APPROVED

NAVY TRAINING SYSTEM PLAN

FOR THE

GROUND PROXIMITY

WARNING SYSTEM

N88-NTSP-A-50-8815B/A

SEPTEMBER 1998

GROUND PROXIMITY WARNING SYSTEM

EXECUTIVE SUMMARY

This Approved Navy Training System Plan identifies the manpower, personnel, and training requirements associated with the Ground Proximity Warning System (GPWS). The GPWS is classified by type aircraft into three categories (CAT) I, II, and III. GPWS CAT I and CAT III will be a Non-Developmental Item acquisition. GPWS CAT II is a Navy in-house software development program for each individual aircraft's mission computer. GPWS CAT I and CAT III are in Phase III, Production Fielding/Deployment and Operational Support, of the Weapon System Acquisition Process.

The GPWS is a safety alert system which assists in preventing controlled flight into terrain mishaps by providing pilots and applicable Naval Flight Officers with timely and credible voice warning of unintentional or unsafe closure with the ground or water. The GPWS accepts inputs from existing aircraft systems such as radar altimeter, airspeed, barometric altitude rate, glideslope deviation, Inertial Navigation System/Attitude-Heading-Reference System, Air Data Computer, and gear and flap positions. It analyzes this data to detect a flight path, which will result in an unsafe proximity to the ground. The GPWS also recognizes descent below minimums, descent below glideslope, and landing approaches with improper landing configurations; i.e., no flaps or gear.

Planned users of the GPWS CAT I are C-130T and KC-130F/R/T, GPWS CAT II users are AV-8B and F/A-18 series, and GPWS CAT III users are CH-53D/E and MH-53E. Potential users of the GPWS CAT I are C-2A(R), P-3C, S-3B, EA-6B, and E-2C; GPWS CAT II are F-14B, F-14D, and T-45A; and GPWS CAT III are CH-46E, SH-60B, SH-60F, AH-1W, UH-1N, and V-22A.

Maintenance for GPWS CAT I and CAT III will be a two-level concept, organizational and commercial depot level maintenance. GPWS CAT II is organizational level maintenance and will not change. Squadron manpower requirements do not change due to the introduction of the GPWS. Organizational level maintenance on GPWS CAT I and III will be performed by Navy personnel from the Aviation Electrician's Mate rating with the appropriate aircraft Navy Enlisted Classification (NEC) and by Marine Corps personnel with the appropriate Aircraft Electrical Military Occupational Specialty (MOS). GPWS CAT II organizational level maintenance will be performed by Navy personnel from the Aviation Electronics Technician rating with the appropriate aircraft NEC and by Marine Corps personnel with the appropriate Aircraft Avionics MOS.

Existing aircraft organizational maintenance courses will be modified by the Maintenance Training Unit or Fleet Replacement Enlisted Skills Training course model manager to accommodate GPWS training. Flight crew operator training courses will be modified by the Fleet Readiness Squadron course model manager to accommodate GPWS training.

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LIST OF ACRONYMS

AE	Aviation Electrician's Mate
AFCS	Automatic Flight Control System
AMIST	Aviation Maintenance In-Service Training
AMTCS	Aviation Maintenance Training Continuum System
AWSTS	Airborne Mine Counter Measures Weapon System Training School
BUPERS	Bureau of Naval Personnel
CAT	Category
CBT	Computer-Based Training
CIN	Course Identification Number
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
COMNAVAIRESFOR	Commander Naval Air Reserve Force
CPD	Control Panel Display
DT	Developmental Test
FREST	Fleet Replacement Enlisted Skills Training
FRS	Fleet Readiness Squadron
FY	Fiscal Year
GPWC	Ground Proximity Warning Computer
GPWS	Ground Proximity Warning System
HMT	Marine Helicopter Training Squadron
ILSP	Integrated Logistics Support Plan
MATMEP	Maintenance Training Management and Evaluation Program
MCAS	Marine Corps Air Station
MOS	Military Occupational Specialty
MTIP	Maintenance Training Improvement Program
MTU	Maintenance Training Unit
NA	Not Applicable
NAMTRAGRU DET	Naval Air Maintenance Training Group Detachment
NAS	Naval Air Station

GROUND PROXIMITY WARNING SYSTEM

NATEC	Naval Air Technical and Engineering Service Command
NAVAIRSYSCOM	Naval Air Systems Command
NAVAIRWARCENACDIV	Naval Air Warfare Center Aircraft Division
NAVICP	Naval Inventory Control Point
NEC	Navy Enlisted Classification
NTSP	Navy Training System Plan
OPNAVINST	Chief of Naval Operations Instruction
OPO	Office of the Chief of Naval Operations Principal Official
OT	Operational Test
PMA	Program Manager, Naval Air Systems Command
PQS	Personnel Qualification Standards
RFT	Ready For Training
TD	Training Device
TTE	Technical Training Equipment
VMGRT	Marine Aerial Refueler Transport Training Squadron
VX	Air Test and Evaluation Squadron
WRA	Weapon Replaceable Assembly

GROUND PROXIMITY WARNING SYSTEM

PREFACE

This Approved Navy Training System Plan (NTSP) for the Ground Proximity Warning System (GPWS) updates the Proposed GPWS Navy Training Plan (NTP), A-50-8815B/P dated June 1997. Update of this document was accomplished through review of Manpower, Personnel, and Training (MPT) requirements associated with the GPWS and includes updates to milestones, action items, and points of contact.

PART I - TECHNICAL PROGRAM DATA

A. TITLE-NOMENCLATURE-PROGRAM

1. **Nomenclature-Title-Acronym.** Ground Proximity Warning System (GPWS)

2. **Program Element.** 204161N, Sub-Element W0572-06

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 (N880G2)

OPO Resource Sponsor ..... CNO (N880G2)

Marine Corps Program Sponsor..... CMC (ASL-34)

Developing Agency..... NAVAIRSYSCOM (PMA209)

Training Agency ..... CINCLANTFLT
CINCPACFLT
CNET
COMNAVAIRESFOR

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

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

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

Marine Corps Combat Development Command (MCCDC)
Manpower Management ..... TFS Division

D. SYSTEM DESCRIPTION

1. Operational Uses. The GPWS is a safety alert system which assists in preventing controlled flight into terrain mishaps by providing pilots with timely and credible warning of unintentional or unsafe closure with the ground or water. The GPWS is classified by type aircraft into three categories (CAT). GPWS CAT I installations will consist of a Ground Proximity Warning Computer (GPWC), audio amplifier, and software. GPWS CAT II installations will consist of software updates to existing mission computers and Operational Flight Profiles (OFPs). GPWS CAT III installations will consist of a GPWC and software. The GPWS CAT I is designated the AN/ASN-167(V). The GPWS CAT II will not receive a separate designation since it is a software change only. The GPWS CAT III designation is AN/AYQ-23(V).

Planned users of the GPWS CAT I are C-130T and KC-130F/R/T, GPWS CAT II users are AV-8B and F/A-18 series, and GPWS CAT III users are CH-53D/E and MH-53E.

Potential users of the CAT I GPWS are C-2A(R), P-3C, S-3B, EA-6B, and E-2C; GPWS CAT II are F-14B, F-14D, and T-45A; and GPWS CAT III are CH-46E, SH-60B, SH-60F, AH-1W, UH-1N, and V-22A.

2. Foreign Military Sales. Not Applicable (NA).

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST.

Developmental Test (DT) for GPWS CAT I was completed in January 1992 by Force Warfare Test Directorate personnel at Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, Maryland. VX-1, Naval Air Station (NAS), Patuxent River began initial Operational Test (OT) in June 1992. OT was terminated in October 1992. VX-1 resumed the OT in March 1993 and satisfactorily completed it in September 1993.

DT for GPWS CAT II was satisfactorily completed on the AV-8B in February 1996 by Naval Air Warfare Center Weapons Division, China Lake, California, and the F/A-18 series in March 1996 by NAVAIRWARCENACDIV Patuxent River. OT was satisfactorily completed on the AV-8B in November 1996 by VX-9, Naval Air Weapons Station, China Lake, and the F/A-18 series in October 1996 by Strike Aircraft Test Directorate, NAS, Patuxent River. GPWS CAT II was authorized for fleet use on the AV-8B in March 1997 and F/A-18 series in October 1996.

DT for GPWS CAT III on the CH-53E began in August 1995 and was completed in April 1996 by NAVAIRWARCENACDIV Patuxent River. OT began in April 1996 and was completed in July 1996 by VX-1, NAS Patuxent River.

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

The GPWS replaces existing MK II systems on the C-130T aircraft only and is new equipment on all other platforms.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The GPWS integrates data from existing flight sensors and warns the pilot of an impending controlled flight into terrain.

The GPWS accepts inputs such as radar altitude, air data computer, airspeed, barometric altitude rate, glide slope deviation, and gear and flap positions. It analyzes this data to detect a flight path, which will result in an unsafe approach to the ground. The GPWS also recognizes descent below minimums, descent below glide slope, and landing approaches with improper landing configuration; i.e., no flaps or gear as applicable.

Upon detecting an unsafe approach to terrain, the GPWS generates a specific voice and visual warning to the pilot. The warning continues until the aircraft is maneuvered out of the unsafe situation.

The GPWS is available in either analog or digital format. Circuits are included in the GPWS to accept a number of different input data formats on a pin selectable basis. Some form of air data computer is required to provide airspeed and barometric altitude rate data on some platforms. The GPWS includes automatic self-test indications.

The following is a list of components for the GPWS CAT I and III:

a. Ground Proximity Warning Computer. The GPWC integrates and analyzes data from existing aircraft flight sensors. The GPWC gathers, records, and stores aircraft flight data to form a flight historical record.

b. Audio Amplifier. The audio amplifier is designed to increase the audio signal over the inter-communications system to alert the flight crew of an unsafe approach to terrain.

2. Physical Description. The primary component of the GPWS CAT I and CAT III is the GPWC. Its weight is 7.5 pounds and dimensions are 15.3 inches long, 2.4 inches wide, and 7.8 inches high. As other planned aircraft become users additional avionics may be required depending on the requirement, availability, and quality of existing aircraft sensor inputs.

3. New Development Introduction. GPWS CAT I and CAT III will be introduced by retrofitting existing aircraft through the Engineering Change Proposal process. GPWS CAT II will be introduced by issuing a change to the mission computer software.

4. Significant Interfaces. GPWS computers are programmable to accept multiple input from existing aircraft systems. The following is a list of possible inputs for the GPWS:

a. Primary Inputs

- Radar altitude
- Barometric rate of descent
- Gear, flap, and speed brake positions
- Glide slope and localizer deviation

- Airspeed
- Minimum altitude

b. Enhancing Inputs

- Inertial Navigation System
- Heading
- Altitude
- G loading
- Angle of attack (CAT I only)
- Distance Measuring Equipment range

5. New Features, Configurations, or Material. NA.

H. CONCEPTS

1. Operational Concept. The GPWS computer is completely automatic and operates continuously in flight.

2. Maintenance Concept. The Naval Aviation Maintenance Program, OPNAVINST 4790.2G, provides general direction and guidance regarding the maintenance concept for the GPWS. Maintenance for GPWS CAT I and CAT III will be a two-level concept, organizational and commercial depot. The intermediate maintenance activities will not have GPWS CAT I and CAT III maintenance capabilities. GPWS CAT II will not change current maintenance concepts for applicable aircraft mission computers.

a. Organizational. Organizational level maintenance on GPWS CAT I and III will be performed by Navy personnel from the Aviation Electrician's Mate (AE) rating with the appropriate aircraft Navy Enlisted Classification (NEC) and by Marine Corps personnel with the appropriate Aircraft Electrical Military Occupational Specialty (MOS). Since GPWS CAT II is a software change to the aircraft's mission computer, organizational level maintenance will be performed by Navy personnel from the Aviation Electronics Technician rating with the appropriate aircraft NEC and by Marine Corps personnel with the appropriate Aircraft Avionics MOS.

(1) Preventive Maintenance. Preventive maintenance at the organizational level will consist of corrosion control.

(2) Corrective Maintenance. Corrective maintenance at the organizational level will be limited to replacing the defective Weapon Replaceable Assembly (WRA). The failed WRA will be returned to the depot facility for repair. The GPWS has an organizational level Mean Time To Repair of 15 minutes.

b. Intermediate. There will be no maintenance capabilities at the intermediate level for GPWS components.

c. Depot. Depot level maintenance of the GPWS will be performed at the respective manufacturers listed in Paragraph J.1. Maintenance will consist of repair of the WRA.

d. Interim Maintenance. The contractor will provide interim maintenance support for the GPWS CAT I and CAT III program via warranty and repair of repairables provisions. No interim maintenance will be required for GPWS CAT II.

e. Life-Cycle Maintenance Plan. NA.

3. Manning Concept. The GPWS units are completely automatic. Therefore, the introduction of the GPWS to the Navy and Marine Corps will not require additional operator or maintenance manpower. No changes are required to existing billet structures or to available skill levels. Organizational maintenance will be performed by existing Navy AE personnel with the appropriate aircraft NEC and Marine Corps personnel with the appropriate Aircraft Electrical MOS.

4. Training Concept. The training concept for the GPWS will consist of initial and follow-on training for operator and organizational maintenance personnel. Initial training will be provided by the contractor for Fleet Readiness Squadron (FRS) instructors, Naval Air Maintenance Training Group Detachment (NAMTRAGRU DET) Maintenance Training Unit (MTU) instructors, and Naval Air Technical and Engineering Service Command (NATEC) technical representatives. Follow-on training will be provided by the appropriate FRS (operator) and MTU or Fleet Replacement Enlisted Skills Training (FREST) (maintenance) for fleet units.

The established training concept for most aviation maintenance training divides "A" School courses into two or more segments called Core and Strand. The "C" School courses are also divided into separate Initial and Career training courses. "A" School Core courses include general knowledge and skills training for the particular rating, while "A" School Strand courses focus on the more specialized training requirements for that rating and a specific aircraft or equipment, based on the student's fleet activity destination. Strand training immediately follows Core training and is part of the "A" School. Upon completion of Core and Strand "A" School, graduates attend the appropriate Initial "C" School for additional specific training. Initial "C" School training is intended for students with a paygrade of E-4 and below. Career "C" School training is provided for E-5 and above personnel to enhance skills and knowledge within their field.

a. Initial Training. Initial operator and organizational maintenance training requirements for GPWS CAT I and CAT III are listed below. Initial training for CAT II (AV-8B and F/A-18 series) is not required. Sundstrand Data Corporation provided initial training for GPWS CAT I DT and OT. Initial training for GPWS CAT III, provided by Cubic Defense Systems, Inc., was completed in January 1995 for DT and in April 1996 for OT. CAT II not affected due to being a software update only.

(1) Operator

Title ..... GPWS CAT I Operator

Description	Provide GPWS CAT I Operator training for instructors.
Location	VMGRT-253, Marine Corps Air Station (MCAS) Cherry Point
Length	1 day (estimated)
RFT date	Second quarter FY99
TTE/TD	GPWS CAT I for interface with the Operational Flight Trainer.
Prerequisite	KC-130 Fleet Replacement Pilot Category I

Note: CAT II is a software update only. There are no associated training requirements.

Title	**GPWS CAT III Operator**
Description	Provide GPWS CAT III Operator training for instructors.
Location	HMT-302, MCAS New River
Length	1 day (estimated)
RFT date	First quarter FY99
TTE/TD	GPWS CAT III for interface with the Operational Flight Trainer.
Prerequisite	CH-53E Fleet Replacement Pilot Category I

Title	**GPWS CAT III Operator**
Description	Provide GPWS CAT III Operator training for instructors.
Location	Airborne Mine Counter Measures Weapon System Training School (AWSTS), Norfolk
Length	1 day (estimated)
RFT date	First quarter FY99
TTE/TD	GPWS CAT III for interface with the Operational Flight Trainer.
Prerequisite	D-2C-2773, MH-53E Fleet Replacement Pilot Category I

b. Follow-on Training

(1) Operator. The following pilot tracks will require updating by the FRS concurrent with the initial installation of the GPWS in corresponding aircraft. There will be no change to the track length or student throughput. Courses are currently on line, the RFT date reflects the date when GPWS mods to the courses will be completed. CAT II is not affected due to being a software update only.

Title	**KC-130F/R/T Fleet Replacement Pilot Category 1**
CIN	None
Model Manager ...	VMGRT-253
Description	Trains KC-130F/R/T Aircraft Category I Fleet Replacement Pilots in the skills and techniques to perform as a pilot and copilot.
Location	VMGRT-253, MCAS Cherry Point
Length	148 days
RFT date	Fourth quarter FY99
Skill identifier.....	MOS 7556
TTE/TD	GPWS CAT I for interface with Operational Flight Trainer.
Prerequisites	Q-2A-0010, Joint T-34C Intermediate Flight Training, Final Secret clearance

Note: Navy C-130T pilots are trained at Little Rock Air Force Base.

Title	**CH-53E Fleet Replacement Pilot Category 1**
CIN	None
Model Manager ...	HMT-302
Description	Trains CH-53E Aircraft Category I Fleet Replacement Pilots in skills and techniques to perform as pilot/copilot.
Location	HMT-302, MCAS New River
Length	101 days
RFT date	First quarter FY99
Skill identifier.....	MOS 7566
TTE/TD	GPWS CAT III for interface with the Operational Flight Trainer.
Prerequisites	Q-2A-0010, Joint T-34C Intermediate Flight Training, Final Secret clearance

Title	**MH-53E Fleet Replacement Pilot Category 1**
CIN	D-2C-2773
Model Manager ...	AWSTS, NAS Norfolk
Description	Trains MH-53E Aircraft Category I Fleet Replacement Pilots in the skills and techniques to perform as a pilot and copilot.
Location	AWSTS, NAS Norfolk
Length	101 days
RFT date	First quarter FY99
Skill identifier.....	1311
TTE/TD	GPWS CAT III for interface with the Operational Flight Trainer.
Prerequisites	Q-2A-0009, Advanced T45 Strike Flight, Final Secret clearance

(2) Maintenance. Organizational level maintenance training courses for aircraft electrical systems are currently on line at MTU 1031,VMGRT-253 FREST, and HMT-302 FREST. Modifications will be required to include GPWS concurrent with installation. Training course modifications will not affect track length or student throughput. Courses are currently on line, the RFT date reflects the date when GPWS modifications to the courses will be completed. CAT II is not affected due to being a software update only.

Title	**KC-130 Aircraft Communications/Navigation System Technician Managed On-The-Job Training**
CIN	C-102-4511 (as part of training track M-102-0451)
Model Manager ...	VMGRT-253 FREST, MCAS Cherry Point
Description	Upon completion of this course, Aviation Electrician's Mates will have sufficient knowledge/theory of the communication and navigation systems of the KC-130 aircraft, including theory of operation, troubleshooting, fault isolation, and maintenance to perform, under close supervision, organizational maintenance in the squadron working environment.
Location	VMGRT-253 FREST, MCAS Cherry Point
Length	46 days
RFT date	Currently Available
Skill identifier	AE 8318, MOS 6316
TTE/TD	GPWS CAT I for the Integrated Avionics Trainer

Title	**MH-53E Fleet Replacement Pilot Category 1**
CIN	D-2C-2773
Model Manager ...	AWSTS, NAS Norfolk
Description	Trains MH-53E Aircraft Category I Fleet Replacement Pilots in the skills and techniques to perform as a pilot and copilot.
Location	AWSTS, NAS Norfolk
Length	101 days
RFT date	First quarter FY99
Skill identifier.....	1311
TTE/TD	GPWS CAT III for interface with the Operational Flight Trainer.
Prerequisites	Q-2A-0009, Advanced T45 Strike Flight, Final Secret clearance

(2) Maintenance. Organizational level maintenance training courses for aircraft electrical systems are currently on line at MTU 1031,VMGRT-253 FREST, and HMT-302 FREST. Modifications will be required to include GPWS concurrent with installation. Training course modifications will not affect track length or student throughput. Courses are currently on line, the RFT date reflects the date when GPWS modifications to the courses will be completed. CAT II is not affected due to being a software update only.

Title	**KC-130 Aircraft Communications/Navigation System Technician Managed On-The-Job Training**
CIN	C-102-4511 (as part of training track M-102-0451)
Model Manager ...	VMGRT-253 FREST, MCAS Cherry Point
Description	Upon completion of this course, Aviation Electrician's Mates will have sufficient knowledge/theory of the communication and navigation systems of the KC-130 aircraft, including theory of operation, troubleshooting, fault isolation, and maintenance to perform, under close supervision, organizational maintenance in the squadron working environment.
Location	VMGRT-253 FREST, MCAS Cherry Point
Length	46 days
RFT date	Currently Available
Skill identifier	AE 8318, MOS 6316

TTE/TD	GPWS CAT I for the Integrated Avionics Trainer
Prerequisites	C-100-2018, Avionics Technician O Level Class Al Security clearance - Confidential.

Title	**CH-53E Electrical Systems Integrated Organizational Maintenance**
CIN	C-602-9441 (as part of training track M-102-2731)
Model Manager ...	HMT-302 FREST, MCAS New River
Description	Upon completion of this course, Aviation Electrician's Mates will have sufficient knowledge of the electrical, systems of the CH-53E aircraft, including theory of operation, troubleshooting/fault isolation, and maintenance to perform, under close supervision, organizational maintenance in the squadron working environment.
Location	HMT-302 FREST, MCAS New River
Length	47 days
RFT date	Currently Available
Skill identifier	MOS 6323
TTE/TD	GPWS CAT III for the Integrated Avionics Trainer
Prerequisite	C-100-2018, Avionics Technician O Level Class Al

Title	**MH/CH-53 Electrical/Instrument and Digital Automatic Flight Control System Organizational Maintenance**
CIN	C-602-9442 (as part of training track D-602-2758)
Model Manager ...	MTU 1031 NAMTRAGRU DET Norfolk
Description	Upon completion of this course, Aviation Electrician's Mates will have sufficient knowledge of the electrical, instrument, and Digital Automatic Flight Control Systems of the CH/MH-53E aircraft, including theory of operation, troubleshooting, fault isolation, and maintenance to perform, under close supervision, organizational maintenance in the squadron working environment.
Location	MTU 1031 NAMTRAGRU DET Norfolk
Length	103 days

RFT date ..... First quarter FY99

Skill identifier ..... AE 8303

TTE/TD ..... GPWS CAT III for the Integrated Avionics Trainer

Prerequisite ..... D-602-2753, CH/MH-53E Initial Electrical/Instrument System and Automatic Flight Control System (AFCS) Organization Maintenance

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
1311	Q-2A-0001, Primary Flight Training Q-2A-0013, Intermediate Helo Q-2A-0015, Undergraduate Helicopter Pilot Training E-2D-0032, Survival Evasion Resistance and Escape Training (SERE)
MOS 7556	Q-2A-0001, Primary Flight Training Q-2A-0009, Advanced T45 Strike Flight Q-2A-0010, Joint T-34C Intermediate Flight Training Q-2A-0012, T-45C Advanced Strike Flight Training Curriculum E-2D-0032, Survival Evasion Resistance and Escape Training (SERE)
MOS 7566	Q-2A-0001, Primary Flight Training Q-2A-0013, Intermediate Helo Q-2A-0015, Undergraduate Helicopter Pilot Training E-2D-0032, Survival Evasion Resistance and Escape Training (SERE)
AE 8303	C-100-2020, Avionics Common Core Class A1 C-602-2039, Aviation Electrician's Mate O Level Strand Class Al D-602-9442, CH/MH-53E Initial Electrical/Instrument System and Automatic Flight Control System (AFCS) Organizational Maintenance
AE 8313	C-100-2020, Avionics Common Core Class A1 C-602-2039, Aviation Electrician's Mate O Level Strand Class Al

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
MOS 6323	C-100-2020, Avionics Common Core Class A1 C-100-2018, Avionics Technician O Level Class Al
MOS 6316	C-100-2020, Avionics Common Core Class A1 C-100-2018, Avionics Technician O Level Class Al

d. Training Pipelines. No new training pipelines or tracks are required by this NTSP. Existing operator training tracks, as identified in I.H.4.b.(1), will require modification to include the GPWS. Existing maintenance training tracks as identified in I.H.4.b.(2) relating to the GPWS and the courses requiring revision to include the GPWS are as follows:

TRACK NUMBER	COURSE NUMBER	TITLE
M-102-0451		KC-130 Communications/Navigation Systems Technician
	C-102-4511	KC-130 Aircraft Communication/Navigation System Technician MOJT
M-102-2731		CH-53E Communications/Electrical System Organizational Maintenance
	C-602-9441	CH-53E Electrical Systems Integrated Organizational Maintenance
D-602-2758		CH/MH-53E Career Electrical/Instrument System and Automatic Flight Control System (AFCS) Organizational Maintenance
	C-602-9442	MH/CH-53 Electrical/Instrument and Digital Automatic Flight Control Systems Integrated Organizational Maintenance

I. ON-BOARD (IN-SERVICE) TRAINING

1. Proficiency or Other Training Organic to the New Development. Proficiency training for GPWS maintenance personnel will be provided through managed on-the-job training at the organizational level. GPWS on-board training will be consistent with qualitative assessment by the Maintenance Training Improvement Program (MTIP).

a. 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 managed through automated data processing. The Deputy Chief of Staff for Training will assist in development of MTIP by providing those question banks (software) already developed by the Navy. MTIP will be implemented per OPNAVINST 4790.2G. 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.

c. Aviation Maintenance Training Continuum System. 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, Computer Aided Instruction, and Interactive Courseware to be integrated into the training continuum and provide essential support for standardizing technical training.

2. Personnel Qualification Standards. Personnel Qualification Standards (PQS) are only required for flight crew personnel. The PQS Development Group, Naval Education and Training Professional Development and Technology Center, Pensacola, Florida will develop changes to aircrew PQS.

3. Other On-Board 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 Maintenance Training Management Evaluation Program (MATMEP). This program is designed to meet Marine Corps, as well as Navy OPNAVINST 4790.2G, 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 refresher training.

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N00019-89-C-0195 CAT I	Allied-Signal Avionics Incorporated	1500 N. E. 36th Street P.O. Box 97001 Redmond, WA 98073-9701
N00019-93-C-0170 CAT III	Cubic Defense Systems Incorporated	San Diego, CA 92126-5587

Note: No contract is being awarded for the CAT II GPWS since it is a Navy in-house software development program.

2. Program Documentation. The GPWS CAT I Integrated Logistics Support Plan (ILSP) was revised in November 1993. A GPWS CAT II ILSP will not be developed. The GPWS CAT III ILSP was revised in June 1993.

3. Technical Data Plan. The source data for GPWS CAT I and CAT III technical manuals have been developed by Allied-Signal Avionics, Inc., and Cubic Defense Systems, Inc., respectively, and will be provided to NATSF for incorporation into the respective technical manuals.

4. Test Sets, Tools, and Test Equipment. NA.

5. Repair Parts. NA.

6. Human Systems Integration. The original configuration of the CAT III GPWS in the CH-53E included Control Panel Display (CPD) units. It was determined during OT that the CPD's were out of the field of view of the pilot and co-pilot. As a result of the Human Systems Integration testing during OT it was recommended that the light panel be removed in the final configuration.

K. SCHEDULES

1. Schedule of Events

a. Installation and Delivery Schedules. Installation of the GPWS CAT I in the C-130T and KC-130F/R/T aircraft will be accomplished either by a contractor field team or depot level personnel. Delivery of the first production GPWS CAT I is scheduled for fourth quarter FY99. Installation of the GPWS CAT II software is currently being incorporated into AV-8B and

F/A-18 series aircraft. A contractor field team will accomplish installation of the GPWS CAT III in the CH-53D/E and MH-53E. Delivery of the first production GPWS CAT III is scheduled for first quarter FY99.

INSTALLATION SCHEDULE (NUMBER OF SYSTEMS)

ACTIVITY	FY99	FY00	FY01	FY02	FY03	FY04
KC-130F/R/T and C-130T	3	25	28	35	7	
CH-53D/E and MH-53E	37	88	101	95	103	70

b. Ready For Operational Use Schedule. The GPWS will be Ready For Operational Use upon completion of installation.

c. Time Required to Install at Operational Sites. The GPWS CAT I and CAT III will require approximately five days for installation.

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

e. Training Device and Technical Training Equipment Delivery Schedule. The actual GPWS CAT I and CAT III will be required as TTE at the FRSs for the Operational Flight Trainers, and at the MTU and FRESTs for the Integrated Avionics Trainers. All GPWS organizational level training is limited to working with the appropriate Maintenance Instruction Manuals and Integrated Avionics Trainers. Specific activity schedules are shown in element IV.A.1.

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
ILSP for GPWS CAT I	AV-ILSP-265	PMA209	Nov 93
ILSP for GPWS CAT III	AV-ILSP-384	PMA209	Jun 93
KC-130T Aircraft	A-50-8423/A	PMA200	Approved Nov 93
C-130T Logistics Support Aircraft	R-50-9011A/P	PMA261	Proposed Apr 98
AV-8B Harrier II Weapon Systems	A-50-8210D/A	PMA257	Proposed Aug 98

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
F/A-18 Weapon System	A-50-7703F/A	PMA265	Approved Jan 95
F/A-18E/F Weapon System	A-50-9201A/A	PMA265	Proposed Jan 98
MH-53E Helicopter	A-50-8417C/D	PMA261	Preliminary Draft Jun 98
CH-53E Helicopter	A-50-7604F/D	PMA261	Draft Apr 95

PART II - BILLET AND PERSONNEL REQUIREMENTS

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

II.A. Billet Requirements

- II.A.1.b. Billets Required for Operational and Fleet Support Activities
- II.A.1.c. Total Billets Required for Operational and Fleet Support Activities
- II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule
- II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities
- II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities
- II.A.5. Annual Incremental and Cumulative Billets

II.B. Personnel Requirements

- II.B.1. Annual Training Input Requirements

PART II - BILLET AND PERSONNEL REQUIREMENTS

II.A. BILLET REQUIREMENTS

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

SOURCE: PMA200 **DATE:** 8/4/98

ACTIVITY, UIC	PFYs	CFY99	FY00	FY01	FY02	FY03
OPERATIONAL ACTIVITY	NAVY/MARINE					
KC-130F/R/T and C-130T (CAT I)	0	3	25	28	35	7
CH-53 and MH-53 (CAT III)	0	37	88	101	95	103
TOTAL:	0	40	113	129	130	110

Note: The above numbers indicate GPWS CAT I and CAT III aircraft installations.

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

INSTRUCTOR BILLETS

TRAINING ACTIVITY, LOCATION, UIC

DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	CFY99 OFF	CFY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL

Existing training activity instructor and support personnel billet levels are adequate to support GPWS training. No additional billets are required.

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY,	USN/	PFYs		CFY99		FY00		FY01		FY02		FY03	
LOCATION, UIC	USMC	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL

Student billets are chargeable to the type aircraft for which the student receives overall training. The currently planned chargeable student billets will not change due to the GPWS. They are contained in the specific aircraft NTSP.

PART III - TRAINING REQUIREMENTS

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

III.A.2. Follow-on Training

III.a.2.a. Existing Courses

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

Note: For information on student throughputs refer to:

NTSP TITLE	NTSP NUMBER	NTSP STATUS AND DATE
KC-130T Aircraft	A-50-8423/A	Approved November 1993
C-130T Logistics Support Aircraft	R-50-9011A/P	Proposed April 1998
AV-8B Harrier II Weapon Systems	A-50-8210D/A	Approved November 1997
F/A-18 Weapon System	A-50-7703F/A	Approved January 1995
F/A-18E/F Weapon System	A-50-9201A/A	Proposed January 1998
MH-53E Helicopter	A-50-8417C/D	Preliminary Draft June 1998
CH-53E Helicopter	A-50-7604F/D	Draft April 1995

PART III - TRAINING REQUIREMENTS

III.A.1. INITIAL TRAINING REQUIREMENTS

COURSE TITLE: GPWS CAT I Operator
COURSE DEVELOPER: Allied Signal Avionics, Inc.
COURSE INSTRUCTOR: Allied Signal Avionics, Inc.
COURSE LENGTH: 1 day

LOCATION, UIC		DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
VMGRT-253	55251	2nd Qtr	10	0	0	INPUT	VMGRT-253
MCAS Cherry Point		FY99	0	0		AOB	
			0	0		CHARGEABLE	

COURSE TITLE: GPWS CAT III Operator
COURSE DEVELOPER: Cubic Defense Systems, Inc.
COURSE INSTRUCTOR: Cubic Defense Systems, Inc.
COURSE LENGTH: 1 day

LOCATION, UIC		DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
HMT-302	55203	1st Qtr	10	0	0	INPUT	HMT-302
MCAS New River		FY99	0	0		AOB	
			0	0		CHARGEABLE	

COURSE TITLE: GPWS CAT III Operator
COURSE DEVELOPER: Cubic Defense Systems, Inc.
COURSE INSTRUCTOR: Cubic Defense Systems, Inc.
COURSE LENGTH: 1 day

LOCATION, UIC		DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
AWSTS Norfolk	69022	1st Qtr	10	0	0	INPUT	AWSTS Norfolk
		FY99	0	0		AOB	
			0	0		CHARGEABLE	

COURSE TITLE: GPWS CAT I Organizational Maintenance
COURSE DEVELOPER: Allied Signal Avionics, Inc.
COURSE INSTRUCTOR: Allied Signal Avionics, Inc.
COURSE LENGTH: 1 day

LOCATION, UIC		DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
VMGRT-253 FREST	55251	2nd Qtr	0	10	0	INPUT	VMGRT-253 FREST
MCAS Cherry Point		FY99	0	0		AOB	
			0	0		CHARGEABLE	

III.A.1. INITIAL TRAINING REQUIREMENTS (Continued)

COURSE TITLE: GPWS CAT III Organizational Maintenance
COURSE DEVELOPER: Cubic Defense Systems, Inc.
COURSE INSTRUCTOR: Cubic Defense Systems, Inc.
COURSE LENGTH: 1 day

LOCATION, UIC		DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
HMT-302 FREST	55203	1st Qtr	0	10	0	INPUT	HMT-302 FREST
MCAS New River		FY99	0	0		AOB	
			0	0		CHARGEABLE	

COURSE TITLE: GPWS CAT III Organizational Maintenance
COURSE DEVELOPER: Cubic Defense Systems, Inc.
COURSE INSTRUCTOR: Cubic Defense Systems, Inc.
COURSE LENGTH: 1 day

LOCATION, UIC		DATE BEGIN	STUDENTS OFF	ENL	CIV		ACTIVITY DESTINATION
MTU 1031 NAMTRAGRU	44680	1st Qtr	0	10	2	INPUT	MTU 1031, NAESU
DET Norfolk		FY99	0	0		AOB	
			0	0		CHARGEABLE	

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

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

IV.A. Training Hardware

IV.A.2. Training Devices

IV.C. Facility Requirements

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

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

IV.C.3. Facility Project Summary by Program

***Note**: CAT II not addressed due to it being a software update only.

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

IV.A. TRAINING HARDWARE

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

CIN, COURSE TITLE: None C-130F/R/T Fleet Replacement Pilot CAT
TRAINING ACTIVITY: VMGRT-253
LOCATION, UIC: MCAS Cherry Point 55251

ITEM NUMBER	EQUIPMENT	TYPE OR RANGE OF REPAIR PARTS	QUANT REQUIRED	DATE REQUIRED	GFE CFE	STATUS
TTE						
001	GPWS CAT I		2	4th Qtr FY99	GFE	Estimated delivery 4th Qtr FY99

CIN, COURSE TITLE: None CH-53E Fleet Replacement Pilot CAT I
TRAINING ACTIVITY: HMT-302
LOCATION, UIC: MCAS New River 55203

ITEM NUMBER	EQUIPMENT	TYPE OR RANGE OF REPAIR PARTS	QUANT REQUIRED	DATE REQUIRED	GFE CFE	STATUS
TTE						
002	GPWS CAT III		2	1st Qtr FY99	GFE	

CIN, COURSE TITLE: D-2C-2773 MH-53E Fleet Replacement Pilot CAT I
TRAINING ACTIVITY: AWSTS
LOCATION, UIC: NAS Norfolk 69022

ITEM NUMBER	EQUIPMENT	TYPE OR RANGE OF REPAIR PARTS	QUANT REQUIRED	DATE REQUIRED	GFE CFE	STATUS
TTE						
002	GPWS CAT III		2	1st Qtr FY99	GFE	

CIN, COURSE TITLE: C-102-4511 KC-130 Communication/Navigation System Technician MOJT (of track M-102-0451)
TRAINING ACTIVITY: VMGRT-253 FREST
LOCATION, UIC: MCAS Cherry Point 55251

ITEM NUMBER	EQUIPMENT	TYPE OR RANGE OF REPAIR PARTS	QUANT REQUIRED	DATE REQUIRED	GFE CFE	STATUS
TTE						
001	GPWS CAT I		2	4th Qtr FY99	GFE	Estimated delivery 4th Qtr FY99

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE (Continued)

CIN, COURSE TITLE: C-602-9441 CH-53E Electrical Systems Integrated Organizational Maintenance (of track M-102-2731)
TRAINING ACTIVITY: HMT-302 FREST
LOCATION, UIC: MCAS New River 55203

ITEM NUMBER	EQUIPMENT	TYPE OR RANGE OF REPAIR PARTS	QUANT REQUIRED	DATE REQUIRED	GFE CFE	STATUS
TTE						
002	GPWS CAT III		2	1st Qtr FY99	GFE	

CIN, COURSE TITLE: C-602-9442 MH/CH-53 Electrical/Instrument and Digital Automatic Flight Control System Integrated Organizational (of track D-602-2758)
TRAINING ACTIVITY: MTU 1031
LOCATION, UIC: NAMTRAGRU DET Norfolk 44680

ITEM NUMBER	EQUIPMENT	TYPE OR RANGE OF REPAIR PARTS	QUANT REQUIRED	DATE REQUIRED	GFE CFE	STATUS
TTE						
002	GPWS CAT III		2	1st Qtr FY99	GFE	

IV.B.1. TRAINING SERVICES

COURSE/TYPE OF TRAINING	SCHOOL LOCATION/UIC	NO. OF PERSONNEL	MAN WEEKS REQUIRED	DATE BEGIN
GPWS CAT I Operator	VMGRT-253 MCAS Cherry Point 55251	1	.2	2nd Qtr FY99
GPWS CAT III Operator	HMT-302 MCAS New River 55251	1	.2	1st Qtr FY99
GPWS CAT III Operator	AWSTS NAS Norfolk 69022	1	.2	1st Qtr FY99
GPWS CAT I Organizational Maintenance	VMGRT-253 FREST MCAS Cherry Point 55251	1	.2	2nd Qtr FY99
GPWS CAT III Organizational Maintenance	HMT-302 FREST MCAS New River 55251	1	.2	1st Qtr FY99
GPWS CAT III Organizational Maintenance	MTU 1031 NAMTRAGRU DET Norfolk 44680	1	.2	1st Qtr FY99

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

TRAINING ACTIVITY: VMGRT-253
LOCATION, UIC: MCAS Cherry Point 55251
CIN, COURSE TITLE: None C-130F/R/T Fleet Replacement Pilot CAT I

TYPES OF MATERIAL OR AID	QUANT REQD	DATE REQD	STATUS
Curriculum Outlines	5	4th Qtr FY99	
Instructor Guides	5	4th Qtr FY99	
Student Workbooks	100	4th Qtr FY99	
Transparencies	3 Sets	4th Qtr FY99	

TRAINING ACTIVITY: HMT-302
LOCATION, UIC: MCAS New River 55203
CIN, COURSE TITLE: None CH-53E Fleet Replacement Pilot CAT I

TYPES OF MATERIAL OR AID	QUANT REQD	DATE REQD	STATUS
Curriculum Outlines	5	1st Qtr FY99	
Instructor Guides	5	1st Qtr FY99	
Student Workbooks	100	1st Qtr FY99	
Transparencies	3 Sets	1st Qtr FY99	

TRAINING ACTIVITY: AWSTS
LOCATION, UIC: NAS Norfolk 69022
CIN, COURSE TITLE: D-2C-2773 MH-53E Fleet Replacement Pilot CAT I

TYPES OF MATERIAL OR AID	QUANT REQD	DATE REQD	STATUS
Curriculum Outlines	5	1st Qtr FY99	
Instructor Guides	5	1st Qtr FY99	
Student Workbooks	100	1st Qtr FY99	
Transparencies	3 Sets	1st Qtr FY99	

TRAINING ACTIVITY: VMGRT-253 FREST
LOCATION, UIC: MCAS Cherry Point 55251
CIN, COURSE TITLE: C-102-4511 KC-130 Communication/Navigation System Technician MOJT (of track M-102-0451)

TYPES OF MATERIAL OR AID	QUANT REQD	DATE REQD	STATUS
Curriculum Outlines	5	4th Qtr FY99	
Instructor Guides	5	4th Qtr FY99	
Student Workbooks	100	4th Qtr FY99	
Transparencies	3 Sets	4th Qtr FY99	

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

TRAINING ACTIVITY: HMT-302 FREST
LOCATION, UIC: MCAS New River 55203
CIN, COURSE TITLE: C-602-9441 CH-53E Electrical Systems Integrated Organizational Maintenance (of track M-102-2731)

TYPES OF MATERIAL OR AID	QUANT REQD	DATE REQD	STATUS
Curriculum Outlines	5	1st Qtr FY99	
Instructor Guides	5	1st Qtr FY99	
Student Workbooks	100	1st Qtr FY99	
Transparencies	3 Sets	1st Qtr FY99	

TRAINING ACTIVITY: MTU-1031
LOCATION, UIC: NAMTRAGRU DET Norfolk 44680
CIN, COURSE TITLE: C-602-9442 MH/CH-53 Electrical/Instrument and Digital Automatic Flight Control System Integrated Organizational (of track D-602-2758)

TYPES OF MATERIAL OR AID	QUANT REQD	DATE REQD	STATUS
Curriculum Outlines	5	1st Qtr FY99	
Instructor Guides	5	1st Qtr FY99	
Student Workbooks	100	1st Qtr FY99	
Transparencies	3 Sets	1st Qtr FY99	

IV.B.3. TECHNICAL MANUALS

TRAINING ACTIVITY: VMGRT-253
LOCATION, UIC: MCAS Cherry Point 55251
CIN, COURSE TITLE: None C-130F/R/T Fleet Replacement Pilot CAT I

TECHNICAL MANUAL TITLE, NUMBER	MEDIUM	QUANT REQD	DATE REQD	STATUS
NATOPS Pilots Pocket Checklist - C-130 01-75ZAH-1C	Hard copy	10	4th Qtr FY99	On board
NATOPS Functional Checkflight Checklist - C-130 01-75ZAH-1S	Hard copy	10	4th Qtr FY99	On board
NATOPS Flight Manual - C-130 01-75ZAH-1	Hard copy	10	4th Qtr FY99	On board

TRAINING ACTIVITY: HMT-302
LOCATION, UIC: MCAS New River 55203
CIN, COURSE TITLE: None CH-53E Fleet Replacement Pilot CAT I

TECHNICAL MANUAL TITLE, NUMBER	MEDIUM	QUANT REQD	DATE REQD	STATUS
NATOPS Pilots Pocket Checklist - CH-53E A1-H53BE-NFM-500	Hard copy	10	1st Qtr FY99	On board
NATOPS Functional Checkflight Checklist - CH-53E A1-H53BE-NFM-700	Hard copy	10	1st Qtr FY99	On board
NATOPS Flight Manual - CH-53E A1-H53BE-NFM-000	Hard copy	10	1st Qtr FY99	On board

TRAINING ACTIVITY: AWSTS
LOCATION, UIC: NAS Norfolk 69022
CIN, COURSE TITLE: D-2C-2773 MH-53E Fleet Replacement Pilot CAT I

TECHNICAL MANUAL TITLE, NUMBER	MEDIUM	QUANT REQD	DATE REQD	STATUS
NATOPS Pilots Pocket Checklist - CH-53E A1-H53ME-NFM-500	Hard copy	10	1st Qtr FY99	On board
NATOPS Functional Checkflight Checklist - CH-53E A1-H53ME-NFM-700	Hard copy	10	1st Qtr FY99	On board
NATOPS Flight Manual - CH-53E A1-H53ME-NFM-000	Hard copy	10	1st Qtr FY99	On board

Note: Date required indicates the date when GPWS information will be incorporated into these manuals.

IV.B.3. TECHNICAL MANUALS

TRAINING ACTIVITY: VMGRT-253 FREST
LOCATION, UIC: MCAS Cherry Point 55251
CIN, COURSE TITLE: C-102-4511 KC-130 Aircraft Communication /Navigation System Technician MOJT (of track M-102-0451)

TECHNICAL MANUAL TITLE, NUMBER	MEDIUM	QUANT REQD	DATE REQD	STATUS
Aircraft Wiring Diagrams NA-01-75GAH-2-13	Hard copy	8	4th Qtr FY99	On board
Controls and Instrument Systems IPB NA-01-75GAH-4-5	Hard copy	8	4th Qtr FY99	On board
Electrical System IPB NA-01-75GAH-4-6	Hard copy	8	4th Qtr FY99	On board

TRAINING ACTIVITY: HMT-302 FREST
LOCATION, UIC: MCAS New River 55203
CIN, COURSE TITLE: C-602-9441 CH-53E Electrical Systems Integrated Organizational Maintenance (of track M-102-2731)

TECHNICAL MANUAL TITLE, NUMBER	MEDIUM	REQD	REQD	STATUS
Electrical Systems - CH-53E A1-H53BE-420-000	Hard copy	10	1st Qtr FY99	On board
Electrical Systems - CH-53E A1-H53BE-420-400	Hard copy	10	1st Qtr FY99	On board

TRAINING ACTIVITY: MTU-1031
LOCATION, UIC: NAMTRAGRU DET Norfolk 44680
CIN, COURSE TITLE: C-602-9442 MH/CH-53 Electrical/Instrument and Digital Automatic Flight Control System Integrated Organizational (of track D-602-2758)

TECHNICAL MANUAL TITLE, NUMBER	MEDIUM	REQD	REQD	STATUS
Electrical Systems - CH-53E A1-H53BE-420-000	Hard copy	10	1st Qtr FY99	On board
Electrical Systems - CH-53E A1-H53BE-420-400	Hard copy	10	1st Qtr FY99	On board

Note: Date required indicates the date when GPWS information will be incorporated into these manuals.

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
ACNO (MPT)	Chair NTPC	1/87	Completed
DA	Begin Analysis of Manpower, Personnel and Training	2/87	Completed
DA	Promulgate Draft NTP to ALCON For Review and Comment	11/87	Completed
DA	Submit Proposed NTP to OPNAV	3/88	Completed
ACNO (MPT)	Approve and Promulgate NTP	4/88	Completed
DA	Promulgate ILS Master Plan	4/88	Completed
ACNO/DMSO	Program Manpower and Training Resource Requirements	12/88	Completed
TSA	Begin Training Services	4/91	Completed
OPTEVFOR	Begin TECHEVAL for CAT I	8/91	Completed
ACNO	Promulgate Update NTP	10/91	Completed
OPTEVFOR	Complete DT for CAT I	1/92	Completed
OPTEVFOR	Begin OT for CAT I	6/92	Completed
OPTEVFOR	Complete OT for CAT I	9/93	Completed
OPTEVOR	Begin DT for CAT III	8/95	Completed
OPTEVOR	Complete DT for CAT II	3/96	Completed
OPTEVOR	Complete DT for CAT III	4/96	Completed
OPTEVOR	Begin OT for CAT III	4/96	Completed
DA	Promulgate Draft NTP to ALCON For Review and Comment	5/96	Completed
DA	Submit Proposed NTP to OPNAV for approval	5/96	Completed
OPTEVOR	Complete OT for CAT III	7/96	Completed
OPTEVOR	Complete OT for CAT II	11/96	Completed
ACNO	Return Proposed NTP for correction	1/97	Completed
OPTEVOR	Authorized CAT II for Fleet use	3/97	Completed
DA	Resubmit Proposed NTSP to OPNAV for approval	4/97	Completed
TSA	Begin Initial Training CAT III	6/98	Completed

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
ACNO (MPT)	Approve and Promulgate NTSP	9/98	Completed
TA	Begin Follow-On/Replacement Training CAT III	1st Qtr FY99	
DA	Fleet Introduction CAT III	1st Qtr FY99	
DA	Achieve Material Support Date CAT III	1st Qtr FY99	
DA	Achieve Navy Support Date CAT III	1st Qtr FY99	
TSA	Begin Initial Training CAT I	2nd Qtr FY99	

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
TA	Commence Follow-On/Replacement Training CAT I	4th Qtr FY99	
DA	Fleet Introduction CAT I	4th Qtr FY99	
DA	Achieve Material Support Date CAT I	3rd Qtr FY01	
DA	Achieve Navy Support Date CAT I	3rd Qtr FY02	

PART VI - DECISION ITEMS/ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS
Determine MTIP Requirements	Type Commanders	1/99	Open

PART VII - POINTS OF CONTACT

NAME, ACTIVITY, CODE	FUNCTION	TELEPHONE NUMBERS COMMERCIAL, DSN, FAX INTERNET ADDRESS
CAPT A. Steigelman CNO N881B	Head, Plans, Policy, and Fleet Maintenance	(703) 604-7747, DSN 664 FAX: (703) 604-6972 steigelman.anthony@hq.nqvy.mil
CAPT F. Smith CNO N889H	Head, Aviation Technical Training Branch	(703) 604-7730, DSN 664 FAX: (703) 604-6939 smith.frank@hq.navy.mil
CDR D. Meyer CNO N880G2	OPO Program Sponsor	(703) 693-2939, DSN 223 FAX: (703) 693-2934 meyer.dean@hq.navy.mil
AZC S. Dean CNO N889H7	NTSP Manager	(703) 604-7714, DSN 664 FAX: (703) 604-6939 dean.scott@hq.navy.mil
CDR T. O'Loughlin CNO N122C	Aviation Manpower	(703) 695-3113, DSN 225 FAX: (703) 614-5308
Mr. R. Zweibel CNO N75B	Training Technology Policy	(703) 614-1344, DSN 224 FAX: (703) 695-5698 zweibel.robert@hq.navy.mil
AZC T. Paynter CNO N122C1D	Manpower and Personnel	(703) 695-3219, DSN 225 ni22cid@bupers.navy.mil
CAPT F. Batog NAVAIRSYSCOM PMA209	Program Manager	(301) 757-6480, DSN 757 batogjs.ntrsprs@navair.navy.mil
Mr. W. Wescoe NAWCAD PAX PMA209L	IPT Leader for GPWS	(301) 757-0906, DSN 757 FAX: (301) 757-0924 wescoewp@am3@mr.nawcad.navy.mil
AECS L. Uebbing NAVAIRSYSCOM PMA205-3F6	Training System Manager	(301) 757-8130, DSN 775 FAX: (301) 757-6945 uebbinglb.jfk@navair.navy.mil
MAJ T. Clubb CMC APW-51	Aviation Weapon Systems Requirements CH-53, CH-46	(703) 614-1729, DSN 224 FAX: (703) 614-2138 clubbt@hqi.usmc.mil
LTCOL J. Thornton CMC ASL-34	Avionics Officer, Department of Aviation	(703) 614-1133, DSN 224 FAX: (703) 697-7343

PART VII - POINTS OF CONTACT

NAME, ACTIVITY, CODE	FUNCTION	TELEPHONE NUMBERS COMMERCIAL, DSN, FAX INTERNET ADDRESS
COL K. Hill MCCDC ASM-1	Branch Head, Aviation Manpower and Support	(703) 614-1244, DSN 224 FAX: (703) 614-1309 khill@notes.hqi.usmc.mil
GYSGT C. Abarr MCCDC ASM-54	Manpower Database Manager	(703) 614-1244, DSN 224 FAX: (703) 614-1309 cabarr@notes.hqi.usmc.mil
MAJ F. Simonds MCCDC C5325A	Total Force Structure Division Officer	(703) 784-6241, DSN 278 FAX: (703) 784-6072 zoid@mindless.com
CAPT R. Gibson BUPERS PERS 4B	Deputy Assistant, Chief of Military Personnel	(901) 874-3532, DSN 882 FAX: (901) 874 2606 p4b@persnet.navy.mil
CDR Lineberg BUPERS PERS 404	Branch Head, Aviation Enlisted Rating	(703) 693-1370, DSN 223 FAX: (703) 693-1392 p404@bupers.navy.mil
CDR E. Hawkins CINCLANTFLT N-721	Aviation NTSP Manager	(757) 836-0101, DSN 836 FAX: (757) 836-0141 hawkinsel@clp.navy.mil
LT C. Presley CINCPACFLT N-343	Fleet Training and Readiness Coordinator	(808) 474-6965, DSN 474 FAX: (808) 471-8601 s341@cpf.navy.mil
ADC K. Thompson COMNAVAIRESFOR N387	Class Desk Billet C-130	(504) 678-5973, DSN 678 FAX: (504) 678-1466
CDR S. Gingery NAVMAC 30	Head, Aviation Manpower Requirements Section	(901) 874-6218, DSN 882 FAX: (901) 874-6471 scott.gingery@navmac.navy.mil
CAPT P. Pratt CNET ETE 322	Enlisted Training and Education	(850) 452-4883, DSN 922 FAX: (850) 452-4951 capt-paul.pratt@smtp.cnet.navy.mil
AVCM J. Graff CNET ETE 3221	Enlisted Training and Education	(850) 452-4897, DSN 922 FAX: (850) 452-4951 avcm-james.graff@smtp.cnet.navy.mil
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PART VII - POINTS OF CONTACT

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