLE: M-102-6483, Helo Deceptive Electronic Countermeasures Intermediate Maintenance
COURSE LENGTH: 12.8 Weeks
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.26

TRAINING		ACDU/TAR	CFY03		FY04		FY05		FY06		FY07	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
NAMTRA MARUNIT, MCAS Cherry Point												
	USMC	USMC		23		23		33		33		33
		SMCR		1		1		1		1		1
		TOTAL:		34		34		34		34		34

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the AN/AVS-9(V) Night Vision Image Intensifier Set and, therefore, are not included in Part III of this NTSP:

III.A.1. Initial Training Requirements

III.A.2. Follow-on Training

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

III.A.2. FOLLOW-ON TRAINING

III.A.2.a. EXISTING COURSES

CIN, COURSE TITLE: M-102-6483, Helo Deceptive Electronic Countermeasures Intermediate Maintenance
TRAINING ACTIVITY: NAMTRA MARUNIT
LOCATION, UIC: MCAS Cherry Point, 31511

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY03		FY04		FY05		FY06		FY07		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	34		34		34		34		34	ATIR
	34		34		34		34		34	Output
	6.0		6.0		6.0		6.0		6.0	AOB
	6.0		6.0		6.0		6.0		6.0	Chargeable

SOURCE: USMC **STUDENT CATEGORY:** SMCR

CFY03		FY04		FY05		FY06		FY07		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	1		1		1		1		1	ATIR
	1		1		1		1		1	Output
	0.2		0.2		0.2		0.2		0.2	AOB
	0.0		0.0		0.0		0.0		0.0	Chargeable

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the AN/AVS-9(V) Night Vision Image Intensifier Set, and, therefore, are not included in Part IV of this NTSP:

IV.A. Training Hardware

- IV.A.2. Training Devices

IV.B. Courseware Requirements

- IV.B.1. Training Services

IV.C. Facility Requirements

- IV.C.1. Facility Requirements Summary (Space/Support) by Activity
- IV.C.2. Facility Requirements Detailed by Activity and Course
- IV.C.3. Facility Project Summary by Program

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

IV.A. TRAINING HARDWARE

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

CIN, COURSE TITLE: C-198-3072, AN/AVS-9 Aviators Night Vision Imaging System (ANVIS) Intermediate Maintenance (Track M-102-6483)
TRAINING ACTIVITY: NAMTRA MARUNIT
LOCATION, UIC: MCAS Cherry Point, 31511

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
030	AN/AVS-9 (V) Aviators Night Vision Imaging System (Part No. AN/AVS-9(V))	10	Oct 02	GFE	Onboard
031	Battery Compartment (Part No. 268465)	6	Oct 02	GFE	Onboard
032	Binocular Assembly (Part No. 264359-8)	6	Oct 02	GFE	Onboard
033	Helmut Mount Plate Assembly (Part No. 264317-3)	6	Oct 02	GFE	Onboard
034	Quick Don Mount Assembly (Part No. 3151AS150)	6	Oct 02	GFE	Onboard
035	Mounting Plate (Part No. ANV-126-067)	1	Oct 02	GFE	Onboard
ST					
214	Test Set Adapter (Part No. ANS-126-004-1)	1	Oct 02	GFE	Onboard
215	Purge Adapter (Part No. 5007665)	1	Oct 02	GFE	Onboard
216	Fire Control Purging Kit (Part No. SC4931-95CLJ54)	1	Oct 02	GFE	Onboard
217	Night Vision Tool Kit (Part No. 269776)	7	Oct 02	GFE	Onboard
218	Gas Cylinder Valve (Part No. 269390-1)	1	Oct 02	GFE	Onboard
GPETE					
405	Multimeter (Part No. FLUKE87)	1	Oct 02	GFE	Onboard
SPETE					
504	Electronic System Test Set (Part No. ANV-126-004)	1	Oct 02	GFE	Onboard

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

CIN, COURSE TITLE: C-198-3072, AN/AVS-9 Aviators Night Vision Imaging System (ANVIS) Intermediate Maintenance (Track M-102-6483)
TRAINING ACTIVITY: NAMTRA MARUNIT
LOCATION, UIC: MCAS Cherry Point, 31511

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Instructor Lesson Plan	2	Oct 02	Onboard
Student Tests	6	Oct 02	Onboard
Trainee Guide	36	Oct 02	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: C-198-3072, AN/AVS-9 Aviators Night Vision Imaging System (ANVIS) Intermediate Maintenance (Track M-102-6483)
TRAINING ACTIVITY: NAMTRA MARUNIT
LOCATION, UIC: MCAS Cherry Point, 31511

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
MSDS - CJNTD Material Safety Data Sheet - Denatured Alcohol, MIL-A-6091/837015	Hard copy	8	Oct 02	Onboard
MSDS - CJRGS Material Safety Data Sheet - Aircraft and Instrument Grease, DC-33	Hard copy	8	Oct 02	Onboard
NA 16-35AVS9-3 Intermediate Maintenance Manual with IPB	Hard copy	8	Oct 02	Onboard
OPNAVINST 4790.2 series The Naval Aviation Maintenance Program	Digital	8	Oct 02	Onboard
TM ANV-126 Model ANV-126 Night Vision Device Test Set For Ground Support Maintenance	Hard copy	8	Oct 02	Onboard

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
DA	Began Fleet Introduction of AN/AVIS-9(V) TACAIR Version to the AV-8B, F-14, F/A-18, and EA-6B Communities	Mar 97	Complete
OPTEVFOR	Completed Certification Testing on AN/AVIS-9(V) TACAIR Version	Dec 97	Complete
DA	Approved ANVIS User's Logistics Support Summary	Oct 98	Complete
TSA	Began Initial AN/AVIS-9(V) Training for NATEC Personnel	Jul 99	Complete
DA	Achieved MSD and NSD for the TACAIR Version of AN/AVIS-9(V)	Sep 99	Complete
TSA	Began Delivery of TTE	Feb 00	Complete
OPO	Distributed Initial NTSP	Mar 00	Complete
TSA	Completed Certification Testing on AN/AVIS-9(V) Rotary Wing Version	Dec 00	Complete
DA	Began Delivery of CD-ROM and Hard Copy Technical Manuals	Jan 01	Complete
TSA	Began TACAIR Follow-on Training	Jan 01	Complete
DA	Began AN/AVIS-9(V) Delivery in Rotary Wing and KC-130 Communities	FY01	Complete
TSA	Completed Initial AN/AVIS-9(V) Training for NATEC Personnel	Nov 01	Complete
DA	Achieved MSD and NSD for Rotary Wing AN/AVIS-9(V)	Aug 02	Complete
TSA	Began Intermediate Level ANVIS Follow-on Training at VMAT 203	Oct 02	Complete
TSA	Distributed Draft NTSP for Review	Jan 03	Complete
DA	Complete Deliveries of Rotary Wing Version of ANVIS	Sep 03	On schedule
DA	Complete Deliveries of TACAIR Version of ANVIS	Sep 03	On schedule
TSA	Begin Deliveries of Generation IV Image Intensifier Assemblies for AN/AVS-9(V)	FY03	On schedule
TSA	Onload ANVIS to AMTCS	FY03	On schedule
TSA	Replace MATMEP with AMTCS	FY03	On schedule

PART VI - DECISION ITEMS / ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS
Conduct Training Effectiveness Evaluation on AN/AVS-9	NAVAIR PMA205	FY04	Pending

PART VII - POINTS OF CONTACT

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SUMMARY OF COMMENTS

ON THE

AN/AVS-9(V) NIGHT VISION IMAGE INTENSIFIER SET

DRAFT NAVY TRAINING SYSTEM PLAN

OF JANUARY 2003

N78-NTSP-A-50-0207/D

Prepared by: ATCS Jeff Hall, AIR-3.4.1
Contact at: (301) 757-3109
Date submitted: 12 May 2003

COMMENTS / RECOMMENDATIONS ON THE
PROGRAM TITLE
DRAFT NAVY TRAINING SYSTEM PLAN

TABLE OF CONTENTS

***ACTIVITIES PROVIDING COMMENTS*:** *(List in order of precedence of commenting activities.)*

Chief of Naval Operations (N00T) 1

CNATT 4

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COMMENTS / RECOMMENDATIONS ON THE
PROGRAM TITLE
DRAFT NAVY TRAINING SYSTEM PLAN

ACTIVITY NAME: OPNAV N00T

COMMENT: Section 1, page I-6, H.4, para 2. Recommend current para be replaced with following para: "Maintenance manpower requirements are to be evaluated upon initiation of AN/AVS-9(V) specific training in course C-602-2035 Aircrew Survival Equipmentman Common Core Class A1. Evaluation conducted by the HPPR process will determine requirement for a change to existing course content."

Rational: Introduction of AN/AVS-9(V) may require change to course of instruction

INCORPORATED: *YES*

REMARKS: *NONE*

ACTIVITY NAME: OPNAV N00T

COMMENT: Section I page I-16, J6. Human Systems Integration. N/A

1. The NTSP needs to describe the training concept in more detail. Recommend adding this information to each course description provided under the training concept:

a. Total hours of instruction by delivery method (Example: 20 Hours CAI and 10 Hours ICW)
b. Media (Text, Audio (narration); 3D Animations and 3D static imagery)
c. Instructional Strategies by Hour (Simulation 4 hrs; Tutorial 10)
d. Evaluation Strategies (define types of tests; determined by behavior in Learning Objective. Se MIL-HDBK 29612-2)
e. Level of Interactivity (Example: Level IV - 4 hours; Level 2 - 20 hours)
f. Level of Learning (Levels I - IV defined by the required behavior in the Learning Objective. Referenced in MIL-HDBK-29612-2 and 3)

This information allows the sponsor to determine adequate amount of resources and correct number of instructors.

2. The NTSP should describe the extent and manner in which the delivery method and training media will faithfully reflect the system design as a function of the training objective. The issue of training fidelity, or the concordance between the training situation and the actual system, reflects another close association between training and design. When the training objective is to provide expertise in following procedures, the degree of physical fidelity, the agreement between the physical human interfaces in the training situation and in the system, must be high. However, if the training objective is to provide expertise on cognitive capabilities, such as decision making, diagnosis, maintaining situation awareness, and integration of information from numerous sources, it is conceptual fidelity rather than physical fidelity that must be maximized. Conceptual fidelity refers to the fidelity of the training system's representation of the battlespace situation, and the response of the warfare system in that battlespace. Recommend a description, under HSI, of the physical/conceptual fidelity requirements for the training system.

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3. The amount of training required (the training burden) to achieve required performance capability is a direct function of the adequacy of the system design. It is a human factors engineering principle that the more effective is the design of human interfaces, the less the training burden. It has been estimated by the Naval Research Advisory Council (NRAC) that proper application of human factors engineering principles and data in the design of equipment will reduce the need for training by at least 20%. Where the human interface is intuitive, simplified, and in accord with user expectancies, the training burden must by definition be less. Recommend describing in the HSI section how system design is impacting the training burden (pro or con) and how system design and required Mission/Job Tasks were used to determine amount of training, required delivery system/media and how instructional strategies (simulation, gaming, drill/practice, tutorials, etc) were chosen to bear the burden of poor system design (or selected to strong system design).

4. The NTSP also needs to define the concept for supporting the training system. Describe how the courses will be kept current. Define the method of evaluation to be used and how changes will be made. Define how ECPs/modifications and Training equipment Change Requests will be evaluated to identify affect on the human and affect on MPT. Define how changes to the courseware will be distributed, implemented and evaluated.

5. The program should have defined methods to reduce the incidence of human error, and techniques to make the ANVIS-9 system error tolerant, including conducting error likelihood analyses, conducting human-in-the-loop simulations, and designing HMI to reduce the incidence and impact of human error. HSI theory holds that, while errors can be attributed to deficiencies on the part of the human (slips, lapses, inattention, fatigue, insufficient skill or knowledge, etc.) the majority of errors are due to factors external to the individual, and, as such, are preventable. These external factors can be classified as situational factors and design factors. Situational factors include those aspects of the operational setting, other than design, which influence human error incidence. These include: task difficulty, time constraints, interfering activities, poor communications, and excessive workloads. Design factors, which contribute to human errors, include aspects of the system hardware, software, procedures, environment and training, which affect human error likelihood. Design factors encompass such aspects of the system as equipment design features; information characteristics (availability, access, readability, currency, accuracy and meaningfulness); workspace arrangement; procedures and processes; environments; and training. Together the situational factors and the design factors constitute the human interfaces. Effort is also required to formalize the process for identifying potential vulnerabilities where human error will compromise critical information, with emphasis on error situations which involve cognitive performance, such as decision making, procedures following, and maintaining situation awareness. Design techniques should have been developed to ensure that humans will make correct decisions, will accurately follow procedures, and will maintain security situation awareness. How has this information influenced the design of the training system? The AN/AVS-9(V) requires training that will minimize human error and maximize the

ability of the human to process information and make correct decisions while continuing to maintain situational awareness. The HSI section must include a discussion of these design decisions and state the influence on the training system design.

6. As stated in the last paragraph, HSI is extremely important for this system. In Naval aviation, there has been a history of human performance problems with night vision systems. It is essential that MPT decisions be determined in conjunction with system design. Recommend providing a more detailed discussion (using the comments above) of how HSI will influence the design of the system and MPT requirements. The HSI section must be rewritten to discuss the nine HSI elements and describe how these elements are being addressed/considered for the design of the system including ECPs, other modifications and TECRs. The nine HSI elements (manpower, personnel, training, habitability, personnel survivability, health, safety, environmental, and human factors) are focused on enabling, enhancing, supporting and maintaining required levels of human performance capability in systems. In order to accomplish this there must be a synergistic mutual interrelationship between among all of the HSI elements that extends from system conceptual development through detail design. The trade-off decisions made by the Weapon System Program Manager have a direct impact on how the training will be designed, how many people are required and what MOSs are affected. MPT are the three HSI elements that will ALWAYS bear the burden of a weak system design. It is imperative that these impacts are reflected in the design, implementation and evaluation of the total training system.

7. The NTSP is the sole communication tool that reports Who, What, When, Where, How, and How Much -- it is critical that the NTSP be a complete, viable plan that reflects the methodology for analyzing, designing, developing, producing, implementing, evaluating and maintaining manpower/personnel and training solutions that will ensure transfer of training to the job. Requirements for human performance and proficiency drive development of training programs and human interface design concepts. In order to ensure that human performance requirements and objectives influence design, efforts to provide effective human performance, involving both training development and design, must be initiated early in system development. Throughout the system design, development and modification processes, the identification and analysis of training requirements must parallel the development of design concepts since they are both directed at the same objective, that of producing effective, responsive and proficient human performance.

INCORPORATED: *YES*

REMARKS: *NONE*

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ACTIVITY NAME: N00T

COMMENT: Section I page 1, section C. Change title "Director of Naval Training" to "Director of Naval Education and Training".
INCORPORATED: *YES*

REMARKS: *NONE*

ACTIVITY NAME: N00T

COMMENT: Section VII page 1. Update contact information for Capt Merritt

Correct email: terry.merritt@navy.mil
Correct number: (703) 602-5172
FAX: (703) 602-5175

Section VII page 1. Update contact information for Bob Zweibel
Correct email:
robert.zweibel@navy.mil
INCORPORATED: *YES*

REMARKS: *NONE*

ACTIVITY NAME: CNATT FID

COMMENT: Section I, page I-10, H.4.b. Follow-on Training. Add into this paragraph the CIN of the course taught C-198-3072, to keep this training from being confused with the Aircrew Night lab that immediately follows this paragraph. Also, in this section the segment course needs to replace the track CIN. Taking a quick look at this leads one to believe that it takes 88 days to train the AN/AVS-9(V).

INCORPORATED: *YES*

REMARKS: C-198-3072 is not recognized as a valid CIN in OATMS. Moved paragraph in question up to the prior page to keep it away from the Aircrew Night lab that immediately follows.

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ACTIVITY NAME: CNATT FID

COMMENT: Section II, page II-14, II.B.1. Annual Training Input Requirements. CETAR's shows 2003 and out years throughput to be 34 total USMC and SMCR. That carries over to page III-2, III.A.2.a so that the ATIR line and Output line change to 34 for 2003 and out.

INCORPORATED: *YES*

REMARKS: *NONE*

ACTIVITY NAME: CNATT FID

COMMENT: Section IV, page IV-2, IV.A.I. Several items show delayed status. Request reason and estimated delivery date.

215- Purge Adaptor (Part No. 5007665)
216- Fire Control Purging Kit (Part No. Sc4931-95CLJ54)
217- Night Vision Tool Kit (Part No. 269776)
405- Multimeter (Part No. Fluke 87)

INCORPORATED: *YES*

REMARKS:

ACTIVITY NAME: CNATT FID

COMMENT: Section 1, page I-1, C.- Change Training Agency "NETC (ETE-32)" to "CNATT FID (N5)"
INCORPORATED: *YES*

REMARKS: *NONE*

ACTIVITY NAME: HPC

COMMENT: There is no mention of how this training will be delivered to the Reserve Forces? Will their training be different? Include the training plan for the reserve forces.
INCORPORATED: *YES*

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REMARKS: *NONE*