

APPROVED  
NAVY TRAINING PLAN  
FOR  
AVIATION LIFE SUPPORT SYSTEMS  
A-50-9206/A  
JUNE 1997

## AVIATION LIFE SUPPORT SYSTEMS

## EXECUTIVE SUMMARY

This Navy Training Plan (NTP) has been developed to document the manpower, personnel, and training requirements associated with Aviation Life Support Systems (ALSS). ALSS consists of specialized clothing and equipment designed to permit aircrew members to function within their flight environment, safely escape from a disabled aircraft, survive after escaping the aircraft, and provides equipment to permit safe recovery of aircrewmembers. Several new systems are being added to the ALSS inventory including the Navy Combat Edge anti-gravity flight ensemble, Helicopter Emergency Egress Device (HEED), Passenger Anti-Exposure Survival Suit, and Advanced Laser Eye Protection Visor. Two other new systems are part of ALSS, but have separate NTPs documenting their specific requirements. These are the SJU-17(V) Navy Aircrew Common Ejection Seat (NACES) and the On-Board Oxygen Generating System (OBOGS). The ALSS program Milestones, Initial Operational Capability (IOC), and Integrated Logistic Support Plan (ILSP) are as stated by specific type ALSS gear.

Maintenance of most ALSS is performed at organizational and intermediate levels by Navy Aircrew Survival Equipmentman (PR) personnel and Flight Equipment Marines with the Military Occupational Specialty (MOS) 6060. At the organizational level, Aviation Structural Mechanic (Safety Equipment) (AME) personnel and Marine Corps Aircraft Safety Equipment Mechanics, with Navy Enlisted Classifications (NEC) or MOSs applicable to the specific aircraft, perform maintenance on ejection seats and oxygen systems. At the intermediate maintenance level, a new NEC, 7356, has been established for PR personnel (E-4 through E-7). Aviation Electronics Technician (AT), NEC 6611, and Aircraft Communication Systems Technician, MOS 6412, personnel test and inspect the emergency radios and beacons. No change to existing manpower is necessary as a result of this NTP.

ALSS operator training is integrated into general and aircraft-specific aircrew training through Aviation Physiology, Aviation Water Survival, and Fleet Readiness Squadron Training. Maintenance training for PRs is currently established in class A1 and C1 courses. ALSS maintenance training for AMEs and Marine Aircraft Safety Equipment Mechanics is provided through aircraft-specific Naval Aviation Maintenance Training Group Detachment (NAMTRAGRU DET) courses. Aviation maintenance courses have undergone revisions to conform with a new training concept. A1 courses have been sectioned into two or more classes called core and strand, and C1 courses into initial and career training classes.

Two new intermediate level maintenance training tracks are being established to provide pipeline training to PR and MOS 6060 personnel. One has been established at NATTC Pensacola, and includes three courses focusing on specific areas of maintenance. The other is proposed and will include Oxygen Enriched Air System and NACES intermediate level maintenance. This track will be established at Maintenance Training Unit (MTU) 1038, NAMTRAGRU DET Lemoore, California, and MTU 1039, NAMTRAGRU DET Cecil Field, Florida.

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**AVIATION LIFE SUPPORT SYSTEMS**

**Introduction**

The Aviation Life Support Systems (ALSS) Navy Training Plan (NTP) was first developed in August 1991. This Approved NTP updates the Proposed NTP A-50-9206/P dated March 1997. This NTP reflects the latest information on the ALSS program. Specifically, adding new systems to the ALSS inventory including the Navy Combat Edge, Replacement Helicopter Helmet, Passenger Anti-Exposure Survival Suit, AN/PRC-112 Radio Set, and Advanced Laser Eye Protection Visor. In addition, a new training concept that has been implemented throughout aviation maintenance is addressed in the Training Concept of this NTP.

## LIST OF ACRONYMS

ABO	Aviators Breathing Oxygen
ACNO	Assistant Chief of Naval Operations
AEPS	Aircrew Escape Propulsion System
AIMD	Aircraft Intermediate Maintenance Department
ALEPV	Advanced Laser Eye Protection Visor
ALSS	Aviation Life Support System
AM	Amplitude Modulation
AME	Aviation Structural Mechanic (Safety Equipment)
APPB	Assisted Positive Pressure Breathing
ASTC	Aviation Survival Training Center
AT	Aviation Electronics Technician
CAD	Cartridge Actuated Device
CBR	Chemical, Biological, and Radiological
CM	Corrective Maintenance
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
CO <sub>2</sub>	Carbon Dioxide
CW	Continuous Wave
DME	Distance Measuring Equipment
DMSO	Director Major Staff Office
DT	Developmental Test
ECP	Engineering Change Proposal
EOD	Explosive Ordnance Disposal
FAILSAFE	Fleet Air Introduction Liaison Survival Aircrew Flight Equipment
FMS	Foreign Military Sales
FREST	Fleet Replacement Enlisted Skills Training
FRS	Fleet Readiness Squadron
G	Gravity
+Gz	High Positive Acceleration
HEED	Helicopter Emergency Egress Device
HF	High Frequency
ILSP	Integrated Logistics Support Plan
LOX	Liquid Oxygen
LPP	Life Preserver Personal
LPU	Life Preserver Unit
MALS	Marine Aviation Logistic Squadron
MATMEP	Maintenance Training Management and Evaluation Program
MCAS	Marine Corps Air Station
MOS	Military Occupational Specialty
MRC	Maintenance Requirements Cards
MSD	Material Support Date
MTIP	Maintenance Training Improvement Program
MTU	Maintenance Training Unit
NACES	Navy Aircrew Common Ejection Seat

## LIST OF ACRONYMS (Continued)

NAMP	Naval Aviation Maintenance Program
NAMTRAGRU DET	Naval Air Maintenance Training Group Detachment
NAS	Naval Air Station
NATOPS	Naval Air Training and Operating Procedures Standardization
NATSF	Naval Air Technical Support Facility
NATTC	Naval Air Technical Training Center
NAVAIRSYSCOM	Naval Air Systems Command
NAVAVNDEPOT	Naval Aviation Depot
NAVICP	Naval Inventory Control Point
NAWCAD	Naval Air Warfare Center Aircraft Division
NCE	Navy Combat Edge
NEC	Navy Enlisted Classification
NES	Navy Egress System
NTP	Navy Training Plan
OBOGS	On Board Oxygen Generating System
OEAS	Oxygen Enriched Air System
OEVAL	Operational Evaluation
OPNAVINST	Office of the Chief of Naval Operations Instruction
OT	Operational Test
PM	Preventive Maintenance
PMA	Program Manager, Air
PQS	Personnel Qualifications Standards
PR	Aircrew Survival Equipmentman
RFT	Ready For Training
SAR	Search And Rescue
SELRES	Selected Reserve
SKU	Survival Kit Unit
TECHEVAL	Technical Evaluation
TTE	Technical Training Equipment
UHF	Ultra High Frequency
VIP	Very Important Person
W/C	Work Center

PART I - TECHNICAL PROGRAM DATA

NTP No.: A-50-9206/A  
Date: June 1997

A. TITLE-NOMENCLATURE-PROGRAM

- 1. Title-Nomenclature-Acronym Aviation Life Support Systems (ALSS)
- 2. Program Element
  - a. 0604264NBA-5 - Research, development, test, and evaluation
  - b. 0702207NBA1 - Operation and maintenance
  - c. 070801NBA3 - Other procurements

B. SECURITY CLASSIFICATION

- 1.....Characteristics Unclassified
- 2.....Performance Unclassified
- 3.....Navy Training Plan Unclassified

C. NTP PRINCIPALS

- 1. Assistant Chief of Naval Operations/  
Director Major Staff Office  
(ACNO/DMSO) Program Sponsor .....CNO (N880G4)
- 2. ACNO/DMSO Resource Sponsor .....CNO (N880G4)
- 3. Marine Corps Program Sponsor .....CMC (ASL-33)(APW-71)
- 4. Principal Development Activity (PDA).....NAVAIRSYSCOM (PMA202)
- 5. Training Agents (TA) .....CINCLANTFLT  
CINCPACFLT  
CNET  
CMC  
BUMED O2T
- 6. Training Support Agent (TSA) .....NAVAIRSYSCOM (PMA205)
- 7. Manpower and Personnel (MP) Mission Sponsor....CNO (N1)
- 8. Chief of Naval Personnel (CHNAVPERS).....BUPERS (PERS-4, PERS-40, 221)
- 9. Marine Corps Combat Development Command.....TFS Division  
(MCCDC) Manpower Management

D. **OPERATIONAL USES**

1. **Purpose.** The Aviation Life Support Systems (ALSS) are composed of specialized clothing and equipment designed to permit aircrew personnel to function within their flight environment, safely escape from a disabled aircraft, survive after escaping the aircraft, and assist with the rescue effort. Various combinations of ALSS are employed on every Navy and Marine Corps aircraft, depending on the aircraft type, mission, and flight environment.

The Navy Combat Edge (NCE) aircrew protective assembly is a system of specialized garments and equipment that provide an interface between the pilot and the aircraft. The NCE has been designed to significantly reduce the adverse effects of excessive, sustained, and rapid onset high positive acceleration  $G_z$  forces. Other new systems include the Replacement Helicopter Helmet, Passenger Anti-Exposure Survival Suit, AN/PRC-112 Radio Set, and Advanced Laser Eye Protection Visor.

2. **Foreign Military Sales (FMS) and Other Source Procurement Information** concerning FMS and other procurements may be obtained by contacting the Aircrew Systems Program Manager, PMA202.

E. **TECHNICAL AND/OR OPERATIONAL EVALUATION (TECHEVAL/OPEVAL)** Although TECHEVAL and OPEVAL are not normally performed for ALSS, both evaluations were conducted for the NCE.

1. **TECHEVAL.** Developmental Test (DT)-IIB for the NCE was conducted from June 1994 to April 1995 at Naval Air Warfare Center Aircraft Division (NAWCAD) Patuxent River, Maryland. DT-IIC was conducted at NAWCAD Patuxent River, Maryland, in June 1995 and was completed in August 1995. NAWCAD Warminster, Pennsylvania personnel conducted operation and maintenance training for TECHEVAL and pre-OPEVAL personnel prior to NCE testing.

2. **OPEVAL.** NCE Operational Tests (OT)-1A, OT-1B, and OT-1C have been completed by testing conducted at Naval Air Station (NAS) Oceana, Virginia, NAS Lemoore, CA, Marine Corps Air Station (MCAS) Beaufort, South Carolina, and NAS Miramar, CA. OT-IIA pre-OPEVAL was conducted from July through August 1995 at NAWCAD Patuxent River, MD. Formal OPEVAL on the NCE, OT-IIB began in October 1995 and was completed in February 1996. OT-IIB was conducted by VX-9. OPEVAL personnel received operation and maintenance training from NAWCAD Warminster personnel.

F. **EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED** Various anti-gravity (G) systems, including anti-G garments and hardware currently used by aircrew personnel in high performance fighter and attack aircraft, will be replaced by the NCE. The AN/PRC-63 Radio Set has been replaced by the AN/PRC-90 Survival Beacon which in turn is being replaced by the AN/PRC-112 Radio Set. The Replacement Helicopter Helmet replaced the SPH-3C.

G. **DESCRIPTION**

1. **Functional Description** For the purpose of this Navy Training Plan (NTP), all ALSS clothing and equipment have been divided into 19 functional groups, described below. All ALSS garments and protective devices are available in a variety of sizes to ensure a proper fit.

a. **Navy Combat Edge (NCE) A/P22P-16** The NCE is an integrated aircrew flight ensemble designed to increase protection from the physiological hazards associated with  $G_z$  forces. During exposure to  $G_z$ , blood pooling in the lower portions of the body deprives the brain of an adequate supply of oxygenated blood and causes a loss of vision. This is followed by a loss of consciousness. The NCE

will provide enhanced acceleration protection through the use of Assisted Positive Pressure Breathing (APPB) combined with physical conditioning and training in anti-G straining maneuvers. The basic NCE concept is an adaptation of the Air Force's Combined Advanced Technology Enhanced Design G Ensemble (COMBAT EDGE) modified with Navy unique features, compatible with F/A-18 aircraft and current life support, survival, and rescue equipment. The NCE components, described below, will be integrated with other protective features of current ALSS equipment to achieve the full combat potential of the weapon system.

(1) **HGU-87/P22P-16 Aircrew Protective Helmet Assembly** The HGU-87/P22P-16 is a modified HGU-68/P tactical aircraft helmet upgraded with a helmet bladder assembly. The assembly includes an inflatable occipital bladder which connects to the oxygen mask breathing hose. The occipital bladder will automatically inflate during the APPB mode to a pressure equal to the mask pressure, thereby tightening the mask to the face to prevent leakage.

(2) **MBU-20/P Oxygen Breathing Mask** The NCE uses the MBU-20/P Oxygen Mask which is designed to provide oxygen gas for breathing and inflation of the occipital bladder while maintaining face seal integrity under positive pressure breathing conditions. The mask assembly consists of a silicone facepiece and associated hardshell, inhalation and exhalation valves, microphone and amplifier, hoses, retention straps, and connectors that attach the MBU-20/P to the HGU-78/P22P-16 helmet assembly.

(3) **CSU-17/P Counter-Pressure Vest** The CSU-17/P Counter-Pressure Vest connects with the chest-mounted G-compensated breathing regulator. The vest's primary function is to externally balance the internal chest cavity pressure associated with APPB. Counter pressure is necessary to reduce the risk of lung damage and to aid in exhalation. The vest bladders connect directly to the breathing regulator for the supply gas and vest pressurization. Bladder pressure is maintained close to mask cavity pressure at all times.

(4) **CRU-103/P G-Compensated Oxygen Breathing Regulator** The CRU-103/P is an automatic, positive pressure breathing type regulator which provides on-demand breathing gas to the aircrew via the oxygen mask. The regulator incorporates a pressure proportioning valve which receives pressure signals from the G valve outlet via a sensing line and delivers pressure to the mask, mask tensioning occipital bladders, and counter-pressure vest.

(5) **CSU-20/P22P-16 Cutaway Anti-G Garment** The Cutaway Anti-G Garment will be used to pressurize the lower torso area. It is similar to the CSU-13B/P Anti-G Suit, except the Cutaway Anti-G Garment provides a 40 percent increase in leg and abdomen bladder coverage to further aid in preventing blood pooling in the legs. A pneumatic sensing line is installed in the lower G-garment hose which is routed to the G-compensated oxygen breathing regulator. G-valve response due to the aircraft G's provides the pressure to the anti-G garment and the pressure signal to the breathing regulator via the sensing line. The regulator responds to the signal and delivers the appropriate output pressures for aircraft applied G's.

b. **Anti-G Garments** Anti-G Garments are designed to provide protection against the high G-forces experienced in high performance aircraft. Anti-G garments consist of a fire-resistant cloth outer shell which houses a bladder. As G-forces increase, the bladder inflates to pressures that are predetermined in an automatic valving system installed in the aircraft.

The inflated bladder restricts the flow of blood downward to the aircrewman's waist and feet, thereby lessening the effects of blackout. Anti-G garments are used by aircrew personnel of A-6, EA-6, KA-6, F/A-18, AV-8B, F-14, T-2, TA-4, T-45, F-5, and S-3 aircraft.

c. **Anti-Exposure Clothing** Anti-Exposure Clothing is designed to protect aircrew personnel from exposure to cold weather conditions in the event of

immersion. The anti-exposure clothing is used by the aircrew personnel of all Navy and Marine Corps aircraft operating in geographic areas that pose a potential threat of exposure.

(1) **Constant Wear Anti-Exposure Assembly** The Constant Wear Anti-Exposure Assembly consists of a waterproof outer garment worn over a ventilation liner and cold weather undergarments.

(2) **Quick Donning Anti-Exposure Assembly** The Quick Donning Anti-Exposure Assembly is carried in the aircraft and donned only in an emergency. This assembly consists of a waterproof outer garment equipped with permanently attached boots and seals at the wrist and neck. An inflatable hood and anti-exposure mittens are stowed in the pockets. The assembly is worn over regular flight clothing.

d. **Aviators' Clothing** Aviators' clothing is designed to be worn by aircrew members as outer garments during flight operations in any military aircraft. Aviators' clothing consists of safety boots, coveralls, gloves, jacket, cold weather trousers, and HGU-4/P sunglasses. Aircrew safety boots are high-top style with rigid toes and are made of leather with fuel-resistant soles. Coveralls and gloves are made of fire-resistant Nomex material. The jacket is available in two fabrics, leather or nylon. Cold weather trousers are constructed of insulated nylon. Aviators' clothing is manufactured in different weights to ensure adequate protection for a wide range of temperatures and weather conditions.

e. **Breathing Masks**

(1) **Quick Donning Oxygen and Smoke Masks** The Quick Donning Oxygen Mask and Smoke Mask are designed to dispense gaseous oxygen from a demand type regulator. Additionally, the masks provide protection from smoke, carbon monoxide, and other incapacitating gasses. The full face oxygen and smoke masks consist of a molded rubber faceplate with microphone cavity, plastic lens, exhalation valve, molded rubber headstrap assembly, and a delivery hose with communications leads. The delivery hose is covered with knitted tubular polyamide. The communication cable is molded into the hose with leads extending for attachment for the mask-mounted microphone. Both masks may be worn with earphones or with a protective helmet. These masks are employed by aircrew personnel aboard C-130, E-6A, and P-3C aircraft.

(2) **Pressure-Demand Oxygen Mask** The Pressure-Demand Oxygen Mask is designed to be worn over the face forming a seal on the cheeks, over the bridge of the nose, and under the chin. The mask is designed for use with a regulator which provides breathing gas upon demand at a pressure schedule dependent on the altitude. The mask may also be used with continuous flow bailout or walk-around oxygen sources. The mask provides facial protection from projectiles and fire as well as being qualified for depths of 16 feet under water.

Three variations of this mask are configured by adding or removing major components to and from the basic MBU-12/P oxygen mask subassembly. The desired configuration is dependent upon the aircrew and aircraft application including A-6, EA-6B, C-2A, E-2C, F-14, F-16, F/A-18, AV-8B and S-3. The basic MBU-12/P subassembly is a lightweight, low profile, pressure-demand type oxygen mask. The mask features an integral faceplate and hard shell. The faceplate is made from pliable silicone and the hard shell is polysulphonate. The mask also has a combination inhalation-exhalation valve and a flexible silicone hose. The typical mask assembly contains offset bayonets for attaching the mask to the helmet, a connector used to attach the mask to the regulator or walk-around units, a regulator used to control the flow of oxygen to the mask, the appropriate communications cables to connect the mask to the aircraft intercommunications system, and a microphone and amplifier.

(3) **Helicopter Emergency Egress Device (HEED).** HEED is a compact, lightweight breathing apparatus used by helicopters, E-2, MV-22 and C-2 aircrew personnel during emergency ditching in water. HEED provides two to four minutes of breathing air at a water depth of 20 feet and a temperature of 55 degrees Fahrenheit. HEED is composed of two major components; an aluminum cylinder and a demand-type, 2 stage regulator with attached mouthpiece. The cylinder has a capacity of 1.8 cubic feet of air at a rated pressure of 3000 pounds per square inch (PSI). The regulator is a simple demand type mounted directly into the cylinder. The regulator consists of a metallic inner main body encased in a plastic housing, exhaust disc, pressure indicator, and an on-off switch.

(4) **Chemical, Biological, Radiological (CBR) Protective Mask** CBR protective masks are designed to provide aircrewmembers with head, eye, and respiratory protection against the toxic and lethal effects of chemical or biological agents and radioactive fallout. The assembly provides above-the-neck protection and is designed to be worn with a below-the-neck protective clothing ensemble described below. The Special Missions Manual, NAVAIR 13-1-6.10, describes in detail the required CBR clothing and equipment for each type of special mission.

The major components of a typical CBR protective mask are the hood and faceplate. The hood, made of impervious bromo-butyl rubber, covers the entire head and extends down past the neck. A molded, one-piece polycarbonate faceplate is sealed into the front of the hood. The upper part is transparent and forms the optical area. The lower part is shaped to fit the wearer's lower face. Included on the faceplate is a nose occluder, toggle harness, anti-drown connector, drinking tube, microphone assembly, and valves and adapters required to connect the mask to portable oxygen, ventilators, or aircraft as required.

f. **CBR Protective Clothing** CBR protective clothing is designed to be worn in conjunction with one of the available CBR protective masks and provides an aircrewman with below-the-neck protection against the effects of radioactive fallout and chemical or biological agents. The components that comprise the below-the-neck protective ensemble are chemical liner, cotton undergarments, chemical protective socks, disposable footwear covers, aircrewman's cape, chemical protective gloves, and chemical glove inserts.

The one-piece chemical liner is made of a nylon viscous non-woven fabric. The fabric's outer surface is treated with a fluorochemical liquid repellent finish which repels liquid agents. The fabric's inner surface is coated with activated charcoal which absorbs chemical vapors. The cotton undershirt and shorts are worn under the chemical liner to prevent skin irritation from the charcoal lining and to minimize the amount of perspiration contamination to the chemical liner. The socks are made of polyethylene. They are vapor impermeable which protect the feet from chemical agents. The footwear covers are worn over the flier's boots to protect the user from contamination en route between the shelter and the aircraft. The footwear covers must be removed before entering the aircraft. The aircrewman's cape is a large clear disposable plastic bag worn over the body. The cape protects the user from contamination en route to the aircraft and must be removed before entering the aircraft. The chemical protective gloves are made of butyl, and protect the hands from chemical agents. Cotton glove inserts must be worn under the chemical gloves to absorb perspiration.

g. **Ejection Seats** There are several models of ejection seats installed in Navy and Marine Corps aircraft by type:

MK GRU-EA-7 in EA-6B	SJU-4A in AV-8
MK GRU-7 in KA-6, A-6E	SJU-5A in F/A-18B (back), F/A-18C
MK GRU-7A in F-14	SJU-6A in F/A-18B (front)
IE1 Escape Pack in S-3	SJU-17(V) NACES in F/A-18C/D, F-14D, T-45A

(1) **MK GRU and SJU-4/5/6 Series Ejection Seats** The typical ejection seat is a ballistic catapult and rocket system that provides the pilot with a quick

and safe means of escape from the aircraft. The seat system includes an initiation system that jettisons the canopy, positions the pilot for ejection, and fires the seat catapult. Canopy breakers on the top of the seat provide the capability to eject through the canopy should it fail to jettison. As the seat ejects from the aircraft, a rocket motor on the bottom of the seat is fired. A drogue gun is fired to deploy two drogue parachutes. These parachutes either remain attached to the top of the seat or they are released to deploy the main parachute, depending upon the altitude and the number of G's applied to the seat. An automatic time release mechanism opens the main parachute container and releases the drogue parachutes that deploy the main parachute. The major components of a typical ejection seat are:

(a) **Seat Height Actuator** An electrical Seat Height Actuator adjustment in the back of the seat bucket raises and lowers the sitting platform as selected by the aircrew.

(b) **Parachute Container-Headrest** A Parachute Container-Headrest is located at the top of the main beams. It contains the parachute and provides the crew member with neck and head support.

(c) **Electronic Sequencer.** An Electronic Sequencer is integrated into the seat structure to provide safe operation and maximum accessibility for maintenance. The electronic sequencer system provides ejection seat mode selection and timing signals to initiate various seat subsystems. This item is not used on the MK GRU nor the SJU 4/5/6 seats. Utilized on the NACES only.

(d) **Shoulder Harness Restraint** The Shoulder Harness Restraint provides restraint for the pilot when connected to the aircrew torso harness.

(e) **Drogue Deployment Gun** The Drogue Deployment Gun provides automatic deployment of the drogue parachute.

(f) **Parachute Deployment Rocket** The Parachute Deployment Rocket rapidly extracts the bagged parachute and provides a smooth progressive canopy inflation.

(g) **Catapult and Guide Rail Assembly** The Catapult provides the means for ejection of the seat from the aircraft. The Guide Rail Assembly is used to install the main beam assembly to the catapult assembly.

(h) **Emergency Oxygen Cylinder** The Emergency Oxygen Cylinder provides an emergency oxygen supply during loss of the aircraft oxygen system or during the ejection sequence and parachute descent.

(i) **Main Beam Assembly** The Main Beam Assembly provides for attachment of the seat bucket assembly, parachute container, etc.

(j) **Barostatic Harness Release** The Barostatic Harness Release provides automatic harness release during the ejection sequence.

(k) **Rocket Motor.** The Rocket Motor provides additional thrust during the ejection sequence.

(l) **Seat Bucket Assembly** The Seat Bucket Assembly provides seating for the crew member.

(m) **Survival Kit.** The Survival Kit contains the emergency oxygen cylinder and the emergency radio. The soft pack contains the remainder of the survival kit items.

(2) **Navy Aircrew Common Ejection Seat (NACES).** The newest ejection seat is the NACES. The NACES provides commonality, modularity, growth capability,

and phased technology insertion to simplify logistics and lower life cycle costs. A modular construction provides component accessibility and permits upgrading of subsystems without changing the rest of the seat structure. The NACES seat is fully automatic, cartridge operated, and rocket assisted. The primary means of control is by electronic sequencer giving variation to ejection events, depending on the aircraft's altitude and speed. The NACES is equipped with a sealed five-year parachute. Refer to the NACES NTP, A-50-8517B/A, for additional information.

#### h. **Emergency Radios**

(1) **AN/URT-33 Radio Beacon Set** The AN/URT-33 is an emergency radio beacon transmitter which, when activated, transmits a tone-modulated radio frequency signal from a downed aircrew member to the rescue party. The hand-held AN/URT-33 is housed in a watertight case. It has both a flexible and a telescoping antenna. The set can be activated by either an automatic deployment device or a manual on-off switch. The beacon is battery-powered.

(2) **AN/PRC-90-2 Survival Beacon** The AN/PRC-90 Survival Beacon is a dual-channel personal emergency rescue transmitter, used principally for two-way voice or modulated continuous wave (CW) communications between a downed aircrew member and a rescue aircraft. It also contains a swept-frequency homing beacon signal to guide rescue efforts. The hand-held AN/PRC-90 is battery powered and contains a flexible antenna, interchangeable telescopic antenna, functional switch, CW button for Morse Code, volume control, and earphone.

(3) **AN/PRC-112 Radio Set** The AN/PRC-112 Radio Set is the newest rescue-survival radio issued to the fleet. It is an Ultra High Frequency (UHF) Amplitude Modulation (AM) voice radio with five operator selected frequencies, three are preset frequencies and two are operator-selectable. One of the programmable frequencies is normally used for Distance Measuring Equipment (DME) functions. DME permits an ARS-6 equipped helicopter to query the AN/PRC-112 and receive a cockpit readout that provides an approximate direction and distance to the survivor. The AN/PRC-112 operates overtly by radiating a beacon signal with a range of approximately three times that of the AN/PRC-90. When placed in the transponder mode, the radio set operates covertly in conjunction with ARS-6 [Search and Rescue (SAR) avionics equipment], providing bearing and range information to SAR forces. The AN/PRC-112 is powered by a lithium sulfur dioxide battery, which provides superior performance in cold weather operations. The AN/PRC-112 is currently limited in use to forward deployed troops and cold weather operations.

(4) **AN/CRT-3 Series Radio Set** The AN/CRT-3 Series Radio Sets are emergency transmitting systems which enable downed aircrewmembers to send an automatic distress signal or, by using a manual key, to send coded signals to rescue parties. The AN/CRT-3 consists of a hand-generated, self-contained power supply and keying assembly. Also included are a three-position selector switch, push-button telegraph key, signal lamp and jack, antenna assembly, hand crank (for the generator), balloon and kite (to raise the antenna wire), and a hydrogen generator (to inflate the balloon). All items are packed into a floatable equipment container.

(5) **AN/PRT-5 Radio Transmitting Ultra High Frequency Set** The AN/PRT-5 is an emergency radio transmitter which transmits a tone-modulated radio frequency signal in both the High Frequency (HF) and UHF ranges. The set has an inflatable float assembly which allows it to float at sea or sit upright on land. The battery pack is designed to provide 72 hours of continuous operation. The AN/PRT-5 is battery powered and contains an UHF antenna, HF antenna, power switch, and a float assembly which is inflated by a CO<sub>2</sub> (Carbon Dioxide) cartridge or mouth valve. The top section of the transmitter set contains the electronics package and the lower part is the battery case.

#### i. **Helmets and Eye Protection**

(1) **Helmets.** The helmet provides face, eye, ear, and head protection during normal flight operations, in-flight buffeting, and emergency landings. The helmet is designed to distribute impact forces over the entire head and absorb these forces so that a minimum amount of impact reaches the wearer.

The typical helmet consists of an outer shell assembly, form fit liner, visor, and communications system. The outer shell assembly is constructed of Kevlar and resin. A neoprene rubber beading provides protection from the shell edges. An adjustable boom type microphone is attached to the lower left side of the shell. The form fit liner is constructed of polystyrene backing, a leather covering, and a comfort pad. The earcup assemblies are made of molded plastic-formed cavities that house earphones which provide intercommunications within a sound attenuating environment. An ear seal is attached to the flat side of the earcup to provide comfort and an acoustic seal to the wearer. A visor assembly is installed on the upper front section of the outer shell. Single and dual lens visors are used with the lens lowered into a position over the eyes by a manual adjustment screw. The helmet assembly is secured to the head by a chin strap. Cables attached to the helmet connect the earphones and boom microphone assembly to the aircraft's communications system. Adapter plates are mounted on the outer shell to accommodate special equipment such as telescopic sight units and night vision systems.

(2) **Advanced Laser Eye Protection Visor (ALEPV).** The ALEPV is being developed as a day and night usable, low energy visor for use by fixed wing aircrew in a fixed, multiple wavelength laser threat environment. The new visor will be compatible as a helmet component with current Navy and Marine Corps, as well as Army, helmet assemblies. The ALEPV will also be compatible with cockpit displays, night vision systems, and fire control systems.

j. **Life Rafts.** Life rafts are designed for use by aircrew members and passengers forced down at sea. They can also be used on land to ford rivers or as shelters. One-man life rafts are most commonly used by aircrewmen in ejection seat-type aircraft in which case the life raft is an integral part of a soft or hard-type survival kit. Larger life rafts are normally stowed in readily accessible areas inside the aircraft fuselage in compartments specifically designed for that purpose. Some life rafts automatically inflate upon deployment.

Typical life raft assemblies used in military aircraft consist of a one, four, seven, or twelve-to-twenty man life raft and an inflation assembly (CO<sub>2</sub> cylinder with inflation valve). The body of the life raft is comprised of an oval flotation tube constructed of rubberized fabric and an inflatable or non-inflatable floor. The flotation tube may be divided internally by vertical bulkheads to form separate inflatable compartments. The number of bulkheads required is determined by the size and load capacity. Each compartment has an inflation assembly consisting of a CO<sub>2</sub> cylinder and a topping off tube. Survival equipment is stowed in accessory containers and supply pockets attached to the main tube. A sea anchor is attached to the bow of the raft.

#### k. **Oxygen Supply Systems**

(1) **Liquid Oxygen (LOX) Converter** The LOX Converter is designed to store and convert LOX into gaseous breathing oxygen for the aircrew's use during flight. Oxygen in its liquid state (approximately -297° F) is stored in a spherical assembly consisting of inner and outer shells separated by an annular space. The annular space is evacuated, creating a vacuum which prevents the transmittal of heat through the space. The thermos bottle effect created retards heating and eventual conversion of LOX to gaseous oxygen. Valves, tubing, and fittings incorporated in the converter assembly convert LOX on demand to gas, and directs its flow at a controlled rate to the crew for breathing. A typical LOX converter consists of a sphere assembly, build-up and vent valve, relief valve, pressure closing valve, and associated tubing and fittings.

(2) **Oxygen Enriched Air System (OEAS).** The OEAS, formerly the On-Board Oxygen Generating System (OBOGS), has begun to replace the LOX system in new production AV-8B, F-14D, F/A-18D, MV-22 and T-45A aircraft. The OEAS provides a continuous supply of oxygen-enriched air to the aircrew when the system is activated during aircraft engine operation. The OEAS is comprised of two major equipment groups: the OEAS consisting of an oxygen concentrator, monitor, regulator, and the airframe peculiar equipment including heat exchanger/valving, plumbing, and other components crucial to integrating the system to the aircraft. A separate NTP has been developed for the OEAS. For additional information, refer to the OBOGS NTP, A-50-8603B/A.

#### 1. **Oxygen Regulators**

(1) **Aircraft Panel-Mounted Oxygen Regulators** Panel-mounted regulators are used in conjunction with pressure breathing oxygen masks. The regulators provide 100 percent oxygen or an air-and-oxygen mixture at the correct ratio depending on altitude. All controls and indicators necessary for the operation of the regulator are located on an illuminated panel. The controls consist of an on-off switch, flow switch, and selector switch. An oxygen flow gage and a quantity gage are also provided.

(2) **Torso-Mounted Miniature Oxygen Regulators** Miniature regulators are designed for use with the MBU-14 series oxygen mask and are part of the oxygen system in all aircraft requiring chest-mounted regulators. The miniature regulator provides 100 percent oxygen to the aircrewman during flight. Miniature oxygen regulators weigh less than four ounces and have no operator controls or adjustments. The regulator is attached to the aircraft's oxygen supply by means of a quick disconnect hose and is mounted on the aircrewman's torso harness.

m. **Personal Flotation Equipment.** Personal Flotation Equipment (life preservers) are worn by aircrew personnel on overwater flights. In the event of bail out, ejection, or ditching, the device keeps the wearer afloat until a raft is boarded or a rescue team arrives. There are two kinds of life preservers: Life Preserver Personal (LPP) and Life Preserver Unit (LPU).

(1) **Life Preserver Personal (LPP) Type Flotation Device** The LPP type device consists of a single compartment, yoke-type flotation assembly, a pouch and belt assembly, an inflation assembly, and a storage container. The flotation assembly is constructed of chloroprene-coated nylon cloth. It is equipped with an oral inflation valve, signal light, and whistle. The pouch and belt assembly consist of a rubber-coated nylon cloth pouch and adjustable belt. The pouch houses the flotation assembly when not in use. The LPP is used by combat helicopter aircrewmembers.

(2) **Life Preserver Unit (LPU) Type Flotation Device.** The LPU type flotation device is used by all aircrew members other than combat helicopter crews. It consists of a two-chambered flotation assembly constructed of polychloroprene-coated nylon cloth, a casing assembly, two carbon dioxide inflation assemblies, an oral inflation tube, and survival item pouches which contain dye markers and flares. The pouches are attached to the casing assembly with snap hooks.

n. **Personal Parachutes** A parachute is an escape device that retards the speed of an aircrew member's descent after bail-out or ejection from a disabled aircraft, allowing for a safe, controlled ground or water landing. Backpack and chest-mounted parachutes are used in aircraft that do not have ejection systems installed. Navy Egress System (NES)-type parachutes are used with ejection systems. NES-type parachutes are an integral part of the ejection seat system.

A typical parachute consists of five major components: harness, container, suspension lines, canopy, and pilot chute. The harness is an arrangement of nylon webbing and metal fittings designed to hold the parachute assembly securely to the wearer and provide a seat or sling during descent. The container encloses

the pilot chute, canopy, and suspension lines while not in use. The suspension lines are made of nylon and join the canopy to the harness. The canopy is a large round area of cloth that, when inflated, slows the descent of the wearer. The pilot chute is a small parachute attached to the top of the canopy. When the parachute is used, the pilot chute accelerates the deployment of the main canopy and suspension lines.

o. **Rescue Equipment** Rescue Equipment is comprised of common tools and special equipment used by SAR teams to extract downed aircrewmembers. Rescue equipment consists of Aldis lamps, cable grips, carabiners, chemical lights, belay ropes, electric sea markers, pneumatic hand tools, hoisting slings, hoisting vests, forest penetrators, rescue hooks, litters, rescue medical kits, mountain boots, rescue nets, rescue straps, portable oxygen systems, and rappelling equipment. A detailed description of each item may be found in the Aviation Crew Systems Manual, NAVAIR 13-1-6.5.

p. **SAR Swimmer's Personal Equipment** The SAR swimmer's ensemble is an exposure protective assembly designed for continuous wear and will protect the SAR swimmer from exposure to cold water, wind, and spray resulting from emergency rescue actions at sea. The SAR swimmer's wet-suit ensemble consists of a custom made two-piece Farmer John style wet-suit, a custom-made two-piece shorty wet-suit, hood, gloves, boots, and mask. The mask has a wrap-around face plate made of tempered glass. The snorkel is made of a flexible hose unit and has a mouthpiece attached to a solid upper tube. The swim fins are constructed of solid pliable rubber with adjustable straps and buckles.

q. **Seat Survival Kits** The typical seat survival kit is designed for use with a specific ejection system and functions as a seat for the aircrew member. It serves as a container for an emergency oxygen system, life raft, and survival equipment required after ejection. A seat survival kit is a rigid-type container fabricated of molded fiberglass and fits into the seat bucket. It is securely attached by lock receptacles at the lower aft corners of the seat bucket and a negative-G retaining pin receptacle at center forward on the lower container. During normal operation, the kit provides support and comfort for the aircrewman as well as routing for emergency oxygen and communications. If failure occurs in the aircraft oxygen supply, or in case of high altitude or underwater ejection, the kit provides an emergency supply of oxygen for approximately 20 minutes. The lid of the container is fastened to a metal valance and contains the latches and oxygen equipment.

The lower portion of the container consists of the latching mechanism, life raft, and survival equipment including an emergency radio beacon. The radio beacon lanyard is attached to the aircraft and is actuated when the aircrewman ejects. The two parts of the kit are fastened together by a lock and latch mechanism and can be quickly separated for access to the life raft and survival equipment. The ventilated seat cushion and the non-ventilated thigh support cushions are attached with hook and loop fasteners.

#### r. **Survival Vests**

(1) **SV-2B Survival Vest** The SV-2B is designed for use by all aircrew members except when small arms protective body armor is worn. The vest provides storage for survival equipment while maintaining minimum bulk and weight. Additionally, the vest provides for integration of a life preserver and chest-mounted oxygen regulator. It does not interfere with use of either the regular or integrated-type parachute harness.

The SV-2B is constructed basically of nylon cloth. An adjustable harness, leg straps, and entrance side fastener provide the means of fitting and securing the vest to the aircrew member. Elastic straps at the rear allow for greater mobility. Pockets are provided for stowage of survival items. When

required, a chest-mounted oxygen regulator is located inside a pocket and secured to the vest.

(2) **CMU-24/P Survival Vest** The CMU-24/P is designed for use by all overland SAR and TH-57 Helicopter aircrew members. The vest provides storage for survival equipment necessary during overland missions. The CMU-24/P is constructed of nylon mesh fabric with woven nylon pockets. It has a separating slide fastener front closure and lacing located on the back for size adjustment.

s. **Torso Harness** The Torso Harness provides for the integration of the parachute harness, lap belt assembly, and shoulder restraint. The harness provides mobility while restraining the wearer to the seat during emergency conditions, and serves as a parachute harness during ejection. The torso harness consists of a nylon webbing harness. An adjustable shoulder restraint with quick-release fittings provides attachment of a parachute assembly.

## 2. **Physical Description** NA.

3. **Description of Introduction.** The various ALSS items have been introduced into the fleet over the past two decades as new production items. The following items are recent additions or will be added to the ALSS inventory in the near future.

a. **NCE.** The NCE is being introduced into the fleet through the supply system as production items. Introduction began fourth quarter FY96.

b. **Replacement Helicopter Helmet** The Replacement Helicopter Helmet was introduced into the fleet as a new production item in March 1994 with initial introduction of approximately 5000 units.

c. **Passenger Anti-Exposure Survival Suit** The Passenger Anti-Exposure Survival Suit was introduced first in December 1995 (450 units) through an Engineering Change Proposal (ECP) to modify a surplus stock of existing anti-exposure suits currently used by fighter pilots. These suits were modified by various AIMDs. New production suits will be introduced into the fleet through the supply system starting in August 1997 (approximately 1000 units) and continue with a second iteration starting in March 1998 (approximately 650 units).

d. **AN/PRC-112 Radio Set** The AN/PRC-112 Radio Set is an Army issue item that is now being employed in the Navy and Marine Corps. The initial outfitting has been completed.

e. **ALEPV.** The ALEPV is still in the development phase. It will be introduced into the fleet as a new production item in FY01 (estimated).

4. **Significant Interfaces and/or Impacts** Most ALSS provides the necessary interfaces between personnel and the aircraft as well as the environment under several scenarios as depicted in the functional description above.

## H. **NEW FEATURES, CONFIGURATION, OR MATERIAL.** NA.

## I. **CONCEPTS**

1. **Maintenance Concept** General direction and guidance regarding the maintenance of ALSS is provided by the Naval Aviation Maintenance Program (NAMP), OPNAVINST 4790.2F. The Aviation Crew Systems Manual, NAVAIR 13-1-6.1 through NAVAIR 13-1-6.10, provides specific guidance and technical information related to the configuration, application, function, inspection, and repair of aircrew safety and survival equipment. The information contained in each volume is intended for

organizational, intermediate, and depot levels of maintenance as prescribed by the NAMP.

The maintenance concept for ALSS is based on preventive and corrective maintenance including inspections, fittings, adjustments, repair, rework, and replacement of malfunctioning parts or clothing items while maximizing the use of the lowest level of maintenance. Refer to Table I-1 (page I-14) for maintenance levels, personnel, and specific Work Centers (W/C) for ALSS.

a. **Organizational Level** Organizational level maintenance of ALSS consists of preventive and corrective maintenance actions performed at the squadron level. Navy Aircrew Survival Equipmentmen (PR) and Marine Corps Flight Equipment Marines, Military Occupational Specialty (MOS) 6060, maintain the flight equipment including clothing, masks, helmets, regulators, flotation devices, survival equipment, and parachutes in W/C 13A, the Aircrew, Personal, Protective, Survival Equipment Shop. Aviation Structural Mechanics (Safety Equipment AMEs) and Marine Corps Aircraft Safety Equipment Mechanics with the aircraft appropriate Navy Enlisted Classification (NEC) or MOS maintain the ejection seats and oxygen systems in W/C 13B, the Egress and Environmental Systems Shop.

(1) **Preventive Maintenance (PM)**. PM of all ALSS is conducted at specific intervals in accordance with established procedures depicted in the Maintenance Requirements Cards (MRC) for each specific type of equipment. PM may consist of any of the following actions: inspections, adjustments, functional tests, scheduled removal and replacement, and lubrication as prescribed in the MRCs.

(2) **Corrective Maintenance (CM)**. CM of ALSS may consist of any of the following actions depending on the specific requirements to maintain the equipment: system testing, fault isolation, removal and repair or replacement of defective parts, and inspections. When appropriate, faulty Weapons Replaceable Assemblies are forwarded to the intermediate level for repair.

b. **Intermediate Level** Intermediate level maintenance of ALSS is performed at Navy Aircraft Intermediate Maintenance Departments (AIMD) by PR personnel and at Marine Aviation Logistics Squadrons (MALS) by Marine Corps personnel, MOS 6060. In the Aviators Life Support Systems Division, W/C 800, maintenance actions include functional tests and adjustments, fault isolation, and the removal and replacement of defective parts.

The emergency radios are tested and inspected by Navy Aviation Electronics Technicians (AT), NEC 6611, and Marine Corps Aircraft Communication Systems Technician, MOS 6412, in W/C 610, the Communications and Navigation Branch.

c. **Depot Level**. Depot level maintenance of specific ALSS equipment is performed at Naval Aviation Depots (NAVAVNDEPOT) or Contract Depot Repair Activities. Most ALSS does not require depot level maintenance. However, maintenance actions at this level consist of repairs, adjustments, calibration, and inspections.

Naval Surface Warfare Center Indian Head, Maryland, is responsible for all cartridges, Cartridge Actuated Devices (CAD), and Aircrew Escape Propulsion System (AEPS) devices, which are employed by ejection seat systems, that are reworkable.

Table I-1

Specific ALSS Maintenance Responsibilities

MAJOR ALSS GROUP	ORGANIZATIONAL			INTERMEDIATE			DEPOT
	RATING	MOS	W/C	RATING/NEC	MOS	W/C	
Anti-Exposure Clothes	PR	6060	13A	PR/0000	6060	81A	NA.
Anti-G Garments	PR	6060	13A	PR/0000	6060	81A	NA.
Aviators' Clothing	PR	6060	13A	PR/0000	6060	81A	NA.
Breathing Masks	PR	6060	13A	NA.	NA.		NA.
CBR Protective Clothes	PR	6060	13A	PR/0000	6060	81A	NA.
Ejection Seats	AME	6083 6085 6086 6087	13B	NA.	NA.		Designated NAVAVNDEPOT or contractor maintenance
Emergency Radios	PR	6060	13A	AT/6611	6412	610	Designated NAVAVNDEPOTs
Helmets	PR	6060	13A	NA.	NA.		NA.
Life Rafts	PR	6060	13A	PR/0000	6060	81B	NA.
Liquid Oxygen Converters	AME	6083 6085 6086 6087	13B	PR/7356	6060	81C	Designated NAVAVNDEPOTs
NCE	PR	6060	13A	PR/0000	6060	81A	NA.
Oxygen Regulators	PR	6060	13A	PR/7356	6060	81C	Designated NAVAVNDEPOTs
Parachutes	PR	6060	13A	PR/0000	6060	81A	NA.
Personal Flotation Devices	PR	6060	13A	PR/0000	6060	81B	NA.
Rescue Equipment	PR	6060	13A	PR/0000	6060	81A/ 81B	NA.
SAR Swimmers Personal Equipment	PR	6060	13A	PR/0000	6060	81A	NA
Seat Survival Kits	PR	6060	13A	PR/7356	6060	81C	NA
Survival Vests	PR	6060	13A	PR/0000	6060	81A	NA
Torso Harnesses	PR	6060	13A	PR/0000	6060	81A	NA

d. **Sources of Technical Assistance** With the introduction of new or modified equipment (including the NCE), the Fleet Air Introduction Liaison Survival

Aircrew Flight Equipment (FAILSAFE) team and the contractor will provide technical assistance when necessary. The FAILSAFE Program is intended to ensure proper fleet introduction of new or modified ALSS.

e. **Interim Maintenance** NA.

2. **Operational Concept** ALSS consists of specialized clothing and equipment that provide aircrew members with a physiologically safe environment, a means of escaping a disabled aircraft, and the capability to survive and interface with rescuers after escape.

3. **Manning Concept** No changes are necessary to current manpower requirements. ALSS operators are the aircrew members who wear the protective clothing and equipment and use the aircraft installed systems. Navy PR personnel and Marine Corps Flight Equipment Marines, MOS 6060, perform organizational and intermediate level maintenance on most ALSS. AME personnel, NEC 83XX, and Aircraft Safety Equipment Mechanics, MOSs 6083, 6085, 6086, and 6087 perform organizational level maintenance on ejection seats and oxygen systems installed on specific aircraft. Organizational and intermediate maintenance manpower is driven by the overall maintenance requirements at each activity and not by any particular ALSS item.

NEC 7356, Aircrew Survival Equipmentman Intermediate Level Maintenance Technician, has been established for PR personnel (E-4 through E-7) and is awarded upon successful completion of training track C-602-2040. PR-7356 personnel will perform tests, inspections, and repair of various oxygen systems, regulators, and test stands.

J. **LOGISTICS.** Due to the volume of items addressed in this NTP, it would be impractical to provide the logistics requirements for each specific item. Since most of the ALSS has been in service for a considerable number of years, many of the items now have more than one manufacturer. Integrated Logistic Support Plans (ILSP) are not required for all ALSS. For those ALSS that require one, the ILSPs are maintained by the Aircrew Systems Program Office, PMA202. Technical manuals for ALSS are under the cognizance of the Naval Air Technical Services Facility (NATSF). Additional information may be obtained from PMA202. For recent ALSS additions, logistics information is listed below. As new ALSS is developed, specific logistics information on these systems will be addressed in updates to this NTP.

1. **Manufacturers**

- a. **NCE. Regulator:**..... Carleton Technology  
10 Cobhan Dr  
Orchard Park, NY. 14217-4159  
**All other components:**..... Gentex Corporation
- b. **Replacement Helicopter Helmet ....** Gentex Corporation  
P.O. Box 315  
Carbondale, PA. 18407
- c. **Passenger Anti-Exposure Survival Suit** A contract for the new Passenger Anti-Exposure Survival Suits is expected to be awarded in March 1998.
- d. **AN/PRC-112 Radio Set .....** Motorola, Inc.  
Government and Systems Technology  
8201 E. McDowell Rd. P.O. Box 1417  
Scottsdale, AZ. 85252-1417
- e. **ALEPV.** Holographic Optics, Inc. and Aotec, Inc.  
358 Sawmill River Rd. 14 Manchnic St.  
Millwood, NY. 10546 Southridge, Mass. 01550

2. **Contract Numbers:**

NCE .....	N62269-93-C-0206
Replacement Helicopter Helmet.....	N62269-92-C-0205
Passenger Anti-Exposure Survival Suit.....	See note below
AN/PRC-112 Survival Beacon.....	F33657-83-C-0122-00014
ALEPV .....	N62269-89-R-0215, N62269-91-C-0254

**Note:** The Passenger Anti-Exposure Survival Suit will be produced under two separate contracts. The first contract will result in a 1000 suit production starting in August 1997. The second contract will result in a 650 suit production starting in March 1998.

3. **Integrated Logistic Support Plans (ILSPs)**

a. **NCE.** The ILSP for the NCE, AS-ILSP-425, was developed by NAWCAD Warminster, PA, in August 1994, and updated September 1995.

b. **Replacement Helicopter Helmet NA.**

c. **Passenger Anti-Exposure Survival Suit, CWU-79/P** The ILSP for the CWU-79/P, AS-ILSP-423, was approved in August 1994.

d. **AN/PRC-112 Survival Beacon** An Army ILSP is available for the AN/PRC-112, numbered 3673-4007-03, 18 December 1987.

e. **ALEPV.** A draft ILSP for the ALEPV was developed in December 1994. A number has not yet been assigned to this ILSP.

4. **Technical Data Plan** NATSF maintains, updates, and publishes the Aviation Crew Systems Manual, NAVAIR 13-1-6 (series), Naval Air Training and Operating Procedures Standardization (NATOPS) manuals, and aircraft maintenance manuals. These manuals are available to fleet units through normal channels.

5. **Special Tools, Special Test Equipment, and General Purpose Test Equipment.** Existing support equipment will be used to support new ALSS.

6. **Spare and Repair Parts** All ALSS currently employed in the fleet have been established in the supply system. Unless otherwise stated, all ALSS have achieved Material Support Dates (MSDs). The Naval Aviation Inventory Control Point (NAVICP), located in Philadelphia, Pennsylvania, has been designated as the Primary Inventory Control Point for Navy assets. All components of the SAR swimmer's personal equipment are procured from commercial sources. The MSD for the Passenger Anti-Exposure Survival Suit will be achieved upon final delivery of the new production units. (MSD for the Passenger Anti-Exposure Survival Suit cannot be determined until the contract is awarded.) An MSD for the NCE has not yet been established.

7. **Contractor Engineering Technical Services (CETS).NA.**

K. **SCHEDULES**

1. **Schedule of Events**

a. **Delivery Schedule** As new ALSS items are developed, schedule information will be available from the Aircrew Systems Program Office, PMA202, and will be included in future updates to this NTP. Refer to the NACES and OEWSPs for their respective delivery or installation schedule.

(1) **NCE.** There will be no deliveries scheduled for squadron employment. The NCE is being purchased through a supply system contract. NAVICP will make the NCE available to squadrons through normal supply channels.

(2) **Replacement Helicopter Helmet** A total of 8300 replacement helicopter helmets have been delivered to the Navy, and Marines/Coast Guard. Delivery was completed in June 1995.

(3) **Passenger Anti-Exposure Survival Suit.** The first 1450 units will be modified through an approved ECP. AIMDs and MALS began modification of 450 suits in December 1995. NAVICP contracted services began modification of another 1000 suits in July 1996. Delivery of 250 new production suits is estimated to begin in the fourth quarter FY97.

(4) **AN/PRC-112 Survival Beacon** The initial delivery of the AN/PRC-112 has been completed. The AN/PRC-112 survival beacon is procured through the Army by the NAVICP.

(5) **ALEPV.** The ALEPV will reach Initial Operational Capability in FY01. No schedule has been developed.

b. **Ready For Operational Use** All ALSS is ready for operational use upon delivery or completion of installation, as appropriate.

c. **FMS and Other Source Delivery Schedule** Schedule information concerning FMS and other procurements may be obtained by contacting PMA202.

d. **Training Device and Technical Training Equipment (TTE) Delivery Schedule.** ALSS is used as TTE, both directly and indirectly, at Aviation Survival Training Centers (ASTC) and Fleet Readiness Squadron (FRSs) in all aspects of aircrew training. Naval Air Technical Training Center (NATTC) Pensacola, Florida, employs ALSS as TTE in PR and MOS 6060 training courses. At Maintenance Training Units (MTU) and Fleet Replacement Enlisted Skills Training (FREST) departments, ALSS is used to train AME personnel, NEC 83XX, and Aircraft Safety Equipment Mechanics, MOS 6087. As new ALSS enters fleet service, these systems will be delivered to the appropriate training activities for use as TTE.

2. **Time Required To Install** NA.

#### L. **MANPOWER REQUIREMENTS**

1. **Equipment, Systems, and Subsystems** NA.

2. **Aircraft Equipment, Systems, and Subsystems**

a. **Aircrew Requirements** NA.

b. **Estimated Direct Maintenance Man-Hours per Flight Hour (DMMH/FH).** Maintenance man-hour information for each specific ALSS may be obtained from the Aircrew Systems Program Office, PMA202.

c. **Proposed Utilization** ALSS is utilized by all USN and USMC aircraft.

d. **Recommended Manpower Requirements** Aircrew and maintenance manpower requirements for each squadron or activity are based on the total workload for the particular aircraft supported. No single ALSS drives billet requirements. There are no changes to aircrew or maintenance manpower needed to support the new ALSS entering the fleet, this is due to current manning. Refer to the specific squadron and activity manpower documents or Tables of Organization for information on billet requirements.

NEC 7356, Aircrew Survival Equipmentman Intermediate Level Maintenance Technician, has been established for PR personnel (E-4 through E-7) and is awarded upon successful completion of the newly established training track C-602-2040. PR-7356 personnel will perform tests, inspections, and repair of various oxygen systems, regulators, and test stands.

**M. TRAINING CONCEPT**

1. **Training Applicable to Military, Civilian, and Foreign Personnel** Initial operator and maintenance training for all ALSS currently employed has been completed. Initial training for new ALSS will either be conducted by the manufacturer or contractor or will be conducted by Navy personnel who will provide on-site indoctrination training to aircrew and maintenance personnel. Follow-on ALSS operator training is conducted as part of general and aircraft-specific aircrew training via aviation physiology, aviation water survival, and FRS training. ALSS organizational and intermediate level maintenance training for PR and MOS 6060 personnel is established at PR class A1 and C1 schools. Organizational level maintenance training for AME personnel, 83XX, and Aircraft Safety Equipment Mechanics, MOSs 6083, 6085, 6086, and 6087, is provided through aircraft-specific Naval Air Maintenance Training Group Detachment (NAMTRAGRU DET) courses conducted at MTUs and FREST departments. NACES intermediate level maintenance training for PR and Marine Corps personnel, as well as selected AME personnel, was established Ready For Training (RFT) in November 1995.

A new training concept for most aviation maintenance training has been established. This entails dividing A1 courses into two or more classes called core and strand, and C1 courses into initial and career training classes. Core classes will include general knowledge and skills training for the particular rating, while strand classes will 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 will immediately follow core training and is part of the A1 school. Upon completion of core and strand A1 schools, graduates will attend the appropriate initial C1 school for additional specific training. Initial training is intended for students with a paygrade of E-4 and below. Career training will be provided to personnel E-5 and above to enhance their skills and knowledge within their field.

One new intermediate level maintenance training track has been established to provide pipeline training to PR and MOS 6060 personnel. The training track has already been established and is designated Aircrew Survival Equipment Intermediate Maintenance, C-602-2040. It includes three courses:

- C-670-2018 Aviators Breathing Oxygen - ABO - Test Site Operator / Analyst
- C-602-2028 LOX Converter Test Stand / LOX Converter and SKU Repair
- C-602-2027 Oxygen Systems Components Test Stand / Oxygen Regulator Repair

focusing on specific areas of maintenance. The courses in this track were RFT in October 1995 and are conducted at NAS Pensacola, Florida. Organizational and intermediate maintenance courses for the OEAS and NACES are detailed in their separate NTPs. Both NTPs address this proposed training track to be established for the intermediate level courses on these two systems.

a. **Initial Training** When new ALSS is being introduced into the fleet, two basic methods of initial training may be employed. One method is for the contractor or manufacturer to provide initial training to instructor and fleet cadre personnel. This method of initial training was used for NACES and OEAS, which were completed in FY93 and FY91, respectively.

The more common method of providing ALSS initial training is for the FAILSAFE Team to visit each site, including other training activities, providing indoctrination training to aircrew and maintenance personnel. These FAILSAFE Teams receive their training either from the manufacturer or the development activity. The FAILSAFE Team for the NCE will receive their training from NAWCAD Patuxent River, MD, however, a schedule has not yet been determined.

Due to their similarity to other ALSS, the Replacement Helicopter Helmet, Passenger Anti-Exposure Survival Suit, and AN/PRC-112 Survival Beacon do not require initial training. Initial training requirements for the ALEPV have not been identified, but will be included in future updates to this NTP.

b. **Follow-On Training** ALSS follow-on training is provided to fleet personnel through several avenues. This includes formal courses conducted at a training facility and On-the-Job Training (OJT) conducted on-site by unit personnel.

(1) **Operator Training** ALSS operator training is an integral part of all aircrew training courses. Aircrew members receive training through Aviation Physiology Training , Aviation Water Survival Training, and the appropriate FRS.

(a) **Aviation Survival Training Center.** The ASTCs conduct several aviation physiology training courses to meet the various needs of the fleet. Each physiology training course provides some aspect of ALSS training as needed. This includes the proper ways of wearing, adjusting, and using the numerous garments, helmets, and masks; use of emergency and rescue equipment such as survival vests, radios, rafts, and parachutes; and procedures for employing an ejection seat. ALSS training is provided by theASTCs in the courses listed below in Table I-2.

Although every ASTC does not teach all of the courses listed, most are available at these sites. Refer to the Catalog of Navy Training Courses for specific course locations. ASTCs are under the command of the Naval Operational Medicine Institute and are currently located at:

MCAS Miramar	NAS Jacksonville	NAS Patuxent River
MCAS Cherry Point	NAS Barbers Point	NAS Brunswick
NAS Cecil Field	NAS Norfolk	Kadena Air Force Base
NAS Corpus Christi	NAS Whidbey Island	
NAS Lemoore	NAS Pensacola	

Table I-2  
**AVIATION SURVIVAL TRAINING CENTER COURSES**

<b>COURSE NO</b>	<b>COURSE TITLE</b>
B-322-0040	Refresher Aerospace Physiology Maritime Training
B-322-0041	Refresher Physiology Tactical Jet Training
B-322-0042	Refresher Aerospace Physiology Helicopter Training
B-322-0043	Basic Aerospace Physiology Indoctrination
B-322-0044	Indoctrination Aviation Physiology Training for Enlisted Aircrew
B-322-0045	Indoctrination Aviation Physiology Training for Selected Passengers
B-322-0046	Indoctrination Aviation Physiology Training for Project Specialists
B-322-0047	Indoctrination Aviation Physiology Training for Civilian Aircrew
B-322-0048	Indoctrination Aviation Physiology Training for Special Mission Personnel
B-322-0049	Indoctrination Aviation Physiology Training for Midshipmen
B-322-0050	Indoctrination Aviation Physiology Training for Military VIPs
B-322-0051	Indoctrination Aviation Physiology Training for Civilian VIPs
B-322-0052	Indoctrination Emergency Egress (Ejection Seat) Training
B-322-0053	Refresher Emergency Egress (Ejection Seat) Training
B-322-0054	Refresher Aviation Physiology Training for Project Specialists
B-322-0055	Refresher Aviation Physiology Training for Civilian Aircrew
B-322-0056	Refresher Aviation Physiology Training for Special Mission Personnel
B-322-0057	Refresher Aviation Physiology Training for Selected Passengers
B-322-0100	N9 Emergency Egress Training

(b) **Aviation Water Survival Training** The courses listed in Table I-3 provide ALSS training in much the same way as the aviation physiology training, but with the focus on survival in a water environment. Aviation Water Survival Training is conducted by the ASTC's listed above as well as the following locations:

NAS Santa Clara  
 NAS New Orleans  
 NAS Willow Grove





6. Course title ..... Aviators Breathing  
Oxygen (ABO) Test Site  
Operator-Analyst  
Course number ..... C-670-2018  
Course length ..... 5 days  
RFT date ..... On-line  
Training location ..... NATTC Pensacola  
Skill identifier ..... None  
Prerequisite training ... C-602-2040 or equivalent

As the NCE is introduced into the fleet, PR personnel and Marines, MOS 6060, will receive on-site maintenance training from FAILSAFE Teams.

(b) **Organizational Maintenance Training for AME Personnel, 83XX, and Aircraft Safety Equipment Mechanics, MOSs 6083, 6085, 6086, and 6087.** ALSS organizational maintenance training for AME and MOSs 6083, 6085, 6086, and 6087 personnel is conducted for the specific aircraft. These courses include training on the ejection seat and oxygen system for the particular aircraft. For current organizational maintenance course information for AMEs and Marines as well as annual training input requirements, refer to the aircraft NTP.

(c) **Intermediate Maintenance Training for PR Personnel, and Aircraft Safety Equipment Mechanics, and MOS 6060** Intermediate maintenance training on the NACES was RFT in July 1996 for PRs at MTUs 1038 and 1039. Refer to the NACES NTP for additional information including annual training input requirements.

(3) **Team.** NA.

(4) **Officer.** See Operator training above.

(5) **Industrial Personnel** NA.

2. **New Training Pipelines or Tracks** A new training track has been established, Aircrew Survival Equipment Intermediate Maintenance, C-602-2040, for the award of NEC 7356 to PR personnel in paygrades E-5 to E-7 or career designated E-4 personnel. This training track was RFT in October 1995 and includes the Aviators Breathing Oxygen (ABO) Test Site Operator and Analyst, C-670-2018, LOX Converter Test Stand and LOX Converter and SKU Repair, C-602-2028, and Oxygen Systems components Test Stand and Oxygen Regulator Repair, C-602-2027, courses.

The proposed ALSS intermediate maintenance training track will be established primarily for PR and MOS 6060 personnel and is depicted in Figure I-1 (page I-14). The proposed ALSS Intermediate Maintenance training track was originally generated by the OEAS NTP and is also presented in the NACES NTP.

3. **Explosive Ordnance Disposal (EOD) Training** EOD courses A-431-0011 and A-431-0012 include general training in recognition, safety procedures, disarming, and removal of CADs and AEPS devices. EOD personnel will respond in cases of crash, fire, and partial or full ejection involving an aircraft equipped with an ejection seat.

4. **Selected Reserve (SELRES) Training** Currently, NATTC Pensacola, FL, has not programmed SELRES personnel for PR or ALSS training.

**N. ON-BOARD TRAINING**

1. **Proficiency or Other Training Organic to New Development** The Maintenance Training Improvement Program (MTIP) will be used to establish an effective and efficient training system that is responsive to fleet training requirements.

2. **Personnel Qualification Standards (PQS) Requirements** PQS has been developed for all aircrew personnel, as required.

3. **Maintenance Training Improvement Program (MTIP) Requirements** The MTIP is a training management tool that, through diagnostic testing, identifies individual training deficiencies at both the organizational and intermediate levels of maintenance. The MTIP will allow increased effectiveness in the application of training resources through identification of skill 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. Requirements for MTIP are being determined. Refer to Part VI - Actions and/or Decisions.

4. **Other On-Board Training** Marine Corps on-board training is based on the current series of MCO P4790.12, Individual Training Standards System/ Maintenance Training Management and Evaluation Program (ITSS/MATMEP). This program is designed to meet Marine as well as OPNAVINST 4790.2F maintenance training requirements. It is a performance-based, standardized, level progressive, documentable, training management and evaluation program. It identifies and prioritizes task inventories by MOS through a front-end analysis process that identifies task, skill, and knowledge requirements of each MOS. MTIP questions coupled to MATMEP tasks help identify training deficiencies that can be addressed with remedial training.

O. **LIST OF RELATED NAVY TRAINING PLANS AND APPLICABLE DOCUMENTS**

NTP/DOCUMENT TITLE	DOCUMENT/ NTP NUMBER	PDA CODE	STATUS
AH-1W Aircraft	A-50-8520D/A	PMA276	Approved Mar 96
AN/AVS-6(V) Aviators Night Vision Imaging System (ANVIS)	A-50-8214C/A	PMA261	Approved Nov 93
AV-8B Harrier Plus Weapon System	A-50-8210D/A	PMA257	Approved 18 Aug 93
Aviators Breathing Oxygen Surveillance System (ABOSS)	A-50-8608/A	PMA202	Approved 10 Jan 90
C-2A Reprocured Aircraft	A-50-8308B/P	PMA221	Proposed Oct 95
CATS-EYE Night Vision System (NVS)	A-50-9304/A	PMA202	Approved 19 Nov 93

<b>NTP/DOCUMENT TITLE</b>	<b>DOCUMENT/ NTP NUMBER</b>	<b>PDA CODE</b>	<b>STATUS</b>
CH-53E Helicopter	A-50-7604F/D	PMA261	Draft Sep 95
CH-53 Helicopter Night Vision System	A-50-9305/A	AIR-511	Approved 25 Jan 94
E-2C Aircraft	A-50-8716D/D	PMA231	Draft Aug 96
E-6A TACAMO Aircraft	A-50-8516D/D	PMA271	Draft 10 Nov 94
EA-6B Improved Capability Modification II (ICAP II) Aircraft, Block 89	A-50-7904C/A	PMA234	Approved Dec 96
EP-3E Aries II Aircraft	A-50-8605D/D	PMA290	Draft Feb 96
ES-3A Aircraft	A-50-8818C/P	PMA244	Proposed Feb 96
F-14A/B/D Aircraft	A-50-8511B/D	PMA241	Draft Dec 96
F/A-18C/D Aircraft Weapon System	A-50-7703F/A	PMA265	Approved 18 Jan 95
F/A-18E/F Aircraft Weapon System	A-50-9201A/P	PMA265	Proposed 21 Apr 95
H-46 Safety, Reliability, and Maintainability Mod	A-50-8315/A	PMA261	Approved 12 Jun 84
HH-60H Combat SAR/ SW Helicopter	A-50-8714B/A	PMA299	Approved 22 Dec 93
HH/UH-1N Aircraft	A-50-9404/A	PMA(F)225	Approved 13 Oct 94
KC-130T Aircraft	A-50-8423/A	PMA200	Approved 26 Jun 85
MH-53E Helicopter	A-50-8417C/P	PMA261	Proposed 17 Jan 96
Navy Undergraduate Jet Flight Training System, T45TS	A-50-8703B/D	PMA273	Draft 23 Feb 95
On-Board Oxygen Generating Generating System (OBOGS)	A-50-8603B/A	PMA202	Approved 2 Jun 94
P-3C Update III and ASUW Improvement Program	A-50-8112B/D	PMA290	Draft 9 Dec 94

DOCUMENT/ NTP/DOCUMENT TITLE	PDA TITLE	NTP NUMBER	CODE	STATUS
RH-53D Helicopter		A-50-8601B/A	PMA261	Approved Mar 92
S-3B Aircraft		A-50-8310C/A	PMA244	Approved Jul 95
SH-2G Helicopter		A-50-9303/A	PMA299	Approved 6 Jun 94
SH-60B LAMPS MKIII, Part B, Aircraft Subsystems		A-50-7702D/P	PMA299	Proposed 11 Oct 94
SH-60F Carrier Inner Zone ASW Helicopter		A-50-8508C/A	PMA299	Approved 6 Sep 94
SH-60R Multi-Purpose Helicopter		A-50-9403/P	PMA299	Proposed Jun 94
SH/UH-3H Helicopter Transition		A-50-8901/D	PMA225	Draft May 94
SJU-17(V) Navy Aircrew Common Ejection Seat (NACES)		A-50-8517B/A	PMA202	Approved 1 Mar 94
V-22A Aircraft		A-50-8412D/D	PMA275	Proposed May 96
VH-60 Executive Transport Helicopter		A-50-8612/A	PMA266	Approved 19 Feb 88
Navy Combat Edge ILSP		AS-ILSP-425		Approved Aug 94
Passenger Anti-Exposure Survival Suit ILSP		AS-ILSP-423		Approved Aug 94
AN/PRC-112 Survival Beacon ILSP		3673-4007-03		Approved Dec 87
ALEPV ILSP		TBD		Draft Dec 94

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the Aviation Life Support Systems and, therefore, are not included in Part II of this NTP:

II.A. BILLET REQUIREMENTS

- II.A.1.b. Military Billets per Fleet Operational Unit [Including Fleet Readiness Squadrons (FRS)] and/or Activities - New
- II.A.1.c. Total Number of Billets Required by Fleet Support Units and/or Activities - New
- II.A.1.d. Total Fleet and Fleet Support Billets for New System
- II.A.2.a. Fleet and Fleet Support Replacement - Phase Out Schedule
- II.A.2.b. Military Billets per Fleet Operational Unit [Including Fleet Readiness Squadrons (FRS)] and/or Activity - Old
- II.A.2.c. Total Number of Billets to be Replaced in Fleet Support Units and/or Activities - Old
- II.A.2.d. Total Fleet and Fleet Support Billets for Old/Replaced System
- II.A.3. Net Total Officer and Enlisted Fleet and Fleet Support Billet Requirements

II.B. PERSONNEL REQUIREMENTS

- II.B.1. Fleet and Fleet Support Adjusted Annual Training Input Requirements - Class "A" School Training
- II.B.3. Foreign, Other Service, and Non-Military Personnel Annual Training Input Requirements
- II.B.4. Reserve Personnel Mobilization Adjusted Annual Training Input Requirements
- II.B.5. ASTC Personal Training Input Requirements

II.A. BILLET REQUIREMENTS

II.A.1.a. Ready for Operational and Fleet Support Use - New Development Delivery Schedule

Date: 24 Aug 95  
Source: NAWCAD Warminster 3.1.1

<u>UNIT/ACTIVITY/SQUADRON/HULL NO./UIC</u>	<u>PFY</u>	<u>FY97</u>	<u>FY98</u>	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>
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Passenger Anti-Exposure Suit	1450	250				
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NCE The NCE will be delivered to NAVICP for distribution to the fleet through normal restocking procedures; therefore, no schedule will be developed.

ALEPV

No schedule has been developed.

II.A.4. Training Activities Staff (Instructor/Support) Billet Requirements

COURSE/TYPE OF TRAINING/CIN	SCHOOL/ LOCATION/UIC	USN/ USMC	CFY97		FY98		FY99		FY00		FY01		RANK/ RATE/ RATING	NOBC/ PNEC/ PMOS	SNEC/ SMOS
			OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL			
<u>INSTRUCTORS</u>															
Aircrew	NATTC	USN	1		0		0		0		0		PRCM	0000	9502
Survival	Pensacola/		1		0		0		0		0		PRCS	0000	9502
Equipmentman	39831		7		0		0		0		0		PRC	0000	9502
Common Core/			10		0		0		0		0		PR1	0000	9502
Class A1/			1		0		0		0		0		PR2	0000	9502
C-602-2035			2		0		0		0		0		PR3	0000	9502
and															
Aircrew		TOTALS:	22		0		0		0		0				
Survival															
Equipmentman															
Intermediate															
Level Strand/															
Class A1/															
C-602-2037															
and															
Aircrew															
Survival															
Equipment															
Intermediate															
Maintenance/															
C-602-2040															
and															
Advanced															
Sewing Machine															
Repair/															
C-602-2029															
<u>SUPPORT ... NA.</u>															

II.A.5. Chargeable Student Billet Requirements

<u>ACTIVITY/LOCATION/JIC</u>	<u>FY97</u>		<u>FY98</u>		<u>FY99</u>		<u>FY00</u>		<u>FY01</u>	
	<u>OFF</u>	<u>ENL</u>								
NATTC Pensacola/39831		54		54		54		54		54
MTU 1038/NAMTRAGRU DET Lemoore/66060		4		4		4		4		4
MTU 1039/NAMTRAGRU DET Oceana/66050		4		4		4		4		4
		—		—		—		—		—
TOTALS:		62		62		62		62		62

Note: In the first quarter of FY97, there were 14 chargeable billets at NATTC Millington prior to the move to NATTC Pensacola.

II.A.6. Net Annual Incremental and Cumulative Billet Increases/Decreases - USN

<u>Billet Base</u>		FY97	FY98	FY99	FY00	FY01
		+/- CUM	+/- CUM	+/- CUM	+/- CUM	+/- CUM
a.	<u>Officer ... NA</u>					
b.	Enlisted					
Fleet Billets	ACDU/TAR <u>2017*</u> SELRES _____	<u>-52/1926</u>	<u>-28/1898</u>	<u>-1/1897</u>	<u>+4/1901</u>	<u>_____/1901</u>
Fleet Support Billets	ACDU/TAR _____ SELRES _____	_____	_____	_____	_____	_____
Staff Billets (Instructor/ Support)	ACDU/TAR <u>22</u> SELRES _____	<u>0/22</u>	<u>0/22</u>	<u>0/22</u>	<u>0/22</u>	<u>0/22</u>
Chargeable Student Billets	ACDU/TAR <u>32</u>	<u>0/32</u>	<u>0/32</u>	<u>0/32</u>	<u>0/32</u>	<u>0/32</u>

NOTE: This information was provided by BUPERS based on current and projected billet requirements for PR personnel.

II.A.6. Net Annual Incremental and Cumulative Billet Increases/Decreases - USMC

<u>Billet Base</u>		FY97		FY98		FY99		FY00		FY01	
		+/-	CUM								
a.	<u>Officer</u> ... NA										
b.	Enlisted										
Fleet Billets	ACDU/FTS <u>730*</u> SMCR _____	<u>0/730</u>									
Fleet Support Billets	ACDU/FTS _____ SMCR _____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Staff Billets (Instructor/Support)	ACDU/FTS _____ SMCR _____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Chargeable Student Billets	ACDU/FTS <u>30</u>	<u>0/30</u>									

NOTE: This information was provided by CMC based on current billet requirements ~~MO~~ 6060.

II.B. PERSONNEL REQUIREMENTS

II.B.2. Fleet and Fleet Support Adjusted Annual Training Input Requirements - Skill Progression and Functional Training

COURSE/TYPE OF TRAINING	ACDU/TAR/ SELRES	DESIG/ RATING	PNEC/SNEC PMOS/SMOS	CIN	FY97		FY98		FY99		FY00		FY01	
					OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
Aircrew Survival	ACDU	PR	0000	C-602-2035	230		230		230		230		230	
Equipmentman	USMC		6060		193		193		193		193		193	
Common Core A1	TAR		0000		29		29		29		29		29	
Course Length:	3.0 weeks	Course Attrition Factor:	USN: 10%		Sea Tour Length:	36 months		Backout Factor:	0.06					
			USMC: 0%											
Aircrew Survival	ACDU	PR	0000	C-602-2037	80		80		80		80		80	
Equipmentman	USMC		6060		193		193		193		193		193	
Intermediate Level Strand A1														
Course Length:	4.6 weeks	Course Attrition Factor:	USN: 10%		Sea Tour Length:	36 months		Backout Factor:	0.09					
			USMC: 0%											
Aircrew Survival	ACDU	PR	7356	C-602-2040	40		40		40		40		40	
Equipment Int. Maint.														
Course Length:	8.2 weeks	Course Attrition Factor:	USN: 10%		Sea Tour Length:	36 months		Backout Factor:	0.16					
Advanced Sewing Machine Repair	ACDU	PR	0000	C-602-2029	20		20		20		20		20	
Course Length:	4.2 weeks	Course Attrition Factor:	USN: 10%		Sea Tour Length:	36 months		Backout Factor:	0.08					

NOTE: ATIR for PR courses was obtained from NATTC Millington.

II.B.5. Total Number of Instructor and Support Personnel Required for Training Activities

SCHOOL/ LOCATION/ UIC	REQUIRED ON BOARD		OFFICER COURSE		OPERATOR COURSE		MAINT COURSE		TEAM COURSE		SUPPORT PERSONNEL		ACDU/ TAR/ SELRES	RANK/ RATE/ RATING	NOBC/ PNEC/ PMOS	SNEC/ SMOS
	MO	YR	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL				
NATTC	On board									1			ACDU	PRCM	0000	9502
Pensacola/ 39831	On board									1			ACDU	PRCS	0000	9502
	On board									7			ACDU	PRC	0000	9502
	On board									10			ACDU	PR1	0000	9502
	On board									1			ACDU	PR2	0000	9502
	On board									2			ACDU	PR3	0000	9502

II.B.6. Total Annual Training Input Requirements to Attain and Sustain Fleet, Fleet Support, Non-Military, Foreign, Reserve, Instructor, and Support Requirements

COURSE/ TYPE OF TRAINING	SOURCE OF REQUIREMENT	ACDU/ TAR/ SELRES	PNEC/ PMOS	SNEC/ SMOS	FY97		FY98		FY99		FY00		FY01	
					OFF	ENL								
<u>MAINTENANCE</u>														
C-602-2035/ Aircrew Survival Equipmentman Common Core A1	Fleet and Fleet Support	ACDU USMC TAR	0000 6060 0000		230 193 29		230 193 29		230 193 29		230 193 29		230 193 29	
C-602-2037/ Aircrew Survival Equipmentman Intermediate Level Strand A1	Fleet and Fleet Support	ACDU USMC	0000 6060		80 193		80 193		80 193		80 193		80 193	
C-602-2040/ Aircrew Survival Equipment Int. Maint.	Fleet and Fleet Support	ACDU	7356		40		40		40		40		40	
C-602-2029/ Advanced Sewing Machine Repair	Fleet and Fleet Support	ACDU	0000		20		20		20		20		20	
				USN TOTALS:	399		399		399		399		399	
				USMC TOTALS:	386		386		386		386		386	

PART III - TRAINING REQUIREMENTS

III.A. TRAINING COURSE/TRAINING INPUT REQUIREMENTS

III.A.1. Initial Training

LOCATION/ UIC	COURSE/TYPE OF TRAINING	COURSE DEVELOPER/ COURSE INSTRUCTOR	DATE BEGIN	COURSE LENGTH	STUDENTS OFF ENL CIV	ACTIVITY DESTINATION
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Navy Combat Edge initial training for Navy FAILSAFE Team personnel has not yet been scheduled. This information will be included in future updates to this NTP. All other initial training required to support ALSS follow-on training has been completed.

III.A.2. Follow-On Training (Operation, Maintenance, Operation and Maintenance, Team and Prerequisite)

SCHOOL/ LOCATION/ UIC	COURSE/ TYPE OF TRAINING	DATE BEGIN	COURSE LENGTH	MAX. CLASS SIZE	ACDU/ TAR/ SELRES	FY97		FY98		FY99		FY00		FY01							
						OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL						
NATTC Pensacola/ 39831	Aircrew Survival Equipment- man Common Core A1/ C-602-2035	Jan 97	19 days	9	ACDU	452		452		452		452		452		TOT INPUT					
						230		230		230		230		230		N INPUT					
						207		207		207		207		207		N OUTPUT					
						11.4		11.4		11.4		11.4		11.4		N AOB					
						11.4		11.4		11.4		11.4		11.4		N CHGBLE					
								USMC		193		193		193		193		193		M INPUT	
										193		193		193		193		193		M OUTPUT	
										10.0		10.0		10.0		10.0		10.0		M AOB	
										10.0		10.0		10.0		10.0		10.0		M CHGBLE	
										TAR		29		29		29		29		29	N INPUT
												26		26		26		26		26	N OUTPUT
												1.4		1.4		1.4		1.4		1.4	N AOB
												1.4		1.4		1.4		1.4		1.4	N CHGBLE
						NATTC Pensacola/ 39831	Aircrew Survival Equipment- man Inter- mediate Level A1/ C-602-2037	Feb 97	31 days	9	ACDU	273		273		273		273		273	
80		80		80								80		80		N INPUT					
72		72		72								72		72		N OUTPUT					
6.5		6.5		6.5								6.5		6.5		N AOB					
6.5		6.5		6.5								6.5		6.5		N CHGBLE					
		USMC		193								193		193		193		193		M INPUT	
				193								193		193		193		193		M OUTPUT	
				16.4								16.4		16.4		16.4		16.4		M AOB	
				16.4								16.4		16.4		16.4		16.4		M CHGBLE	
NATTC Pensacola/ 39831	Aircrew Survival Equipment	Jan 97	57 days	9	ACDU							40		40		40		40		40	
						40		40		40		40		40		N INPUT					
						36		36		36		36		36		N OUTPUT					

III.A.2. Follow-On Training (Operation, Maintenance, Operation and Maintenance, Team and Prerequisite)

SCHOOL/ LOCATION/ UIC	COURSE/ TYPE OF TRAINING	DATE BEGIN	COURSE LENGTH	MAX. CLASS SIZE	ACDU/ TAR/ SELRES	FY97		FY98		FY99		FY00		FY01		
						OFF	ENL	OFF	ENLOFF	ENLOFF	ENLOFF	ENLOFF	ENL			
	Int. Maint./					5.9		5.9		5.9		5.9		5.9	N	AOB
	C-602-2040					5.9		5.9		5.9		5.9		5.9	N	CHGBLE

NOTE: In the 1<sup>st</sup> quarter of FY97, one-quarter of the Total Input actually attended training at NATTC Millington.

NATTC	Advanced	Jan 97	21	9	ACDU	20		20		20		20		20		TOT INPUT
Pensacola/ 39831	Sewing Machine Repair		days			20		20		20		20		20		N INPUT
	C-602-2029					18		18		18		18		18		N OUTPUT
						1.1		1.1		1.1		1.1		1.1		N AOB
						1.1		1.1		1.1		1.1		1.1		N CHGBLE
USN TOTAL AOB:						26.3		26.3		26.3		26.3		26.3		
USMC TOTAL AOB:						26.4		26.4		26.4		26.4		26.4		
USN TOTAL CHARGEABLE:						26.3		26.3		26.3		26.3		26.3		
USMC TOTAL CHARGEABLE:						26.4		26.4		26.4		26.4		26.4		

NOTE: In the 1<sup>st</sup> quarter of FY 97, one-quarter of the Total Input actually attended training at NATTC Millington.

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the Aviation Life Support Systems and, therefore, are not included in Part IV of this NTP:

IV.A. TRAINING HARDWARE REQUIREMENTS

IV.A.5. Training Devices

IV.B. INITIAL TRAINING REQUIREMENTS

IV.B.1. Training Services

IV.C. FACILITY SUPPORT REQUIREMENTS

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

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

IV.C.3. Facility Project Summary by Program

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

IV.A. TRAINING HARDWARE REQUIREMENTS

IV.A.1. Technical Training Equipment

COURSE/ TYPE OF TRAINING	SCHOOL/ LOCATION/ UICNUMBER	ITEM EQUIPMENT	SYSTEM REQUIRED	QUANTITY REQUIRED	DATE
Aircrew Survival Equipmentman Common Core A1/ C-602-2035	NATTC Pensacola/ 39831	001	Life Preserver, LPP-1/1A	0	On board
		002	Inflatable Raft, LRU-12/A	5	On board
		003	Survival Radio, AN/URT-33A	20	On board
and		004	Inflatable Raft, LR-1	16	On board
Aircrew Survival Equipmentman Intermediate Level Strand A1/ C-602-2037		005	Life Preserver, LRU-23A/P	16	On board
		006	Inflatable Raft, LRU-15/A	1	On board
		007	Complete NB8, Parachute Assembly	14	On board
		008	Complete NES-12, Parachute Assembly	11	On board
		009	Anti-G Garment, CSU-15/P	17	On board
		010	Survival Vest, SU-2B	20	On board
		011	Personnel Parachute	16	On board
		012	Radio Assembly, AN/PRC-90	3	On board
		013	Sewing Machine, 3530-00-171-1730	1	On board
		014	Oxygen System Components Test Stand	10	On board

IV.A.1. Technical Training Equipment (Continued)

<u>COURSE/ TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/ UIC</u>	<u>ITEM NUMBER</u>	<u>SYSTEM EQUIPMENT</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
		015	Miniature Oxygen, Regulator, CRU-7 <del>9</del>	15	On board
		016	Oxygen Regulator, MD-1	15	On board
Oxygen Systems Components Test Stand and Oxygen Regulator Repair/ C-602-2027	NATTC Pensacola/ 39831	017	Panel Mounted Bendix, Oxygen Regulator	15	On board
LOX Converter Test Stand and LOX Converter and SKU Repair/C-602-2028	NATTC Pensacola/ 39831	018	Liquid Oxygen Converter Test Stand, 59A-12D	10	On board
		019	Liquid Oxygen Converter, CGU-24/A	15	On board
		020	Seat Survival Kit, SKU-2	15	On board
Advanced Sewing Machine Repair/ C-602-2029	NATTC Pensacola/ 39831	021	Sewing Machine Table	11	On board
		022	Sewing Machine Head, 111W151	11	On board
		023	Sewing Machine Head, 111W155	11	On board
		024	Sewing Machine Head, 211W151	11	On board
		025	Sewing Machine Head, 31-15	12	On board
		026	Sewing Machine Head, 206RB-1	11	On board
		027	Sewing Machine Head, 7-33	11	On board
		028	Sewing Machine Head, 199R	11	On board

Technical Training Equipment (Continued)

<u>COURSE/ TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/ UIC</u>	<u>ITEM NUMBER</u>	<u>SYSTEM EQUIPMENT</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
		029	Liquid Oxygen Servicing Trailer, 3655-00-158-0657	1	On board
Aviator's Breathing Oxygen/ C-670-2018		031	Nicolet Oxygen Analyzer	3	On board

Additional TTE:

The ASTCs are equipped and maintain the various garments, flight clothing, helmets, breathing devices, rafts, life preservers, and parachutes necessary to conduct Aviation Physiology and Water Survival Training Courses. The ASTCs also have and maintain NACES static displays.

The appropriate MTUs and FRESTs are equipped and maintain NACES and OBOGS TTE as depicted in their NTPs, A-50-8517B/A and A-50-8603B/A, respectively.

IV.A.2. Test Equipment - General Purpose/Special Purpose/Special Tools

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>GENERAL PURPOSE</u>	<u>SPECIAL PURPOSE</u>	<u>SPECIAL TOOLS</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Aircrew Survival Equipmentman Common Core A1/ C-602-2035 and Aircrew Survival Equipmentman Intermediate Level Strand A1/ C-602-2037	NATTC Pensacola/ 39831			Check Valve 4220-01-081-0322	8	On board
				Scale Fan, AAA5121	2	On board
				Transfer Pump CO2	3	On board
					12	On board
		Barometer			1	On board
Oxygen Systems Components Test Stand and Oxygen Regulator Repair/ C-602-2027 and LOX Converter Test Stand and LOX Converter and SKU Repair/ C-602-2028	NATTC Pensacola/ 39831			Needle Valve	3	On board
				Vacuum Pump	1	On board
		Gage, Pressure 0 - 3000 PSI			1	On board
			Gage, MD-1		15	On board
			Gage, MD-2		10	On board
			Flower Assembly		15	On board
				Guide, Spring, 0.546	15	On board
				Guide, Spring, 0.562	15	On board
				Guide, Spring, 0.578	15	On board
				Guide, Spring, 0.593	15	On board
				Guide, Spring, 0.662	15	On board
				Guide, Spring, 0.682	15	On board
		Gage, Pressure 0-160 PSI			12	On board
				Guide Assy., 14840	20	On board
				Spacer, 14B65	20	On board
			Manometer D-293		1	On board

IV.A.2. Test Equipment - General Purpose/Special Purpose/Special Tools(Continued)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>GENERAL PURPOSE</u>	<u>SPECIAL PURPOSE</u>	<u>SPECIAL TOOLS</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Oxygen Systems Components Test Stand and Oxygen Regulator Repair/ C-602-2027 and LOX Converter Test Stand and LOX Converter and SKU Repair/ C-602-2028 (Continued)	NATTC Pensacola/ 39831 (Continued)			Brush Bore 7790452	4	On board
			Thickness Gage 1318426-7		12	On board
			Gage, Precision Precision, 0"-10"		2	On board
			Regulator, R-1		11	On board
		Gage, Low Pres- sure, 0-15 PSI			2	On board
			Gage, Differen- tial, F-122-2-W		2	On board
		Oxygen Gage 200 PSI			2	On board
				Torque Wrench TE6FUA	1	On board
		Gage, 813095-1			5	On board
		Gage Assy. KB-390-400			1	On board
			Simulator 62-A-116-D55		1	On board
			Piezometer 62-A-116-C48		5	On board
			Manometer JM80BA12A73A		1	On board
			Manometer JM20A12A7A		1	On board

IV.A.2. Test Equipment - General Purpose/Special Purpose/Special Tools(Continued)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>GENERAL PURPOSE</u>	<u>SPECIAL PURPOSE</u>	<u>SPECIAL TOOLS</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Oxygen Systems Components Test Stand and Oxygen Regulator Repair/ C-602-2027	NATTC Pensacola/ 39831 (Continued)		Flowmeter 1370-3T		2	On board
and LOX Converter Test Stand and LOX Converter and SKU Repair/ C-602-2028 (Continued)		Pressure Gage 0-3000 PSI			1	On board
		Pressure Gage 0-200 PSI			2	On board
		Pressure Gage 0-160 PSI			5	On board
			Altitude Indi- cator, 10,000- 40,000 ft.		1	On board
			Altitude Indi- cator, 30,000- 150,000 ft.		1	On board
				Pressure Guard 0 - 175 PSI	10	On board
				Regulator, Pres- sure, 0-80 PSI	2	On board
				Balance Wheel 240452	10	On board
				Tap Kit, Special STP-1	1	On board
			Manometer 12-26		2	On board

IV.A.2. Test Equipment - General Purpose/Special Purpose/Special Tools(Continued)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>GENERAL PURPOSE</u>	<u>SPECIAL PURPOSE</u>	<u>SPECIAL TOOLS</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
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Additional Test Equipment:

The appropriate MTUs and FRESTs are equipped with the test equipment needed to maintain NACES and OBOGSdepicted in their NTPs, A-50-8517B/A and A-50-8603B/A, respectively.

IV.A.3. Electronic Test Equipment - General Purpose/Special Purpose

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>GPETE</u>	<u>SPETE</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Aircrew Survival Equipmentman Common Core A1/ C-602-2035 and Aircrew Survival Equipmentman Intermediate Level Strand A1/ C-602-2037	NATTC Pensacola/ 39831	Multi-Meter Simpson 260		3	On board
			Tester 00-109-3420	2	On board
			Test Set 00-613-1110	1	On board
Oxygen Systems Components Test Stand and Oxygen Regulator Repair/ C-602-2027 and LOX Converter Test Stand and LOX Converter and SKU Repair/ C-602-2028	NATTC Pensacola/ 39831	Multi-Meter Simpson 260		4	On board

Additional Electronic Test Equipment:

The appropriate MTUs and FRESTs are equipped with the electronic test equipment needed to maintain NACES and OBOGS as depicted in their NTPs, A-50-8517B/A and A-50-8603B/A, respectively.

IV.A.4. Repair Parts for Technical Training Equipment

<u>COURSE/TYPE</u> <u>OF TRAINING</u>	<u>SCHOOL/</u> <u>LOCATION/UIC</u>	<u>TECHNICAL</u> <u>TRAINING</u> <u>EQUIPMENT</u>	<u>TYPE AND RANGE</u> <u>OF REPAIR PARTS</u>	<u>DATE</u> <u>REQ'D</u>
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NOTE: All repair parts for ALSS are established in the Navy inventory and are available through normal supply channels.

IV.B. INITIAL TRAINING REQUIREMENTS

IV.B.2. Curricula Materials

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>TYPE OF MATERIAL</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>	<u>STATUS</u>
Aircrew Survival	NATTC	Curriculum Outline	4	Oct 95	On board
Equipmentman	Pensacola/	Instructor Guide	4	Oct 95	On board
Common Core A1/ C-602-2035	39831	Student Guide	10	Oct 95	On board
Aircrew Survival	NATTC	Curriculum Outline	4	Oct 95	On board
Equipmentman	Pensacola/	Instructor Guide	4	Oct 95	On board
Intermediate Level Strand A1/ C-602-2037	39831	Student Guide	10	Oct 95	On board
Oxygen Systems	NATTC	Curriculum Outline	2	Oct 95	On board
Components Test Stand	Pensacola/	Instructor Guide	2	Oct 95	On board
and Oxygen Regulator Repair/ C-602-2027	39831	Student Guide	10	Oct 95	On board
LOX Converter Test	NATTC	Curriculum Outline	2	Oct 95	On board
Stand and LOX	Pensacola/	Instructor Guide	2	Oct 95	On board
Converter and SKU Repair/ C-602-2028	39831	Student Guide	10	Oct 95	On board
Advanced Sewing	NATTC	Curriculum Outline	2	Oct 95	On board
Machine Repair/ C-602-2029	Pensacola/ 39831	Instructor Guide	2	Oct 95	On board
		Student Guide	10	Oct 95	On board
Aviator's Breathing	NATTC	Curriculum Outline	2	Oct 95	On board
Oxygen/ C-670-2018	Pensacola/ 39831	Instructor Guide	2	Oct 95	On board
		Student Guide	10	Oct 95	On board

IV.B.3. Training Aids (Instructional Aids)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>ITEM/ TITLE</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Aircrew Survival Equipmentman Common Core A1/ C-602-2035	NATTC Pensacola/ 39831	Transparencies	2 sets	On board

and

Aircrew Survival  
Equipmentman  
Intermediate Level  
Strand A1/  
C-602-2037

Oxygen Systems Components Test Stand and Oxygen Regulator Repair/ C-602-2027	NATTC Pensacola/ 39831	Transparencies	2 sets	On board
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and

LOX Converter Test  
Stand and LOX  
Converter and SKU  
Repair/  
C-602-2028

IV.B.4. Technical Manuals

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>TECHNICAL MANUAL NUMBER AND TITLE</u>		<u>MEDIUM</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Aircrew Survival Equipment- man Common Core A1/ C-602-2035	NATTC Pensacola/ 39831	A6-215PC-MEB-000	Industrial Sewing Equipment Manual	Hard copy	1	On board
		NAVAIR 11-15-7	Pyrotechnic, Screening and Marking Devices	Hard copy	1	On board
		NAVAIR 11-100-1.1	Cartridges and Cartridge Actuated Devices	Hard copy	2	On board
Aircrew Survival Equipment- man Intermediate Level Strand A1/ C-602-2037		NAVAIR 13-1-6.1	Aviation Crew Systems - Inflatable Survival Equipment	Hard copy	2	On board
		NAVAIR 13-1-6.2	Aviation Crew Systems - Para- chutes	Hard copy	2	On board
		NAVAIR 13-1-6.2.1	Illustrated Parts Breakdown - Parachutes	Hard copy	2	On board
		NAVAIR 13-1-6.3-1/ NAVAIR 13-1-6.3-2	Aviation Crew Systems - Seat Survival Kits (Part 1 and 2)	Hard copy	2	On board
		NAVAIR 13-1-6.5	Aviation Crew Systems - Rescue and Survival Equipment	Hard copy	2	On board
		NAVAIR 13-1-6.7	Aviation Crew Systems - Per- sonal Protective Equipment	Hard copy	2	On board
		NAVAIR 13-1-6.8	Aviation Crew Systems - Equipment	Hard copy	2	On board
		NAVAIR 17-15BC-7	Radar Oxygen Hose Test Set	Hard copy	2	On board
		NAVEDTRA 10328	Aircrew Survival Equipment- man 3 and 2	Hard copy	2	On board



IV.B.4. Technical Manuals(con't)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>TECHNICAL MANUAL NUMBER AND TITLE</u>		<u>MEDIUM</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Aircrew Survival Equipment- man Common Core A1/ C-602-2035	NATTC Pensacola/ 39831	NAVSEA 0333-LT-016- 2000	Instruction Book Sewing Machine Model 31-15 Type C	Hard copy	10	On board
		NAVSHIPS 0991-166- 8010C02	Recharge Unit, Model SC-5 Operation and Service	Hard copy	10	On board
and		OPNAVINST 4790.2 (Series)Program	Naval Aviation Maintenance	Hard copy	1	On board
Aircrew Survival Equipment- man Intermediate Level Strand A1/ C-602-2037						
Oxygen Systems Components Test Stand and Oxygen Regulator Repair/ C-602-2027	NATTC Pensacola/ 39831	NAVAIR 00-25-DRT-1	Automatic Distribution Requirements List	Hard copy	1	On board
		NAVAIR 00-25-100	Naval Air Systems Command Technical Manual Program	Hard copy	2	On board
and		NAVAIR 00-35QH-2	NAVAIR Allowance List - Flight Operational Material for Air- craft Squadrons Navy and Marine Corps	Hard copy	1	On board
LOX Converter Test Stand and LOX Converter and SKU Repair/ C-602-2028		NAVAIR 00-35QH-2-4	NAVAIR Initial Outfitting List - Flight Operational Material and Airborne Opera- tional Equipment Replenishment Items/Spare Parts	Hard copy	1	On board
		NAVAIR 00-500A	Equipment Applicability List	Microfiche	3	On board
		NAVAIR 00-500AV	Avionics Charges Cross Reference	Microfiche	3	On board

IV.B.4. Technical Manuals(con't)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>TECHNICAL MANUAL NUMBER AND TITLE</u>	<u>MEDIUM</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
		NAVAIR 00-500B Aircraft Application List	Microfiche	3	On board
		NAVAIR 00-500C Directives Application List	Microfiche	3	On board

IV.B.4. Technical Manuals(con't)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>TECHNICAL MANUAL NUMBER AND TITLE</u>		<u>MEDIUM</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
Oxygen Systems Components Test Stand and Oxygen Regula- tor Repair/ C-602-2027 (Continued)	NATTC Pensacola/ 39831 (Continued)	NAVAIR 00-500M	Microfilm Cartridge Cross Reference	Microfiche	3	On board
		NAVAIR 00-500SE	Support Equipment Cross Reference	Microfiche	3	On board
		NAVAIR 13-1-6.3	Aviation-Crew Systems Seat Survival Kits	Hard copy	2	On board
and		NAVAIR 13-1-6.4	Aviation-Crew Systems Oxygen Equipment	Hard copy	2	On board
LOX Converter Test Stand and LOX Converter and SKU Repair/ C-602-2028 (Continued)		NAVAIR 13-1-6.8	Aviation-Crew Systems Equip- ment Work Unit Code Manual	Hard copy	2	On board
		NAVAIR 16-1-8	Aeronautical Support Equip- ment Index	Hard copy	2	On board
		NAVAIR 16-1-8.1	Aeronautical Support Equip- ment Work Unit Code Manual	Hard copy	2	On board
		NAVAIR 17-15BC-11	Handbook of Maintenance Instructions with Illustrated Parts Breakdown - Oxygen Sys- tem Components Test Stand	Hard copy	2	On board
		NAVAIR 17-15BC-20	Handbook of Maintenance Instructions with Illustrated Parts Breakdown - Liquid Oxygen Converter Test Stand	Hard copy	2	On board
		NAVAIR 17-600-39-6-1	Preoperational Checklist Oxy- gen System Components Test Stand Model 62A116E1	Hard copy	13	On board

IV.B.4. Technical Manuals(con't)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>TECHNICAL MANUAL NUMBER AND TITLE</u>	<u>MEDIUM</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>	
		NAVAIR 17-600-39-6-2	Periodic Maintenance Requirements Manual OTS 62A116E1	Hard copy	13	On board
		NAVAIR AG-332AO-GYD-000	Aviators Breathing Oxygen (ABO) Surveillance Program Laboratory Manual and Field Guide	Hard copy	13	On board
Oxygen Systems Components Test Stand and Oxygen Regulator Repair/C-602-2027 (Continued)	NATTC Pensacola/39831 (Continued)	NAVSUP 2002	Navy Stock List of Publications and Forms	Microfiche	1	On board
		NAVSUP 2320	Source, Maintenance, and Recoverability Code Change	Microfiche	1	On board
and		NAVSUP 4000	Introduction to Supply Catalogs and Related Publications	Hard copy	3	On board
LOX Converter Test Stand and LOX Converter and SKU Repair/C-602-2028 (Continued)		NAVSUP P-485	Afloat Supply Procedures	Hard copy	1	On board
		NAVAIRINST 5215.8 (Series)System	NAVAIR Technical Directive	Hard copy	1	On board
		NAVAIRINST 13650.1	NAVAIRSYSCOM Aircraft Maintenance Material Readiness List	Hard copy	1	On board
		NAVEDTRA 10077	Blueprint Reading and Sketching	Hard copy	1	On board
		OPNAVINST 3750.6 (Series)Procedures	Naval Aircraft Mishap Reporting	Hard copy	1	On board
		OPNAVINST 4790.2 (Series)Program	Naval Aviation Maintenance	Hard copy	1	On board
Advanced Sewing Machine Repair/C-602-2029	NATTC Pensacola/39831	TM-DGSC-3530-27(1)	Parts List and Service Manual for Consew Model 225 Sewing Machine	Hard copy	1	On board

IV.B.4. Technical Manuals(con't)

<u>COURSE/TYPE OF TRAINING</u>	<u>SCHOOL/ LOCATION/UIC</u>	<u>TECHNICAL MANUAL NUMBER AND TITLE</u>	<u>MEDIUM</u>	<u>QUANTITY REQUIRED</u>	<u>DATE REQUIRED</u>
		TM-DGSC-3530-94 Operating Instructions, Parts List, and Maintenance Instructions for Consew Model 30 and Singer Model 31-15 Sewing Machines	Hard copy	1	On board
		TM-DGSC-3530-104 Service Manual and Parts List for Consew Model 99R Sewing Machine	Hard copy	1	On board
		TM-SGSC-3530-109 Parts List and Service Manual for Consew Model 199R Sewing Machine	Hard copy	1	On board
Advanced Sewing Machine Repair/ C-602-2029 (Continued)	NATTC Pensacola/ 39831 (Continued)	Cal's Handbook of Industrial Sewing Equipment	Hard copy	1	On board

PART V - MAJOR MILESTONES

<u>COG CODE</u>	<u>MANNING AND TRAINING MILESTONES</u>	<u>DATE</u>	<u>REMARKS</u>
TSA.....	Commence Analysis of MP&T Requirements .....	Jun 89	Completed
CNO .....	Promulgate Draft NTP to ALCON for Review and Comment	Aug 91	Completed
ACNO (MP&T).....	Chair NTPC .....		As required
CNO .....	Promulgate Draft NTP to ALCON for Review and Comment	APR 96	Completed
TSA .....	ALSS Intermediate Maintenance Track RFT .....	JUL 96	Completed
TSA .....	Proposed NTP Submitted to OPNAV .....	APR 96	Completed
ACNO/DMSO Sponsor .....	NTP Update Conference .....		As required
PDA .....	NCE Fleet Introduction .....	3Q FY96	Completed
ACNO (MPT).....	Approve and Promulgate NTP .....	Jun 97	Completed
PDA .....	ALEPV Fleet introduction .....	FY01	

PART VI - ACTIONS AND/OR DECISIONS

VI.A.	<u>ACTION ITEM/ACTION REQUIRED</u>	<u>COMMAND ACTION</u>	<u>DUE DATE</u>	<u>STATUS</u>
1.	Determine MTIP Requirements	Type Commanders		Open

VI.B. DECISIONS

PART VII - POINTS OF CONTACT

<u>NAME</u>	<u>ORGANIZATION CODE</u>	<u>FUNCTION</u>	<u>LOCATION</u>	<u>TELEPHONE NUMBER (DSN/COMMERCIAL)</u>
CAPT P. Laszcz	N881C7	Head, Plans, Policy, and Fleet Maintenance Support	CNO	664/(703) 604-7755
CAPT F. Smith	N889H	Head, Aviation Technical Training Branch	CNO	664/(703) 604-7730
MSGT D. Anderson	N889H2A	Aviation Enlisted Maint. Training	CNO	664/(703) 604-7722
LCDR S. Galbraith	N880G4	ACNO/DMSO Program Sponsor	CNO	223/(703) 693-2937
LCDR D. Seipel	PERS-512E	Head, Aviation Manpower	BUPERS	224/(703) 614-5297
LT S. Blazewicz	PERS-512E1	Aviation Manpower Requirements, NTPs	BUPERS	223/(703) 614-5174
CAPT D. Johanson	NAOMI-06	Model Manager	NAOMI	922/(904) 922-2171
CDR O. W. Dickey	BUMED	Training Agent	BUMED	762/(202) 762-3457
LCOL M. Cooper	ASL-33	USMC Aircraft Maintenance Officer	CMC	224/(703) 614-1187
COL J. Hildreth	ASM-1	Branch Head, USMC Aviation Manpower and Support	CMC	224/(703) 614-1556
MAJ F. Simonds	C5325A	Total Force Structure Division	MCCDC	278/(703) 784-6241
LCDR Hawkins	N-721	Aviation NTP Manager	CINCLANTFLT	564/(804) 445-7853
LT C. Presley	N-323	Fleet Training and Readiness Coordinator	CINCPACFLT	474/(808) 474-6965
Mr E. Scheye	T252	Aviation NTP Manager	CNET	922/(904) 452-4853
CAPT S. Ashton	PMA202	Aircrew Systems Program Manager	NAVAIRSYSCOM	757/(301) 757-6991

PART VII - POINTS OF CONTACT (Continued)

<u>NAME</u>	<u>ORGANIZATION CODE</u>	<u>FUNCTION</u>	<u>LOCATION</u>	<u>TELEPHONE NUMBER (DSN/COMMERCIAL)</u>
LCDR S. Griffith	PMA202D	Integrated Program Team Leader for Life Support	NAVAIRSYSCOM	342/(303) 342-8426
AMHC C. Poirier	PMA2053A3	Training Systems Program Manager	NAVAIRSYSCOM	757/(301) 757-8141
Mr. S. Wormser	4.6.1.1	APML, Navy Combat Edge	NAWCAD Pax River	342/(301) 342-9240
Mr. D. Vatavuk	4.6.3.1	APML, Passenger Anti-Exposure Survival Suit	NAWCAD Pax River	342/(301) 342-9235
Mr. M. Oberneder	4.6.2.2	APML, Emergency Radios	NAWCAD Indianapolis	(317) 306-7362
AVCM K. Pohl	N2115	Technical Training Coordinator	NAMTRAGRU HQ	922/(904) 452-9708 ext. 228
PRCS O. Arciaga	107	PR A1 and C1 Schools Coordinator	NATTC Millington	822/(901) 874-5250
Mr. P. Polka	21-10	Technical Manuals	NATSF	442/(215) 697-5323
Ms. Yvonne McClure	5320F	Logistics Manager Specialist for CART, CADS, and AEPS	NSWC Indian Head	354/(301) 743-4536
AVCM J. Milo	N34	Director PQSDEVGRU	NETPDTC Pensacola	922/(904) 452-1035
Mr. P. Szczyglowski	3.4.1	Competency Manager	NAVAIRSYSCOM	757/(301) 757-9182
AVCM(AW) R. Lovern	3.4.1	NTSP Manager	NAVAIRSYSCOM	757/(301) 757-9183
ATCS(AW) S. Worthen	3.4.1	NTSP Coordinator	NAVAIRSYSCOM	757/(301) 757-9194
AEC(AW) B. Koep	3.4.1	Manpower and Training Analyst	NAVAIRSYSCOM	757/(301) 757-9196