APPROVED

NAVY TRAINING SYSTEM PLAN

FOR THE

GAS TURBINE ENGINE TEST SYSTEMS

N88-NTSP-A-50-8616B/A

AUGUST 1998

GAS TURBINE ENGINE TEST SYSTEMS

EXECUTIVE SUMMARY

This Navy Training System Plan (NTSP) addresses the training requirements for the Gas Turbine Engine Test Systems (GTETS), also called the Aviation Engine Test Systems. For purposes of this NTSP, it will only be referred to as GTETS. GTETS are in acquisition Phase III; Production, Fielding, Deployment, and Operational Support.

GTETS are operated and maintained by Navy and Marine Corps personnel assigned to the Test Cell Work Center 450. Navy Enlisted Classification (NEC) 6422 is required for Aviation Machinist's Mates (ADs). Marine Corps personnel are assigned Military Occupational Specialty (MOS) 6035, Aircraft Powerplants Test Cell Operator, Fixed Wing, or MOS 6135, Aircraft Powerplants Test Cell Operator, Rotary Wing. Navy Aviation Electrician's Mates (AE) and Marine Corps electricians no longer have a specific NEC or MOS for GTETS maintenance. Personnel operating the GTETS are certified per OPNAVINST 4790.2G. A minimum of one qualified test cell operator and one technician are required during engine operations. Tasks for each level of maintenance are defined in the OPNAVINST 4790.2G. GTETS are fully maintainable at the IMA by repair or replacement of failed components. The maintenance concept for test cells includes preventive and corrective maintenance. Maintenance Requirements Cards are provided to accomplish preventive maintenance tasks. Technical publications for GTETS include a detailed troubleshooting section to aid in the accomplishment of corrective maintenance. Calibration is performed by Type III calibration teams.

Training for Turbojet and Turbofan Engine test cell operators and Turboshaft and Turboprop Engine test cell operators will be accomplished using Naval Aviation Engineering Services Unit instructors, or via On-the-Job Training (OJT). OJT will be conducted under the supervision of a senior Petty Officer, a senior Non-Commissioned Officer (E-5 and above), or civilian technician, all of whom must be certified as an instructor on the test systems and engine per OPNAVINST 4790.2G.

The Naval Air Warfare Center, Aircraft Division Lakehurst, New Jersey, has developed a Standard Engine Test System (SETS). The SETS is a computerized system "neutral" to engine types or test cells and capable of complete engine testing. Information on the SETS program will not be included in this NTSP. The system is currently undergoing test and evaluation and will be covered by a separate NTSP.

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LIST OF ACRONYMS

AD	Aviation Machinist's Mate
AE	Aviation Electrician's Mate
AMIST	Aviation Maintenance In-Service Training
AMTCS	Aviation Maintenance Training Continuum System
APU	Auxiliary Power Unit
BUPERS	Bureau of Naval Personnel
CBT	Computer-Based Training
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
GTETS	Gas Turbine Engine Test Systems
Hz	Hertz
I&C	Instrument and Control
ILSP	Integrated Logistics Support Plan
IMA	Intermediate Maintenance Activity
KVA	Kilovolt Ampere
MATMEP	Maintenance Training Management and Evaluation Program
MOS	Military Occupational Specialty
MRC	Maintenance Requirement Card
MTIP	Maintenance Training Improvement Program
NA	Not Applicable
NAESU	Naval Aviation Engineering Services Unit
NAMTRAGRU	Naval Air Maintenance Training Group
NAS	Naval Air Station
NAVFACENGCOM	Naval Facilities Engineering Command
NAVAIRSYSCOM	Naval Air Systems Command
NAVAIRWARCENACDIV	Naval Air Warfare Center, Aircraft Division
NEC	Navy Enlisted Classification
NTSP	Navy Training System Plan

OJT	On-the-Job-Training
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	OPNAV Instruction
OPO	OPNAV Principal Official
PSICP	Program Support Inventory Control Point
SETS	Standard Engine Test System
SGT	Sergeant
SSGT	Staff Sergeant
TFS	Total Force Structure
UNIJASU	Universal Jet Air Start Unit
VAC	Volts Alternating Current

GAS TURBINE ENGINE TEST SYSTEMS

PREFACE

This Approved Navy Training System Plan (NTSP) is an update of the Proposed NTSP for the Gas Turbine Engine Test Systems, N88-A-50-8186B/P, dated September 1997. It has been updated to comply with guidelines set forth in the Navy Training Requirements Documentation Manual and includes updates to the Manpower, Personnel, and Training (MPT) milestones, action items, and points of contact.

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. **Nomenclature-Title-Acronym.** Gas Turbine Engine Test Systems (GTETS)

2. **Program Element.** 70400N

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 (N881C)

OPO Resource Sponsor ..... CNO (N881C)

Marine Corps Program Sponsor ..... CMC (ASL-33)

Developing Agency ..... NAVAIRWARCENACDIV LKE (3.4.1)

Training Agency ..... CINCLANTFLT
CINCPACFLT
CNET
COMNAVRESFOR

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

Manpower and Personnel Mission Sponsor ..... CNO (N12)
BUPERS (PERS 40, 404)

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

Marine Corps Combat Development Command
Manpower Management ..... TFS Division

D. SYSTEM DESCRIPTION

1. Operational Uses. Gas Turbine Engine Test Systems (GTETS) provide Intermediate Maintenance Activities (IMAs), ashore and afloat, with the capability of conducting out-of-airframe preventive and corrective maintenance, and performance testing of most aircraft engines and Auxiliary Power Units (APUs) within the Navy and Marine Corps inventory.

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

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST. Developmental Test was performed by the Systems Engineering Test Directorate at Naval Air Station (NAS) Jacksonville, Florida, and Naval Air Warfare Center, Aircraft Division (NAVAIRWARCENACDIV) Patuxent River, Maryland. Operational Test was performed by Commander, Operational Test and Evaluation Force at NAS Norfolk, Virginia, and NAVAIRWARCENACDIV, Patuxent River, Maryland. The Developmental Test and Operational Test of GTETS have been completed.

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

GAS TURBINE ENGINE TEST SYSTEMS	SYSTEMS REPLACED
1. A/E 37T-17(V) (Series) Turboprop	Mobile Engine Test Systems # 687215
2. A/E 37T-24(V) (Series) Turboshaft	A/M 37T-17(V)2/4, A/M 37T-18(V)3
3. A/F 37T-19(V) (Series) Turboprop	None
4. A/E 37T-14 Turbojet and Turbofan	NER-3, A/M 37T-14 Turbojet and Turbofan
5. A/F 32T-9 Turbojet and Turbofan	None
6. A/F 32T-11 Turbojet and Turbofan	Kittel Lacy Turbojet and Turbofan
7. A/F 32T-6 Turbojet and Turbofan	Class "C" Cells
8. A/F 32T-6A Turbojet and Turbofan	A/F 32T-5 Turbojet and Turbofan
9. A/F 32T-10 Turbojet and Turbofan	None
10. A/F 37T-16A(V) (Series) Turboshaft	None
11. A/M 37T-23 Turbojet and Turbofan	NER-2, A/M 37T-13 Turbojet and Turbofan

GAS TURBINE ENGINE TEST SYSTEMS	SYSTEMS REPLACED
12. A/W 37T-1 Turbojet and Turbofan	ID126-1, ED6823-1, 559 Turbojet/fan
13. A/E 37T-26/26A Compressor	A/E 37T-20/20A Power Unit

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. GTETS are designed to monitor and display all parameters of an engine being tested. GTETS allow IMAs to conduct out-of-airframe testing and troubleshooting of most engines and APUs in the Navy and Marine Corps inventory. All GTETS identified in this NTSP are currently operational. GTETS are of four configurations:

- Fixed Self-contained Facility made of brick and mortar
- Semi-fixed Facility containing a fixed Instrumentation and Control (I&C) cab with cables and hoses leading to a portable engine test stand
- Complete Mobile engine test system
- Fixed Facility built into aircraft carriers

a. Fixed Self-contained Facility. This facility contains the control room, engine test area, exhaust system, fire extinguishing system, lighting system, and overhead hoist in one brick and mortar building. The I&C room is separated from the engine test area and exhaust system by a fixed brick and mortar wall.

b. Semi-fixed Facility. This facility contains a permanent building housing all controls and instrumentation for engine testing. This facility also contains cables and hoses leading to the engine being tested. The engine is mounted on a portable engine test stand located away from the fixed room in a safe area.

c. Mobile Facility. This facility is configured with a portable cab room housing all controls and instrumentation. The cab room has cables leading to the engine, which is mounted on a portable engine test stand. This facility contains fuel and oil tanks located underground, or on portable skids.

d. Fixed Facility on Aircraft Carriers. This facility is configured and installed aboard aircraft carriers. It is permanent and contains all controls and instrumentation, which are separated from the engine test area. The engine exhaust is directed aft of the ship during engine testing.

2. Physical Description. The physical descriptions of the individual GTETS are as follows:

INSTRUMENTATION AND CONTROL ROOMS AND CABS

GTETS	LENGTH (FEET)	WIDTH (FEET)	HEIGHT (FEET)	WEIGHT (POUNDS)	REMARKS/ REQUIREMENTS
A/E 37T-17(V) A/E 37T-24(V)	20	8	8	8,000	120/208 Volts Alternating Current (VAC), 3 phase, 60 Hertz (Hz), 45 Kilovolt Ampere (KVA) station power.
A/F 37T-19(V) A/F 37T-16(V)	20	8	8	NA	120/208 VAC, 3 phase, 60 Hz, 45 KVA, station power.
A/E 37T-14 A/F 32T-9 A/F 32T-11	20	8	8	8,000	120/208 VAC, 3 phase, 60 Hz, 75 KVA, station power.
A/F 32T-6 A/F 32T-6A A/F 32T-10	14	14	10	NA	120/208 VAC, 3 phase, 60 Hz, station power and one 28.8 Volts Direct Current nickel cadmium battery.
A/M 37T-23	20	8	8	8,000	208/460 VAC, 3 phase, 60 Hz, 100 KVA station power.
A/W 37T-1	14	12	7.5	NA	440 VAC, 3 phase, 60 Hz, 150 KVA ships power.
A/E 37T-26A	20	8	8	20,000	208/440 VAC, 3 phase, 60 Hz, 150 KVA station power.

TEST BEDS AND TRAILERS

GTETS	LENGTH (FEET)	WIDTH (FEET)	HEIGHT (FEET)	WEIGHT (POUNDS)	REMARKS/ REQUIREMENTS
A/E 37T-17(V) A/E 37T-19(V)	28	10.5	13	16,000	Contains pressure measuring box and interconnecting assembly.
A/E 37T-24(V) A/F 37T-16(V)	18	7	7	3,000	Contains engine mounting frame and air dynamometer.
A/E 37T-14	16	6	3.3	2,500	Mobile rail type.
A/F 32T-9 A/F 32T-11	24	19	22	NA	Rail type.
A/F 32T-6 A/F 32T-6A A/F 32T-10	16	4	3.3	2,500	Mobile rail type.
A/M 37T-23	6	4	4	NA	Mobile rail type.
A/E 37T-26A	18.5	2.75	43.75	1,500	Rail type.
A/W 37T-1	17	4	3.75	1,500	Rail type.

FUEL AND OIL SYSTEMS

GTETS	LENGTH (FEET)	WIDTH (FEET)	HEIGHT (FEET)	WEIGHT (POUNDS)	REMARKS/ REQUIREMENTS
A/E 37T-17(V) A/F 37T-19(V) A/E 37T-24(V) A/F 37T-16(V)	15	6	6	2,000	Skid mounted 1,000 gallon tank, controlled from the I&C cab room.
A/M 37T-23	17	6.5	8	3,950	Trailer mounted 2,500 gallon tank.
A/E 37T-14 A/F 32T-9 A/F 32T-11	24	8	8	3,950	Skid mounted 5,000 gallon tank with fuel pumping unit attached.

GTETS	LENGTH (FEET)	WIDTH (FEET)	HEIGHT (FEET)	WEIGHT (POUNDS)	REMARKS/ REQUIREMENTS
A/F 32T-6 A/F 32T-6A A/F 32T-10	17	10	NA	NA	Two 10,000 gallon underground tanks and enclosed pump room.
A/W 37T-1	NA	NA	NA	NA	The system is connected to the ship's aviation fuel supply.
A/E 37T-26A	2.75	2.25	2.75	2,000	Module type tank systems are housed separately.

3. New Development Introduction. NA.

4. Significant Interfaces. Peculiar engine adapter assemblies provide the necessary interface between the test stand, bed, frame, or cart to the engine being tested and the I&C rooms and cabs.

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

H. CONCEPTS

1. Operational Concept. GTETS are operated and maintained by Navy and Marine Corps personnel assigned to the Test Cell Work Center 450. Navy Enlisted Classification (NEC) 6422 is required for Aviation Machinist's Mates (AD). Marine Corps personnel are assigned Military Occupational Specialty (MOS) 6035, Aircraft Power Plants Test Cell Operator, Fixed Wing, or MOS 6135, Aircraft Power Plants Test Cell Operator, Rotary Wing. Navy Aviation Electrician's Mates (AE) and Marine Corps electricians no longer have a specific NEC or MOS for GTETS maintenance. Personnel operating GTETS are certified per OPNAVINST 4790.2G. A minimum of one qualified test cell operator and one technician are required during engine operations.

2. Maintenance Concept. Tasks for each level of maintenance are defined in OPNAVINST 4790.2G. GTETS are fully maintainable at the IMA by repair, or replacement of failed components. The maintenance concept for test cells includes preventive and corrective maintenance. Maintenance Requirements Cards (MRC) are provided to accomplish preventive maintenance tasks. Technical publications for GTETS include a detailed troubleshooting section to aid in accomplishment of corrective maintenance. Calibration is performed by Type III calibration teams.

a. Organizational. NA.

b. Intermediate. Maintenance is performed by IMAs as defined in OPNAVINST 4790.2G. Intermediate level maintenance personnel perform organizational maintenance tasks

and systems calibration, including daily and preoperational inspections, preventive maintenance, and servicing, in addition to maintaining and repairing most of the components of the GTETS. Spare components deemed IMA-repairable are supported by the rotatable pool. Non-repairable components or those requiring depot level repair will be handled per the assigned Source, Maintenance, and Recoverability code and OPNAVINST 4790.2G. The personnel required to operate and maintain GTETS are Navy ADs with NEC 6422, AE personnel, and Marine Corps personnel with MOS 6035 or 6135 at the intermediate level. The maintenance concept is the same ashore and afloat.

c. Depot. Depot level maintenance consists of overhaul and repair. Depot level maintenance for all test cells is currently scheduled through Naval Air Systems Command (NAVAIRSYSCOM), Patuxent River, Maryland. NAVAIRSYSCOM contractor field teams from NAVAIRWARCENACDIV Patuxent River perform depot level maintenance for GTETS.

d. Interim Maintenance. Technical assistance is provided by the project engineers at NAVAIRWARCENACDIV Lakehurst, New Jersey. Technical services are provided by Naval Aviation Engineering Services Unit (NAESU).

e. Life-Cycle Maintenance Plan. NA.

3. Manning Concept. The manning concept is based on functional operational requirements and maintenance workload. No increase in current manning levels is required. Existing manpower requirements for each site are adequate to operate and maintain the GTETS. Test cell operator and maintenance personnel consist of the following:

GTETS	RATING / RANK	NEC	MOS
Turbo Jet or Turbo Fan	AD1 / SSGT	6422	6035 / 6135
Engine Test Cell	AD2 / SGT	6422	6035 / 6135
	AE2 / SGT	NA	6035 / 6135
Turbo Jet or Turbo Fan	AD1 / SSGT	6422	6035 / 6135
Engine Test Cell	AD2 / SGT	6422	6035 / 6135
	AE2 / SGT	NA	6035 / 6135

4. Training Concept. NAESU personnel and licensed senior test cell operators (E-5 and above) will teach basic operation of the GTETS, plus engine specific adapter courses for all test cell operators. NAESU personnel have received the initial factory training course (N-450-0001/0002 Gas Turbine Engine Test System Operator Course).

CNO letter 1500 serial N889H3 of September 1992, gave Naval Air Maintenance Training Group (NAMTRAGRU) authorization to cancel GTETS training and gave responsibility of training to NAESU and local IMAs. GTETS maintainer courses are taught by selected NAESU instructors and licensed senior test cell operators on an as-required basis per OPNAVINST 4790.2G. This training is provided to active duty and Selected Reserve personnel.

a. Initial Training. Initial training for NAESU personnel was conducted by IMG, Inc., 1548 Kingsley Avenue, Suite 136, Orange Park, Orlando, Florida 32073. Later this training was updated and instructed by IMG, Inc. All training has been completed.

b. Follow-on Training. Follow-on training for Navy and Marine Corps GTETS operators and maintainers is conducted on site by NAESU representatives and licensed senior test cell operators, or on an as-required basis. Refer to Part I, On-Board (In-Service) Training, for further information.

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
AD 6422	° C-601-2011, Aviation Machinist's Mate Common Core Class A1 (625F) ° C-601-2012, Aviation Machinist's Mate Helicopter Fundamentals Strand Class A1 (625G) ° C-601-2013, Aviation Machinist's Mate Turboprop Fundamentals Strand Class A1 (625H) ° C-601-2014, Aviation Machinist's Mate Turbojet Fundamentals Strand Class A1 (625J)
AE	° C-100-2020, Avionics Common Core Class A1 (625B,625C,625D) ° C-602-2039, Aviation Electricians Mate O Level Strand Class A1 (625U)
MOS 6035	° C-601-2011, Aviation Machinist's Mate Common Core Class A1 (625F) ° C-601-2013, Aviation Machinist's Mate Turboprop Fundamentals Strand Class A1 (625H) ° C-601-2014, Aviation Machinist's Mate Turbojet Fundamentals Strand Class A1 (625J)
MOS 6135	° C-601-2011, Aviation Machinist's Mate Common Core Class A1 (625F) ° C-601-2012, Aviation Machinist's Mate Helicopter Fundamentals Strand Class A1 (625G)

d. Training Pipelines. All training tracks established by NAMTRAGRU have been canceled per CNO letter 1500 serial N889H3 of September 1992.

I. ON-BOARD (IN-SERVICE) TRAINING

1. Proficiency or Other Training Organic to the New Development

a. GTETS Operator Training. The Test Cell Operator receives On-the-Job Training (OJT) from senior test cell operators and NAESU representatives. GTETS Operator OJT Handbooks, N-450-0001 and N-450-0002, as well as approximately 35 OJT Handbooks for specific Engine Adapter Assemblies, are available through NAVAIRWARCENACDIV Lakehurst, New Jersey, code 3.4.1. These OJT handbooks consist of hands-on exercises with actual equipment, troubleshooting problems, diagrams, learning objectives, instruction sheets, assignment sheets, problem sheets, and written tests. The program is optional; it may be time-imposed or self-paced. The list of training courses available is located below in paragraph 3 of this section. Upon completion of a six-month OJT period, the test cell operator is eligible to receive certification, licensing, and the appropriate NEC or MOS per OPNAVINST 4790.2G.

The following is an engine, adapter, and test stand matrix of on-board training courses available through local NAESU representatives.

TRAINING COURSE, ENGINE, ADAPTER, AND TEST STAND MATRIX

COURSE NUMBER	ENGINE	ADAPTER	TEST STAND
N-450-0001	GTETS Operator	None	Turboprop/ Turboshaft/APU
N-450-0002	GTETS Operator	None	Turbofan/Turbojet
N-450-0003	TF30-P-412/414/414A	618AS448-1	A/W 37T-1
N-450-0004	TF30-P-412/414/414A	919AS222-1	A/F 37T-6/6A
N-450-0005	TF30-P-412/414/414A	604AS631-1/2	A/F 37T-14
N-450-0006	J52-P-6/P-8/P-408	604AS625-1/3	A/E 37T-14
N-450-0009	TF34-GE-400/400A	664AS100-19 w/21C5515	A/E 37T-14
N-450-0010	F404-GE-400402	1251AS300-1	A/W 37T-1
N-450-0011	GTCP36-200/201	298071-1	A/W 37T-1
N-450-0012	T-62T-40-1	1406AS100-1	A/E 37T-26A
N-450-0015	GTCP95-2/-3	1147AS700-3	A/E 37T-26A
N-450-0016	T56-A-10W/10WA/14	6887822	A/E 37T-17
N-450-0017	T58-GE-8E/8F/10/16/402	981AS101-1 w/733AS300-1	A/E 37T-24(V)4

COURSE NUMBER	ENGINE	ADAPTER	TEST STAND
N-450-0020	T64-GE-6B/413/415/416	1476AS121-1/2	A/E 37T-24(V)2
N-450-0021	T700-GE-401	1289AS123-1 w/981AS107-1	A/E 37T-24(V)5
N-450-0022	F402-RR-406A/408	604AS1077-1	A/E 37T-14 (Un-enclosed)
N-450-0023	F402-RR-406A/408	604AS1077-2	A/E 37T-14
N-450-0024	MK II/IV GTS/APU	1467AS100-2/3	A/E 37T-26A
N-450-0026	F404-GE-400	1251AS100-1	A/F37T-6/6A
N-450-0027	F404-GE-400	1251AS200-1/2	A/E 37T-14
N-450-0028	T-62T-11/-27	1364AS100-1	A/E 37T-26A
N-450-0029	T56-A-7/16/423	6887823	A/E 37T-17
N-450-0030	T56-A-425/426	6889878	A/F 37T-17
N-450-0032	J52-P-6/P-8/P-408	618AS445-1	A/W 37T-1
N-450-0033	J52-P-6/8/408	919AS220-1	A/F 37T-6/6A
N-450-0034	T56-A-425/426/427	23034333	A/E 37T-17
N-450-0041	T58-GE-8/10/16/400	1514AS100-1	A/W 37T-1
N-450-0043	1427AS100-1/ 1314AS100-1 Air Dynamometers	None	A/E 37T-24(V) A/E 37T-16(V) A/W 37T-1
N-450-0044	GTCP36-150(BH)APU	298843-1	A/E 37T-26A
N-450-0045	T58	1562AS100-1	A/F 37T-16(V)1
N-450-0046	T64	1562AS100-2	A/F 37T-16(V)2
N-450-0047	T700	1562AS100-3	A/F 37T-16(V)3
N-450-0048	T400	1562AS100-4	A/F 37T-16(V)4
N-450-0049	F110-GE-400	1754AS100	A/W 37T-1
N-450-0050	F110-GE-400	1754AS100	A/F 32T-10
N-450-0051	T400	981AS/M-3	A/E 37T-24(V)3

b. Maintenance Training Improvement Program . The Maintenance Training Improvement Program (MTIP) is used to establish an effective and efficient training system responsive to fleet training requirements. MTIP is a training management tool that, through diagnostic testing, identifies individual training deficiencies at 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 assisted in development of MTIP by providing those question banks (software) already developed by the Navy. MTIP was implemented per OPNAVINST 4790.2G. MTIP allows increased effectiveness in the application of training resources through identification of skills and knowledge deficiencies at the activity, work center, or individual technician level. Refresher training is concentrated where needed to improve identified skill and knowledge shortfalls. MTIP question banks for GTETS were developed by Aircraft Intermediate Maintenance Department model managers for specific engines and test cells. These model managers are identified in CNO letter N889H2/2U608603, dated 5 October 1992. MTIP will be replaced by Aviation Maintenance In-Service Training (AMIST) in FY01.

c. 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. AMIST will begin when funding becomes available in FY01.

AMTCS will redesign the aviation training process (training continuum), and introduce Computer-Based Training (CBT) throughout the Navy technical training process. The application and adoption of recent advances in computer hardware and software technology will enable 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. NA.

3. Other On-Board or In-Service Training Packages. The Marine Corps on-board training is based on the Marine Corps Order P4790.12, Individual Training Standards Systems and the Maintenance Training Management and Evaluation Program (MATMEP). This program is designed to meet Marine, 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 help identify training deficiencies that can be addressed with refresher training. (MATMEP will be replaced by AMTCS in approximately FY02).

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers. Various manufacturers provide components for GTETS which are integrated and installed by NAVAIRWARCENACDIV Lakehurst. The contract numbers, manufacturers, and engine test systems for GTETS are as follows:

CONTRACT NUMBER	MANUFACTURER	GTETS
N00140-75-C-0589	Wilson Machine Co.	A/E 37T-17(V)
N00140-86-C-0642	Space Corporation	A/F 37T-19(V)
N68335-89-C-0457	Space Corporation	A/F 37T-16(V)
N00140-78-C-0496	Wilson Machine Co.	A/F 37T-6
N00140-81-C-6223	Wilson Machine Co.	A/F 37T-6A
N00140-85-C-E207	Janke & Co., Inc.	A/F 32T-10
N00140-76-C-0252	Wilson Machine Co.	A/W 37T-1
N00140-76-C-0190	Hayes Corporation	A/E 37T-14
See Note 1	Hayes Corporation	A/F 37T-9
See Note 1	Hayes Corporation	A/F 37T-11
N00140-79-C-0804	Hayes Corporation	A/E 37T-26A
N00140-83-C-6614	Space Corporation	A/M 37T-23

Note 1: A/F 37T-9 and A/F 37T-11 have been reconfigured from A/E 37T-14. There are no contract numbers for the reconfiguration.

2. Program Documentation. The Integrated Logistics Support Plans (ILSPs) are as follows:

GTETS	ILSP Date
• A/E 37T-17(V)	ILSP-CGSE-0194:AA dated July 1976
• A/E 37T-19(V)	ILSP-CGSE-0194:AA dated July 1976
• A/E 37T-24(V)	ILSP-CGSE-0239:AA dated 30 October 1980
• A/E 37T-14	ILSP-CGSE-0122:AA dated 22 February 1973
• A/E 32T-9	ILSP-CGSE-0395:AA dated 13 January 1981
• A/E 32T-11	None

GTETS	ILSP Date
• A/E 32T-6	ILSP-CGSE-0212:AA dated 6 January 1977
• A/F 37T-6A	ILSP-PGSE-0376:AA dated January 1981
• A/F 32T-10	ILSP-PGSE-0376:AA dated January 1981
• A/F 37T-16(V)	ILSP-CGSE-0239:AA dated October 1980
• A/M 37T-23	ILSP-CGSE-0409:AA dated 17 November 1981
• A/W 37T-1	ILSP-CGSE-0007:AA dated 23 August 1973
• A/E 37T-26A	ILSP-ULSS-3006:AA dated 24 May 1993

3. Technical Data Plan. Technical publications are in place for all GTETS. All manuals are Operation and Maintenance Instructions with Illustrated Parts Breakdowns. The manuals can be ordered from the Naval Publications and Forms Center, Philadelphia, Pennsylvania. MRCs were developed for each GTETS, concurrently with the technical manuals. Periodic update of the MRCs will be accomplished to include newly designed and developed GTETS and adapters.

4. Test Sets, Tools, and Test Equipment. Special tools are not required for operation or maintenance of the GTETS. However, each type engine to be tested requires an adapter assembly peculiar to that type engine before testing can begin. All engine adapter assemblies are available and are being utilized and delivered with the type GTETS.

5. Repair Parts. GTETS are repaired by the IMAs. Supply support for the GTETS is provided under the Program Support Inventory Control Point (PSICP) concept. The Naval Inventory Control Point, Philadelphia, Pennsylvania, is the PSICP. Navy Facilities Engineering Command (NAVFACENGCOM), NAVFACENGCOM MO-322, Volume 2 is used by the controlling activity when dealing with periodic maintenance of equipment or facilities under NAVFACENGCOM cognizance.

6. Human Systems Integration. NA.

K. SCHEDULES

1. Installation and Delivery Schedules. Installation of all GTETSs has been completed.

2. Ready For Operational Use Schedule. GTETS is ready for operational use approximately 30 days after delivery.

3. Time Required to Install at Operational Sites. The time required for installation is approximately 30 days for all units.

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

5. Training Device and Technical Training Equipment Delivery Schedule. NA.

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

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS. NA.

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the Gas Turbine Engine Test System and, therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

- II.A.1.a Operational and Fleet Support Activity Activation Schedule.
- II.A.1.b. Billets Required for Operational and Fleet Support Activities
- II.A.1.c. Total Billets Required for Operational and Fleet Support Activities
- II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule
- II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities
- II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities
- II.A.3. Training Activities Instructor and Support Billet Requirements
- II.A.4. Chargeable Student Billet Requirements
- II.A.5. Annual Incremental and Cumulative Billets

II.B. Personnel Requirements

- II.B.1. Annual Training Input Requirements

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the Gas Turbine Engine Test System and, therefore, are not included in Part III of this NTSP:

III.A.1. Initial Training Requirements. Initial Training has been completed.

III.A.2. Follow-on Training**.** Training is conducted on-site by NAESU personnel and senior test system operators (E-5 and above). Test system training personnel are responsible for obtaining training courses from NAVAIRWARCENACDIV Lakehurst, New Jersey (324000B). Training Requirements will be met via OJT.

III.A.2.a. Existing Courses

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phase Out

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the Gas Turbine Engine Test System and, therefore, are not included in Part IV of this NTSP:

IV.A. Training Hardware

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

IV.A.2. Training Devices

IV.B.1. Training Services

IV.B.2. Curricula Materials and Training Aids

IV.B.3. Technical Manuals

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 V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
AIR-552	Commence analysis of manpower personnel, and training Requirements	6/81	Completed
AIR-417	Promulgate ILS Master Plan	1/82	Completed
AIR-552	Promulgate Draft NTSP to ALCON for review and comment	2/82	Completed
AIR-552	Submit Proposed NTP to OPNAV	12/83	Completed
OP-112D3	Approve and promulgate NTSP	1/84	Completed
PMA 205	Award Factory Training Contract	1/87	Completed
PMA 205	Award Curriculum Material Contract	1/87	Completed
OP-112D3	Promulgate update NTSP	2/87	Completed
PMA 205	CommenceTraining Advisory Services	12/88	Completed
OP-112D3	Promulgate Proposed NTSP	4/89	Completed
PMA 205	Commence Initial Training	9/89	Completed
TAs	Commence follow-on replacement training	3/90	Completed
CNO	NAMTRAGRU authorized to cancel training and transferred responsibility of training to NAESU	9/92	Completed
NAESU	Commence follow-on replacement training	10/92	Completed
PMA 205	Update NTSP	3/97	Completed
PMA 260	Submit Proposed NTSP to OPNAV	9/97	Completed
OPNAV	Approve and promulgate NTSP	8/98	Completed

PART VI - DECISION ITEMS/ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS
None			

PART VII - POINTS OF CONTACT

NAME/ FUNCTION / ACTIVITY, CODE / INTERNET ADDRESS	TELEPHONE NUMBERS
CAPT A. Steigelman Head, Plans, Policies, and Fleet Maintenance CNO, N881B steigelman.anthony@hq.navy.mil	COMM: (703) 604-7747 DSN: 664-7747 FAX: (703) 604-972
CAPT F. Smith Head, Aviation Technical Training Branch CNO, N889H smith.frank@hq.navy.mil	COMM: (703) 604-7730 DSN: 664-7730 FAX: (703) 604-6969
AZC S. Dean NTSP Manager CNO, N889H7 dean.scott@hq.navy.mil	COMM: (703) 604-7714 DSN: 664-7714 FAX: (703) 604-6939
CDR T. O'Loughlin Aviation Manpower CNO, N122C	COMM: (703) 695-3113 DSN: 225-3113 FAX: 703) 614-5308
Mr. R. Zweibel Training Technology Policy CNO, N75B zweibel.robert@hq.navy.mil	COMM: (703) 614-1344 DSN: 224-1344 FAX: (703) 695-5698
LtCol G. Diaz USMC Aircraft Maintenance Officer CMC, ASL-33 diazg@notes.hqi.usmc.mil	COMM: (703) 614-2237 DSN: 224-2237 FAX: (703) 697-7343
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AMHC C. Poirier Assistant Program Manager for Training NAVAIRSYSCOM, PMA205-3A3 poirierca.jfk@navair.navy.mil	COMM: (301) 757-8141 DSN: 757-8141 FAX: (301) 757-8709
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PART VII - POINTS OF CONTACT

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LCDR Hoffer Fleet Training and Readiness Coordinator CINCPACFLT, N-321	COMM: (808)474-6965 DSN: 474-6965
LTCOL M. Sword Director, Total Force Structure Division MCCDC, C53 michael_j_sword\tfsdivision\mccdc\usmc.mil	COMM: (703) 784-6027 DSN: 278-6027 FAX: (703) 784-6022
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Mr. S. Mersky Supervisory Engineer NAVAIRWARCENACDIV LKE, 4871 merskys4@lakehurst.navy.mil	COMM: (732) 323-7153 DSN: 624-7153 FAX: (732) 323-4810
CAPT P. Pratt Enlisted Training and Education ETE 322 capt-paul.pratt@smtp.cnet.navy.mil	COMM: (850) 452-4883 DSN: 922-4883 FAX: (850) 452-4951
AVCM J. Gaff Enlisted Training and Education ETE 3221 avcm-james.graff@smtp.cnet.navy.mil	COMM: (850) 452-4897 DSN: 922-4897 FAX: (850) 452-4951
ATCS E. Powell General Programs Technical Coordinator NAMTRAGRU, N2211 namtghq.n2211@smtp.cnet.navy.mil	COMM: (850) 452-9708 X251 DSN: 922-9708 X251 FAX: (850) 452-8769
AWCS Rainwater PQS Development Group NETPDTC, N34 awcs-william.rainwater@smtp.cnet.navy.mil	COMM: (850) 452-1035 DSN: 922-1035 FAX: (850) 452-1764

PART VII - POINTS OF CONTACT

NAME/ FUNCTION / ACTIVITY, CODE / INTERNET ADDRESS	TELEPHONE NUMBERS
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