CHAPTER 6
Production Divisions; Work Center Supervisor; Maintenance Training; and Training, Special Process Certification and Licensing

Table of Contents

CHAPTER 6
Production Divisions; Work Center Supervisor; Maintenance Training; and Training, Special Process Certification and Licensing

6.1 Production Divisions

6.1.1 O-Level Maintenance; Aircraft Division

a. The Aircraft Division performs applicable O-level maintenance functions relative to assigned branches, for example, Airframes, Power Plants, and Aviation Life Support Systems (ALSS) as directed by the Maintenance Officer (MO) and in conjunction with other production divisions.

b. The Aircraft Division shall supervise, coordinate, and complete scheduled maintenance and inspections using inspection crew supervisors and other permanently assigned personnel as designated by the MO. Additional personnel required to perform scheduled maintenance and inspections will be made available (as required) from other production divisions. In addition, the Aircraft Division shall:

(1) Advise Maintenance Control continuously on the status of work in progress.

(2) Verify cleanliness of hangar and assigned spaces.

(3) Nominate personnel for assignment as Collateral Duty Inspector (CDIs).

(4) Initiate material requests for required tasks.

(5) Maintain, and assume custody and accountability of, assigned tools and support equipment (SE).

(6) Interpret directives.

(7) Recommend changes in techniques to promote ground and flight safety and material readiness of aircraft.

(8) Carry out an active foreign object damage (FOD) Prevention Program.

(9) Initiate requests to Maintenance Control for unscheduled maintenance.

(10) Provide troubleshooters and aircrew, as required, and exercise technical supervision over such personnel.

(11) Expedite the accomplishment of assigned work through the continuous evaluation of methods and procedures, and incorporate new techniques as appropriate.

(12) Carry out an active Corrosion Prevention and Control Program.

6.1.1.1 Power Plants Branch

6.1.1.1.1 Due to Reliability Centered Maintenance (RCM) Program philosophy, it is not usually necessary to overhaul gas turbine engines when they reach a predetermined maximum operating time.

a. Threshold sampling is an investigative procedure conducted on the high value, long lead time, and other critical parts for which little or no failure history is available. When the components or parts in this category suddenly fail, an unplanned, unbudgeted accelerated program must be implemented to correct the

deficiency. Threshold sampling is designed to bring visibility to the impending problems and thus eliminate them before the fact. Sampling is usually done in conjunction with engine rework and this process is defined as opportunity sampling. When this procedure cannot be done, forced removal is required for hardware condition at engine hour milestones. The In-Service Support Center (ISSC) publishes a list of threshold sampling candidates, quantities, and milestones for each engine. Milestones are updated as they are successfully passed.

b. Engines and engine accessories and components are removed and forwarded to the Intermediate Maintenance Activity (IMA) or Fleet Readiness Center (FRC) only when they require repair of failures or malfunctions, or for one of the following reasons:

(1) Fleet removals as a result of engine scheduled maintenance requirements.

(2) Program Manager AIR (PMA) requested removals as a result of engine performance deterioration.

NOTE: PMA requested engine removals and accessory and component teardown inspections must be coordinated with the cognizant Aircraft Controlling Custodian (ACC) or Type Commander (TYCOM).

(3) PMA requested or fleet removals as a result of time compliance requirements of Power Plant Change (PPCs).

(4) PMA requested or fleet removals as a result of threshold sampling when opportunity sampling will not provide the required data.

c. Since all gas turbine engines are required to have an aeronautical equipment service record (AESR) or configuration management (CM) auto log-set (ALS) AESR, it is important that any activity involved in the operation, maintenance, or transportation of gas turbine engines ensure the AESR or CM ALS AESR is maintained in proper order.

d. Aircraft engine and gearbox oil consumption awareness must be stressed to all personnel taking oil samples, servicing, and performing maintenance on each system. Discrepancies shall be documented on a maintenance action form (MAF) or work order (WO) and the Maintenance or Production Control Supervisor notified.

6.1.1.1.2 Screening procedures for non-ready for issue (NRFI) Engines. Engines that have been determined to require maintenance actions, for example, repairs, inspections, and time compliance changes, that are beyond the capability of O-level maintenance will be removed and delivered to the nearest supporting IMA or FRC via the supporting supply activity. The CM ALS AESR is transferred using CM. The AESR will accompany the engine along with the turn-in document. A copy of all MAFs or WOs generated as a result of the maintenance action will be forwarded to the ISSC for component tracking system for engines (CMIS) update.

a. All aircraft activities having custody of operating gas turbine engines requiring removal for work which is beyond their scope will have the engine delivered to the supporting IMA or FRC, via Supply, marked for examination and decision as to repair required. When a supporting first-, second-, or third-degree activity is unavailable locally, the engine is preserved and turned in to the supporting supply activity for shipment to the nearest authorized repair activity designated for the engine type being shipped.

b. When tracked components are moved between activities for any reason, applicable reports shall accompany the component.

c. In cases of engine failure(s) when an engineering investigation (EI) is required, shipment of the engine(s) to the D-level repair facility will be expedited. Engine(s) or accessories are not preserved if such action would destroy or conceal the evidence required by such inspection. In cases of this nature, proper AESR or CM ALS AESR entries must be made to indicate the reason for not preserving the engine. The procedures in paragraph 10.9 must be used when requesting an EI.

d. Accurate logbook records or CM ALS AESR must be maintained. The required number of scheduled removal component (SRC) cards, assembly service record (ASRs), equipment history record (EHRs), and module service record (MSRs) must be included with each engine AESR or CM ALS AESR. If an engine is removed, an entry must be made in the engine AESR or CM ALS AESR stating the reasons for removal. Hazardous material (HAZMAT), publications, substandard workmanship, and improper quality assurance (QA) procedures that require prompt attention and corrective action shall be reported per paragraph 10.9.

e. All engines or modules forwarded to other activities will have a full inventory of repairable and nonrepairable components and accessories and appropriate reports. NRFI components and accessories that are installed as a result of cannibalization will be clearly tagged and an entry made.

f. O-level activities shall provide to the supporting IMA or FRC any Power Plant Bulletin (PPB) or PPC parts or kits if kits were previously furnished but not incorporated.

6.1.1.1.3 Engine Inspection Procedures and Responsibilities:

a. Engine inspections shall be accomplished using applicable maintenance technical manuals upon expiration of the established interval.

b. Engine inspections may be performed independent of, or concurrent with, any airframe inspection. Unless otherwise directed by the periodic maintenance information card (PMIC), a plus or minus 10 percent deviation of the engine inspection interval is allowed for scheduling purposes.

6.1.1.2 Airframes Branch

The Airframes Work Center has responsibilities associated with the Hydraulic Contamination Control Program (paragraph 10.5), Tire and Wheel Maintenance Safety Program (paragraph 10.6), Corrosion Prevention and Control Program (paragraph 10.13), and other programs (as required).

6.1.1.3 Aviation Life Support Systems (ALSS)

6.1.1.3.1 The maintenance of ALSS is an integral part of maintaining aircraft. It is essential that the procedures and responsibilities are clearly understood and complied with to verify maximum safety and survivability as well as optimal aircraft readiness.

a. ALSS is defined as those items of equipment and clothing needed to allow aircrew members and aircraft passengers to:

(1) Function within all parameters of the flight environment.

(2) Safely egress from disabled aircraft as well as descend or ascend to the surface.

(3) Survive on land or water and interface with rescue forces.

NOTE: Navy and Marine Corps units that operate unmanned aircraft systems (UAS) Groups 3 through 5 are exempt from the ALSS Program. Navy and Marine Corps units that operate UAS along with manned aircraft, only UAS are exempt from the ALSS Program.

b. ALSS include such items as escape systems, environmental systems, fire extinguishing systems, aircrew clothing, survival kits, personnel parachutes and the associated hardware, life rafts and preservers, anti-exposure suits, survival radios and other emergency signaling equipment, flight helmets, oxygen equipment, anti-G suits and associated hardware, and other miscellaneous survival and life support items.

c. Maintenance Control will schedule and control the entire maintenance effort of the egress and environmental systems and the Aircrew Survival Equipment Work Center for scheduled and unscheduled personal equipment maintenance, as well as any nonaeronautical work.

6.1.1.3.2 ALSS Pools. Rotatable pools of ALSS spare assemblies (parachutes, life rafts, seat survival kit (SSKs), life preservers, survival radios, and miniature regulators) shall be established by IMAs ashore. The spare ALSS assemblies are owned by the station or Marine Aviation Logistics Squadron (MALS) Aviation Supply Officer; inventoried, maintained, and stored by the local IMA or FRC. This material will be maintained in a rotatable ALSS pool located in the IMA 800 Division. O-level activities are not authorized to requisition or stock ALSS assemblies or parts beyond those to outfit 100 percent of assigned aircraft and aircrew.

a. When the deployment site does not have an ALSS pool, the supporting shore-based IMA or FRC is responsible for providing ready for issue material (RFI) assemblies equal to 10 percent of those required for full outfitting of the deploying squadron or detachment to the deployed site.

b. Deployed shipboard IMAs will be responsible for providing all repair parts and components required to support the embarked squadrons' ALSS equipment.

c. Upon completion of deployment, the shipboard IMA is responsible for returning the same number of RFI assemblies originally provided by the supporting shore-based IMA or FRC. When the deployment site does not have an established IMA, the deployed site Supply Officer is responsible for returning all unused assemblies and adequate documentation on the used material to guarantee proper stock replacement, carcass tracking, and charges.

NOTE: Personal survival equipment, such as helmets, survival vests, gloves, flight suits, or items of squadron equipment which are not normally inducted into the IMA or FRC for maintenance, are not to be included in ALSS pools.

6.1.1.3.3 Safety. ALSS, by virtue of their unique function and responsibility, present inherently hazardous situations when approached improperly. Included in the overall concept of division and work center safety programs are several areas peculiar to ALSS. Emphasis must be placed on these areas at all command levels with the support from each person that may come in contact with them. Division chief petty officers or Non-Commissioned Officer in Charge (NCOICs), leading petty officers or Non-Commissioned Officer (NCOs), and Work Center Supervisors, must recognize the responsibility incumbent upon the safety petty officers or NCOs and assist when required in correcting these hazardous situations. Safety petty officers or NCOs must be guided by a strict sense of responsibility and remain alert to any possibility of an unsafe situation before it develops. Hazardous areas peculiar to ALSS include but are not limited to the following:

a. Liquid oxygen (LOX) handling and servicing.

b. LOX converter systems.

c. Gaseous oxygen handling and servicing.

d. Gaseous oxygen and nitrogen systems.

e. Test stands and SE using low and high-pressure gases.

f. Cartridges and cartridge actuated device (CADs), such as installed and uninstalled parachute automatic actuators, ballistic spreading guns, ejection seats and components, canopy systems, and components containing explosive devices.

NOTES: 1. The description, preparation for use, and handling instructions for rocket catapults and rocket motors for ALSS are in NAVAIR 11-100-1.1-CD.

2. Information concerning cartridges and CADs for aircraft and associated equipment is in NAVAIR 11-100-1.1-CD.

3. A notice of ammunition reclassification (NAR) is not an authorized medium for directing or authorizing the removal or replacement of aircraft or ALSS installed cartridges, pyrotechnics, CADs, or propellant actuated device (PADs). The technical directive (TD) system was established for that purpose. If, within 3 days of receipt of a NAR (affecting the equipment described above), a TD has not been received, the reporting custodian will request assistance from the ACC or TYCOM who in turn will request status from COMNAVAIRSYSCOM.

6.1.1.3.4 Cannibalization of egress system components must be held to an absolute minimum. Proper functioning of egress systems is critical and the interchanging of egress system components increases the possibility of maintenance error and exposes maintenance personnel to unnecessary, unscheduled maintenance on hazardous material.

a. Personnel parachutes and survival kits require stringent management to verify aircraft or systems components and special inspection compatibility. Returning cannibalized components to the original aircraft will increase aircraft readiness, decrease the possibility of logbook record error, and verify aircraft, system, and special inspection compatibility is maintained. Returning egress system components to the original aircraft or egress system must be documented on a MAF or WO.

b. Egress system related cartridges/CADs/PADs will not be cannibalized without prior cognizant Type Wing (ashore) or Carrier Air Type Wing (CVW) (afloat) approval.

c. Some egress systems require special adjustments when ejection seats are installed in a different aircraft and damage may result from excessive handling or repeated removal and installation. Ejection seat rework is tied to aircraft rework, therefore, cannibalization of seats could cause a seat to serve more than one tour without being reworked. For these reasons, ejection seats will not be cannibalized without prior approval by the cognizant Type Wing (ashore) or CVW (afloat).

6.1.1.3.5 Documentation. Standardized aviation maintenance and material management (3M) documentation throughout the Navy and Marine Corps will increase the accuracy of maintenance data reporting; thereby, producing a higher percentage of reliable maintenance data. The importance of accurate documentation cannot be overemphasized.

NOTES: 1. OMA NALCOMIS Optimized squadrons shall have one Aviation Maintenance Administrationman (AZ), one Aircrew Survival Equipmentman (PR), and one Aviation Structural Mechanic Egress (AME) (if applicable) complete the ALSS Configuration Management course (C-555-0056).

2. OMA NALCOMIS Optimized squadrons that operate from a detachment based concept for 90 days or longer periods of time shall have one AZ and one PR complete the ALSS Configuration Management course (C-555-0056) prior to detachment.

a. Provisions have been made to identify individual aircrew member's equipment through the complete special inspection.

b. An example of proper documentation for conducting a special inspection on personal survival equipment follows:

Block A22. Enter the work unit code (WUC) for a special inspection, for example, 030000G.

Block A52. Enter the aircrew member identification number, for example, GF9341.

Block A32. Enter Transaction Code 11, for on equipment work.

Block A35. Enter Action Taken Code 0.

c. An example of proper documentation for a discrepancy discovered during a special inspection of aircrew member's personal equipment follows:

Block A22. Enter the WUC for the survival vest, for example, 96A32.

Block A32. Enter Transaction Code 12 if failed parts are documented.

Block A52. Enter the aircrew member's identification number, for example, GF9341.

Block A58. Enter the discrepancy discovered during a special inspection, Code L.

6.1.1.3.6 Tool control within the ALSS Branch is unique. In addition to policy set forth in paragraph 10.12.1 all tools must be accounted for after the repack and inspection of each item, for example, parachutes and flotation equipment. These items cannot be functionally checked prior to use.

6.1.1.3.7 Maintenance will be conducted using the applicable technical manuals.

6.1.1.3.8 PR qualification. A qualified PR is defined as a graduate of the Navy PR "A" School.

6.1.1.3.9 AME qualification. A qualified AME is defined as a graduate of the Navy AME "A" School and Center for Naval Aviation Technical Training Unit (CNATTU) for specific T/M/S egress systems.

NOTE: AME personnel who have completed the CNATTU course for the F/A-18E/F aircraft SJU-17 Navy Aircrew Common Ejection Seat (NACES) are also qualified to perform work on SJU-17 NACES installed in F/A-18A-D and E/A-18G aircraft. Completion of the CNATTU F/A-18E/F SJU-17 NACES course does not qualify personnel to perform work on any other model of ejection seat installed in the F/A-18A-D.

6.1.1.3.10 Explosives handling qualification. PRs and AMEs must be qualified and certified under the Explosive Handling Personnel Qualification and Certification Program.

6.1.1.3.11 O-level activities with only one or no PR assigned shall designate in writing a properly cross trained QAR or CDQAR to inspect work performed on ALSS equipment maintained by the ALSS work center. Cross trained QARs or CDQARs shall use NAVAIR 13-1-6 series manuals for technical guidance. Personnel performing ALSS equipment maintenance and QARs or CDQARs inspecting work performed shall be ordnance certified per OPNAVINST 8023.24/MCO 8023.3.

6.1.1.3.12 Activities consistently operating under the detachment concept with no PR billet authorized for the detachment shall designate one additional cross trained person to perform O-level maintenance on assigned ALSS equipment. Training shall be provided by a senior (E-5 or above) PR assigned to the parent squadron or the supporting IMA/FRC and shall be limited in scope and content. The parent Maintenance Officer (MO) shall sign a designation letter specifically identifying the T/M/S aircraft or equipment involved and specific functions authorized.

NOTE: Use of personnel not qualified, certified to perform maintenance on egress systems is NOT AUTHORIZED.

6.1.1.3.13 Contract maintenance. O-level activities supported by contract maintenance shall use only qualified, certified civilian personnel to perform O-level maintenance on ALSS or egress system maintenance.

a. For Work Center 13A, only personnel who are graduates of Navy PR or equivalent Air Force or Army military occupational specialty (MOS) course shall be allowed to perform ALSS system maintenance.

b. For Work Center 13B, only personnel who are graduates of Navy AME "A" School and CNATTU for specific T/M/S or T/M/S factory equivalent training course shall be allowed to perform egress system maintenance.

c. In addition to paragraphs 6.1.1.3.14.a and 6.1.1.3.14.b above, for contract maintenance personnel to be designated as a QA Inspector on ALSS or egress equipment, a documented working history with ALSS or egress equipment is required (as applicable to work performed).

6.1.1.3.14 Inspection Requirements

a. Acceptance and post D-level inspections are performed at the time a reporting custodian accepts a newly assigned aircraft or aircrew personnel mounted equipment, from any source, including return of an aircraft from off-site D-level facility. It includes an inventory of all equipment listed in the aircraft inventory record (AIR), verification of CADs and PADs, and configuration verification. For acceptance inspection purposes, verification of CADs, PADs, and configuration is accomplished by visual external inspection and record examination only. Disassembly beyond the daily inspection requirements of applicable PMS publications is not required. Activities may elect to increase the depth of inspection if equipment condition, visual external inspection, or record examination indicates such action is warranted. On acceptance of an aircraft and ALSS equipment, review the Virtual Fleet Support (VFS) CADPAD, Traceability (TRACE) CADPAD and TRACE Life Support Modules data for accuracy.

b. Transfer/pre-D-level inspections are performed at the time a reporting custodian transfers an aircraft or aircrew personnel mounted equipment, including delivery to an off-site facility. It includes an inventory of all equipment listed in the AIR, verification of CADs and PADs, and configuration verification. For transfer inspection purposes, verification of CADs, PADs, and configuration is accomplished by visual external inspection and record examination only. Disassembly beyond the daily inspection requirements of applicable PMS publications is not required. Verify flight hours are correct on the Monthly Flight Summary (OPNAV 4790/21A) or CM ALS Flight Summary by checking the Period and Since New blocks. In addition, verify operating hours on the Equipment Operating Record (OPNAV 4790/31A) or CM ALS Equipment Operating Record by checking the ACCUM block. Activities may elect to increase the depth of inspection if equipment condition, visual external inspection, or record examination indicates such action is warranted. On transfer of an aircraft and ALSS equipment, electronically transfer custody of aircraft and ALSS equipment to another command using the VFS CADPAD, TRACE CADPAD and TRACE LIFE SUPPORT MODULE.

c. Inspections will be conducted as specified by the applicable technical manuals.

6.1.1.3.15 Records and Cards

a. The following records are designed to document ALSS components:

(1) The Parachute Record (OPNAV 4790/101) is designed to provide the current configuration and inspection record of a parachute assembly and its components. The record is a single copy, single-sided VFS CADPAD, TRACE LIFE SUPPORT MODULE generated form. The record is designed to be filed in the aircraft logbook or the ejection seat AESR where the parachute system is installed.

(2) The Seat Survival Kit Record (OPNAV 4790/137) is designed to provide configuration and inspection information for an SSK and its components. The record is a single copy, single-sided VFS CADPAD, TRACE LIFE SUPPORT MODULE generated form. The record is designed to be filed in the aircraft logbook or the ejection seat AESR in which the SSK is installed.

(3) The Aircrew Systems Record (OPNAV 4790/138) is designed to provide a continuous configuration and inspection record of ALSS components, kits, and assemblies. This record is a single copy, single-sided VFS CADPAD, TRACE LIFE SUPPORT MODULE generated form. Each item of ALSS requiring inspection at the I-level of maintenance shall have a separate Aircrew Systems Record. The record shall be filed in the logbook of the aircraft in which the ALSS component, kit, or assembly is installed. For personnel mounted equipment or other equipment which is not aircraft mounted, the record will be maintained as directed by the MO. For amplifying instructions for this record refer to Chapter 5 and NAVAIR 13-1-6 series manuals.

(4) The Aircrew Personal Equipment Record (OPNAV 4790/159) shall be initiated by the cognizant O-level activity upon the initial issue of personal equipment to the aircrew member. The record is a single copy, single sided VFS CADPAD TRACE LIFE SUPPORT MODULE generated form and provides the current configuration of all personal survival equipment issued to the aircrew member. Only items of ALSS requiring inspection at the O-level shall be documented on this record. The record shall be retained until new equipment can no longer be documented in allotted spaces. As an item is removed from service, it will be deleted from the record by drawing a single red line through all information pertaining to that item. Information pertaining to the removed item's replacement will be annotated in the next available line below. When the card is filled, a new record shall be initiated and all current data transcribed to the new record. Upon verification of data, the old record may be destroyed.

b. When any ALSS equipment has been involved in an aircraft mishap, the records shall be forwarded per OPNAVINST 3750.6 and NAVAIR 13-1-6 series manuals.

c. Record Retention. Each aircrew member must have a separate file containing all AESRs. Legacy NALCOMIS commands must refer to Chapter 5.

NOTE: All aircrew flight equipment records and files shall be maintained as directed by the MO.

(1) When an item of ALSS is due for inspection or maintenance, Maintenance Control will forward all of the item’s records, along with the WO, to the Aircrew Personal, Protective, and Survival Equipment Work Center.

(2) For record entry requirements for ALSS records refer to Chapter 5 and NAVAIR 13-1-6 series manuals.

6.1.1.3.16 Local Modification. Except as indicated in Chapter 3, no modification of ALSS is permitted.

6.1.1.3.17 Training. Follow-on formal training is available to the AME and PR through the appropriate C school. Training is also available through CNATT.

6.1.1.3.18 ISSCs. In-Service Engineering Logistics (ISEL) responsibilities for each component in an ALSS are assigned to an ISSC. ISSCs are equipped and staffed to offer technical assistance beyond the depth normally available at O-level or I-level maintenance and to provide ISEL data and services. ISSC members may be located at FRCs, NAVAIRWARCENWPNDIV, Naval Air Engineering Station, Naval Air Warfare Center Training Systems Division, Naval Weapons Station, Naval Weapons Center, or at other COMNAVAIRSYSCOM team locations.

6.1.1.4 Periodic Maintenance Branch

6.1.1.4.1 The Periodic Maintenance Branch (Work Center 140) conducts Preventive Maintenance (PM). PM ensures aeronautical equipment receives the necessary servicing, preventive maintenance, and inspections required. On induction of an aircraft into inspection, the inspection supervisor will perform all Maintenance Control functions, except cannibalization actions, which must be directed by Maintenance Control.

6.1.1.4.2 Successful operation of the phased maintenance program depends primarily on adequate preinduction preparation, effective use of maintenance requirements card (MRCs) and the sequence control card (SCCs), and upon the degree of control exercised by the supervisor. Resequencing of inspection tasks cannot be done without consideration of the effect on the overall inspection effort. Control of the inspection is the responsibility of the inspection supervisor. Scheduling and coordinating allows all requirements to be sequenced effectively to allow performance with minimum disruption of the scheduled inspection. The supervisor will indicate issued MRCs on the SCC. To ensure positive control of inspection progress, individual inspection crew members normally should not be issued MRCs at any one time with task totals in excess of 2 hours. Return of the accomplished MRCs to the supervisor shall also be noted. An explanatory note shall be entered on the SCC for each MRC that could not be completed. It is mandatory that all maintenance actions be cleared through the inspection supervisor. The discrepancy record for items discovered during the inspection must be prepared in cooperation with the supervisor to ensure the supervisor is aware of possible changes that may be required in the inspection sequence.

6.1.1.4.3 Personnel Manning Options. Local commands may select the manning arrangement addressed below which best fits local circumstances. Each has definite advantages and disadvantages which must be considered. For example, permanent crews may require productive work between inspections depending on inspection cycle length. Temporary crews lack the team continuity and efficiency associated with permanent crews. It is advantageous to establish a permanent crew when the inspection cycle length and the number of aircraft cause the inspection workload to be fairly constant. The work content of the scheduled inspections should be examined to determine the numbers and ratings of personnel required for the crew. For instances where only a small amount of work is programmed for a specific rating, consider drawing the required rating from the applicable shop on a temporary basis. If the anticipated length of time between inspections does not justify establishment of a permanent crew, a temporary crew concept should be used. Under this concept, a permanent inspection supervisor is assigned. As each inspection becomes due the supervisor assembles the necessary ratings from the appropriate shops for the duration of the inspection. Upon completion of the inspection, they return to their permanently assigned work center. The main tools used to accomplish effective inspections are the planned maintenance system (PMS) publications.

NOTE: Information concerning the various types of aircraft inspections performed by the Line Division or Periodic Maintenance Branch is listed in Chapter 5.

6.1.2 Organizational Maintenance; Avionics and Armament Division

6.1.2.1 The Avionics and Armament Division shall:

6.1.2.1.1 Assign personnel required to accomplish scheduled periodic and phased maintenance inspections of assigned aeronautical equipment.

6.1.2.1.2 As directed by the MO and in conjunction with the other production divisions, perform those applicable O-level maintenance functions outlined in Chapter 3 in the areas relative to assigned branches.

6.1.2.1.3 Advise Maintenance Control continuously on the status of work in progress.

6.1.2.1.4 Verify cleanliness of assigned spaces.

6.1.2.1.5 Maintain, and assume custody and accountability of, assigned tools and SE.

6.1.2.1.6 Initiate requests for material required for the accomplishment of assigned tasks.

6.1.2.1.7 Nominate qualified individuals for designation as Collateral Duty Inspector (CDIs).

6.1.2.1.8 Interpret directives.

6.1.2.1.9 Recommend changes in methods and techniques to promote maximum ground and flight safety and material readiness of aeronautical equipment.

6.1.2.1.10 Initiate requests to Maintenance Control for unscheduled maintenance.

6.1.2.1.11 Provide troubleshooters and aircrew, as required, and exercise technical supervision over such personnel.

6.1.2.1.12 Expedite the accomplishment of assigned work by continuous evaluation of methods and procedures and incorporate new techniques as appropriate.

6.1.2.1.13 Carry out an effective FOD Prevention Program.

6.1.2.1.14 Carry out an effective Corrosion Prevention and Control Program.

6.1.2.2 Helicopter Mine Countermeasures (HM) squadrons

In HM squadrons, the Aircraft Maintenance Department Mission Configuration Branch will receive airborne mine countermeasures (AMCM) equipment from the AMCM Systems Maintenance Department and install that equipment into aircraft as directed by aircraft Maintenance Control. Upon removal of AMCM equipment from aircraft, the Mission Configuration Branch will return AMCM equipment to the AMCM Maintenance Systems Department. The Mission Configuration Branch will perform scheduled maintenance and unscheduled maintenance on installed AMCM equipment and equipment in its custody.

NOTE: All maintenance, supply handling, and accounting of communications security equipment will be performed using the procedures in the CMS-1.

6.1.2.3 Aircraft Magnetic Compass Calibration and Verification

6.1.2.3.1 A Magnetic Compass System is any system or instrument that uses the earth's magnetic field to determine and display heading information. Magnetic Compass Systems include, but are not limited to, Standby Wet Compasses, Solid State Magnetometers, Magnetic Azimuth Detectors, and Magnetic Flux Valves. Magnetic Compass Systems are affected by metallic materials, avionics, engines, and other aircraft equipment and must be calibrated in their installed environment to compensate for these effects. A Magnetic Compass calibration is also referred to as a Compass Swing.

6.1.2.3.2 Scheduled and conditional Magnetic Compass calibrations and verifications must be performed per the procedures directed in T/M/S maintenance instructions.

NOTE: To minimize the possibility of calibration coming due during a deployment, aircraft requiring scheduled compass calibration or verification will be calibrated or verified within 90 days prior to deployment.

6.1.2.3.3 Compass Correction Card Requirements. A Compass Correction Card shall be placed near each compass indicator in aircraft requiring compass calibration. Figure 6-8 provides an example of a locally produced Compass Correction Card. The AS5823 (NSN6605-00-584-4227) Compass Correction Card may also be used.

a. The Compass Correction Card will contain the following information:

(1) Front:

(a) SYSTEM - The system that was calibrated, for example, “Standby Wet Compass (Pilot)” or “Standby Wet Compass (Co-Pilot)”.

(b) BUNO - The bureau number of the aircraft the system is installed in.

(c) MODEX - The MODEX of the aircraft the system is installed in.

(d) SWUNG - The date the system was calibrated/verified.

(2) Back:

(a) Stamp or printed name and signature of the CDI that verified entries on the Compass Correction Card are correct and the card is properly installed in the cockpit.

(b) Printed name and signature of CDI who witnessed the calibration or the aircrew who performed the in-flight verification.

b. Headings on the Compass Correction Card shall be changed only as a result of a compass calibration. If a compass verification is performed between calibrations, transcribe the headings from the most recent calibration Compass Correction Card to the verification Compass Correction Card. The new verification Compass Correction Card will be posted near each compass indicator.

NOTE: If the Compass Correction Card in the aircraft is lost or becomes unreadable, a new card may be created from the readings entered in the aircraft logbook per paragraph 6.1.2.3.5.

6.1.2.3.4 WO Documentation. Document compass calibration directed by a special MRC as a special inspection. Document compass calibration not directed by a special MRC as a conditional inspection. Conditional calibrations and verifications will be documented on the same WO or MAF used to document a correction of the condition or discrepancy.

6.1.2.3.5 Calibration and verification completions must be documented in the Aircraft Logbook Miscellaneous History section (OPNAV 4790/25A). Activities with NTCSS Optimized OMA NALCOMIS shall enter the compass calibration readings in the Miscellaneous History Record of CM ALS. Compass Calibrations entries shall include:

a. The system that was calibrated or verified, for example, “Standby Wet Compass”.

b. The date the system was calibrated or verified.

c. The calibration and verification method. If the system was calibrated, list the specific method for example, “MCCS” or “MRC Card No. XXX”. If the system was verified, specify the method of verification, for example, “in-flight verification” or “ground verification”.

d. The name of the CDI who witnessed the calibration or ground verification or the name of the aviator who performed the in-flight verification.

e. The geographical location where the calibration or verification was performed.

f. The statement "All readings are within the limits specified by (list the maintenance instruction)" followed by each heading, reading, and residual error. For example, "All readings are within the limits specified by T/M/S maintenance instruction reference".

Heading = 000, Reading = 003, Residual Error = +3 Degrees

Heading = 015, Reading = 017, Residual Error = +2 Degrees

Heading = 030, Reading = 031, Residual Error = +1 Degree

Heading = 045, Reading = 045, Residual Error = 0

6.1.2.3.6 Deviations

a. Prior to requesting a deviation, if aircraft and operational conditions permit, an in-flight or ground comparison check must be accomplished using a known good reference system (Inertial Navigation System, Tactical Navigation, Ground Control Radar, or Automatic Directional Finder) against the Aircraft Compass System. The comparison check certifies only the apparent operation of the Magnetic Compass System in question and shall be substituted only until the preferred or alternate method of calibration/verification is accomplished.

b. Deviation requests must be submitted via naval message with the following information:

(1) Aircraft T/M/S and BUNO.

(2) Date calibration due.

(3) Type of system and calibration/verification requirement. For example, "Flux Valve Compass 364-Day Scheduled Calibration" or "Flux Valve Compass Conditional Calibration Due to R&R".

(4) Reason calibration cannot be performed.

(5) Method of bearing comparison check and results.

(6) How long deviation is required.

6.1.2.3.7 Responsibilities

a. COMNAVAIRSYSCOM:

(1) Issue MRCs and maintenance technical manuals for each T/M/S and Magnetic Compass System to include calibration schedule and procedures.

(2) Verify Fleet Support Team (FSTs) are trained in Magnetic Compass calibration requirements and procedures.

(3) Resource equipment and technical data required for aircraft Magnetic Compass calibration.

(4) Resolve conflicts between this instruction, T/M/S MRCs, T/M/S aircraft maintenance technical manual specifications, or other engineering directives related to Magnetic Compass calibrations.

b. Activities Operating Naval Aircraft:

(1) Strictly comply with the Magnetic Compass calibration requirements and procedures of this instruction and the applicable maintenance technical manuals.

(2) Verify the training and skill level of personnel maintaining and calibrating aircraft Magnetic Compass Systems. Training will be documented in the Personnel Qualification Standard (PQS) or Advanced Skills Management (ASM) equivalent.

(3) Verify Maintenance Control and QA personnel are trained and knowledgeable in magnetic compass calibration requirements. Training will be documented in PQS or ASM equivalent.

6.1.2.3.8 The aircraft logbook or CM ALS shall be inspected to verify currency of compass calibration upon receipt of the aircraft.

6.1.2.4 Armament Programs

Due to the length and complexity of instructions pertaining to armament programs, the following lists only pertinent instructions on applicable programs:

a. OPNAVINST 8020.14.

b. BUMEDINST 6470.23 and OPNAVINST 5100.27/MCO 5104.1.

c. NAVSEA SW020-AF-HBK-010.

d. OPNAVINST 8000.16.

e. OPNAVINST 8023.24.

f. MCO 8023.3.

6.1.3 O-Level Maintenance; Line Division

6.1.3.1 The Line Division performs O-level maintenance functions in assigned branches, such as Plane Captain, Troubleshooter, and SE (when established), as directed by the MO and in conjunction with other Production Divisions. The Line Division shall:

6.1.3.1.1 Assign personnel, as required, to assist in maintaining and inspecting aeronautical equipment.

6.1.3.1.2 Coordinate and direct troubleshooters. The MO may permanently assign personnel from other divisions to the Troubleshooters Branch of the Line Division, or may assign them to the branch on a daily basis, as circumstances warrant. Troubleshooters shall correct those discrepancies discovered during a launch or immediately preceding a launch that can be corrected quickly.

6.1.3.1.3 Initiate requests to Maintenance Control for unscheduled maintenance.

6.1.3.1.4 Nominate qualified personnel as CDIs.

6.1.3.1.5 Initiate requests for material required for doing assigned tasks.

6.1.3.1.6 Verify the cleanliness of assigned aircraft and spaces.

6.1.3.1.7 Assume custody and accountability for tools and SE assigned to the division.

6.1.3.1.8 Verify the security and proper ground handling of aeronautical equipment.

6.1.3.1.9 Recommend changes in methods and techniques to promote maximum ground safety, safety of flight, and material readiness of assigned aeronautical equipment.

6.1.3.1.10 Carry out an effective FOD Prevention Program.

6.1.3.1.11 Ensure all personnel taking oil samples, servicing, and performing maintenance on engine or gearbox systems are fully aware of the importance of correctly documenting oil consumption and procedures to be followed when high oil consumption is suspected.

6.1.3.2 Troubleshooters are responsible for providing a rapid means of troubleshooting and repairing discrepancies, which occur or are discovered on the flight line. They act as technical advisors to plane captains to ensure timely completion of turnaround and daily inspections and to determine the extent and depth of flight line discrepancies. Troubleshooters must be knowledgeable in flight line operations, flight line safety, and the applicable aircraft systems.

6.1.4 O-Level Maintenance; Unmanned Aircraft Systems (UAS) Division

6.1.4.1 Functions. The UAS Division, when established, shall:

6.1.4.1.1 Supervise, coordinate, and complete periodic maintenance, inspections, decontamination, and rehabilitation of UAS Groups 3 through 5. Crew leaders and other personnel designated by the MO will be permanently assigned. Additional personnel will be made available (as required) from other divisions.

6.1.4.1.2 Perform applicable O-level and selected I-level maintenance functions in those areas outlined in Chapter 3 and Chapter 4, as directed by the MO and in conjunction with other production divisions.

6.1.4.1.3 Keep Maintenance Control advised of the status of work in progress.

6.1.4.1.4 Verify cleanliness of hangar and assigned spaces.

6.1.4.1.5 Nominate qualified personnel for CDI designation.

6.1.4.1.6 Initiate requests for material required for doing assigned tasks.

6.1.4.1.7 Assume custody and accountability of tools and SE assigned to the division.

6.1.4.1.8 Interpret applicable directives.

6.1.4.1.9 Recommend changes in techniques to promote ground safety, flight safety, and material readiness of UAS Groups 3 through 5 per this instruction.

6.1.4.1.10 Carry out an active FOD Prevention Program.

6.1.4.1.11 Initiate requests to Maintenance Control for unscheduled maintenance.

6.1.4.1.12 Provide UAS loading, launching, and recovery crew members and supervisors.

6.1.4.1.13 Expedite the accomplishment of assigned work.

6.1.4.1.14 Carry out an effective Corrosion Prevention and Control Program.

6.1.4.2 Detachments. UAS operating detachments are organized and equipped in a manner, which enables them to operate and perform O-level maintenance tasks aboard ship or at remote operating sites. The extent of maintenance performed varies dependent upon facilities available and deployment length.

6.1.5 I-Level Maintenance; Power Plants Division

6.1.5.1 Three-Degree Gas Turbine Engine Repair

6.1.5.1.1 The Power Plants Division has certain responsibilities associated with the Gas Turbine Engine Maintenance Program contained in Chapter 10. The objective of this program is to provide the policy and procedures whereby maintenance activities can effectively accomplish their assigned engine maintenance responsibilities.

6.1.5.1.2 Power Plant Production Planning. The purpose of planning to establish production goals is two-fold. First, to meet the demands of supported activities as well as the ACC or TYCOM tasking requirements for forward deployment support. Second, to maintain a sufficient quantity of RFI pool quick engine change assembly (QECAs) to absorb surge or cyclic demands, thus allowing a planned, balanced production effort.

a. To achieve these goals the following information should be considered in developing realistic monthly production requirements.

(1) Historical demand - average monthly inductions for the following reasons:

(a) Repair.

(b) Inspection.

(c) Life limited component replacement.

(d) TD compliance.

(e) QECA buildup.

(2) External demand:

(a) Forward deployment support.

(b) COMNAVAIRSYSCOM goals.

(3) Cyclic demand - variations in inductions based on:

(a) Deployments.

(b) Operational commitments.

(c) Seasonal impacts.

b. To achieve established monthly production requirements, selective induction of retrograde engines is desirable. That is done by managing inductions; for example, repair, inspection, and QECA buildup, to vary the workload during surge or cyclic demand.

c. When the activity cannot meet the required production goals because of deficiencies; for example, manning, skills, and facilities, refer to the procedures for improving repair capability.

6.1.5.2 Power Plant Related Maintenance Technical Manuals

6.1.5.2.1 Power plant related maintenance technical manuals are presented in several different arrangements governed by the preparation specification used at the time they were developed. Additionally, the engine

inspection and repair method (installed or removed) usually indicates the major category (01-aircraft or 02-power plants). Technical information required for the inspection or repair may be found in both of the major categories. RCM Analysis of power plants may cause changes in technical manual content due to refinement of PM requirements. As a result, each engine T/M/S is unique in the format of technical manuals required for support. Each activity will research the requirement for its assigned T/M/S and degree of repair to ensure the correct technical manuals are available and used. Examples are:

a. MRCs consisting of complete engine repair requirements card (CERRCs) and QECA.

b. MIMs maintenance technical manuals in conventional and WP formats.

c. SCCs.

6.1.5.2.2 Two groups of technical manuals exist for the control and performance of engine repair. They are the CERRCs and accompanying CERR SCC with conventional MIM or MIM WP with accompanying CERR SCC. Each engine T/M/S may have one or the other. Preparation specifications have been released directing the revision of all CERRCs and accompanying CERR SCCs to the MIM WP format with accompanying CERR SCCs assigned to them. The following paragraphs explain and describe the various technical manuals required for repair.

a. Engine Inspection MRCs.

(1) Major. These inspections are accomplished using QECA MRCs. These cards contain major QECA maintenance requirements to inspect the engine for material degradation and perform essential PM. The cards include the major engine requirements followed by a separate QEC section for each aircraft application. An SCC is included to program accomplishment of the inspection in proper sequence. Discrepancies discovered are corrected using instructions contained in the applicable maintenance technical manuals. These cards are used to perform major inspections on uninstalled engines.

(2) Phase. These inspections are accomplished using phase MRCs. These cards cover the total system scheduled maintenance requirements divided into phases, which are performed at specific intervals. All installed engine inspections and QEC components are included.

b. CERRCs

(1) CERRC sets provide step-by-step procedures and instructions for engine disassembly to a controlled depth. The depth of disassembly is equal to that which is authorized for designated third, second, and first degree repair activities by NAVAIR NOTE 4700 and is consistent with the provisioning of spare parts, tools, and SE for these activities. There are no repair procedures within CERRC sets. For repair instructions consult the applicable engine MIM.

(2) The information in the CERRCs is based on the contents of the reference publications and on conclusions reached during verification. Should the information in the card sets conflict with the information in technical manuals with a later date, the most current information for the specific task will be followed.

(3) In using the CERRC set, it is unnecessary to perform maximum disassembly each time an engine is processed for repair. Perform disassembly only to the depth, which is required to ensure the engine is RFI. When less than complete disassembly is required, use only the applicable cards.

(4) Each card is identified by number for accountability purposes and to provide a means for crediting work accomplishment. The CERRC set numbering sequence does not reflect the sequence in which the work is to be accomplished. This is controlled by the companion SCC.

(5) Task cards that contain major engine inspection requirements are identified by an asterisk (*) preceding the card title and the procedural steps within the cards. The affected task cards are identified on the SCC by an asterisk preceding the card number. The requirements that are preceded by an asterisk must be accomplished each time an engine is processed for first-degree repair. When the items preceded by an asterisk have been accomplished, the engine is to be considered zero time for inspection purposes.

(6) QA cards are included to emphasize the need for inspection during or after performance of critical procedures. To ensure accomplishment of these requirements in their proper sequence, review QA cards referenced on the task card before commencing the task.

c. Technical Manuals for I-Level Maintenance (WP format). The procedures for the use of the WP format are identical to those identified for CERRCs in the previous paragraph except the WP format contains instructions for disassembly, inspection, repair, reassembly, and testing. In addition, it identifies SE and SE maintenance requirements.

d. CERR SCC. The CERR SCC is a graphic presentation that will program the accomplishment of CERR (third, second, and first-degree) in a logical order. The CERR SCC is oriented to actual work time and manpower usage. This element provides the only record of engine status during repair, including QA inspections. CERR SCCs are used with both the CERRC and WP formats.

e. Technical Manuals to Perform Tasks (Inspection/Repair). Selection of the technical manual to be used cannot be made until the task has been determined for inspection or repair. The following guidance applies in most cases:

(1) Engines inducted for inspection or repair will receive thorough screening using procedures in Chapter 3. Additionally, a preinduction inspection will be accomplished prior to disassembly as required by supporting technical manuals, QECA MRCs, CERRCs, or WP and controlled by the applicable SCC.

NOTE: The preinduction inspection normally consists of oil filters, fuel filters, freedom of rotation, external visual, and in some cases, bore scope inspections. A preinduction test cell run should be performed to verify the engine operating parameters if permitted by the material condition.

(2) If discrepancies discovered during AESR screening and preinduction inspection can be corrected within the scope of the QECA MRCs, proceed with the inspection using this deck. Should they exceed the scope of the QECA MRCs, verify the required action(s) with the maintenance allocation table of the applicable MIM and NAVAIR NOTE 4700. If the repair is within the activity's assigned degree of repair, precede using the applicable CERRC or WP manual and accompanying CERR SCC. If not, take appropriate beyond capability of maintenance (BCM) action.

(3) Engines Inducted for Repair. Discrepancies discovered during the AESR screening and preinduction inspection shall be verified against the maintenance allocation table of the applicable MIM and NAVAIR NOTE 4700. If the repair is within the activity's assigned degree of repair, proceed using the applicable CERRC or WP manual and accompanying CERR SCC. If not, take appropriate BCM action.

NOTE: For engines requiring third or second-degree repair also consult inspection criteria (Chapter 3). Engines requiring first degree repair will have all inspection requirements performed. First-degree repairs of a minor nature not requiring an excessive amount of man-hours may have the inspection requirements waived by the ACC or TYCOM.

f. Component Repair Technical Manuals. These accessory manuals are prepared as individual manuals containing D-level and I-level maintenance procedures for check, test, inspection, repair, and the IPB. When pursuing improved repair capability for components related to the engine repair program refer to Chapter 5.

6.1.5.3 Modular Engines

6.1.5.3.1 Modern technology and new maintenance concepts have changed some inspection and repair management procedures. Newly designed engines are constructed in separate modules, for example, compressor, combustion, turbine, afterburner, gearbox, torque meter, or combinations thereof to simplify the repair and maintainability process. Modular engines are routinely inspected while installed using the special/phase inspection concept. They are removed only for cause, for example, low cycle fatigue (LCF), failure, and maximum operating time.

6.1.5.3.2 When the engine is removed, perform the same AESR screening and preinduction inspection process as with other engines. Repair of the modular engine is accomplished by removal and repair or replacement of the defective modules. This repair action is accomplished using the applicable CERRC and accompanying CERR SCC or with conventional MIM or WP with accompanying CERR SCC.

6.1.5.3.3 Inspection requirements subsequent to or concurrent with engine repair vary. Some modular engines, for example, F404 and T700, have engine MRC decks with accompanying SCCs. Earlier designed modular engines, for example, T400 and T56, have the QECA MRCs with accompanying SCC. Subsequent to or concurrent with repair, the inspection requirements outlined in the applicable engine MRC and QECA MRCs will be performed.

6.1.5.4 Scheduled Removal Components (SRCs)

The appropriate engine shop(s) and work center(s) will verify SERNOs of installed SRC, EHR, ASR, or CM ALS components during the inspection/repair action. To preclude extensive disassembly, only those accessories or components, which are exposed during required maintenance actions, need be verified. The inventory is performed using a locally prepared form containing a preprinted list of SRC, EHR, ASR, or CM ALS components with a column provided for recording the serial numbers and part numbers of the installed items. NTCSS Optimized OMA NALCOMIS activities use the Life Limited Component Report PART II to verify component SERNOs and part numbers. It is desirable to verify RFI engines have all SRC, ASR, or CM ALS items with sufficient time remaining to reach the next scheduled engine removal.

6.1.5.5 Engine Inspection/Repair Control and Flow

Separate but interrelated functions and tasks are combined to make up the workload in support of engine maintenance. Proper control, coordination, and management of all available resources are required. The limited time available for the performance of maintenance does not allow these functions or tasks to be considered, planned, and performed on an individual basis. They must be combined and sequenced properly if the overall job is to be accomplished efficiently.

6.1.5.6 Power Plants Supply Procedures

6.1.5.6.1 Due to the critical nature and high dollar value of aircraft engines, several nonstandard procedures apply. Most engines in work at the I-level engine shop(s) or work center(s) are, in fact, supply assets. Engines in an awaiting parts status normally remain physically in the Power Plants Division due to the size of the component. Parts ordered to support expeditious repair are ordered using the squadron priority. Any engine status changes in Power Plants must be coordinated with Production Control.

6.1.5.6.2 Replacement parts and components identified through AESR screening and engine preinduction inspection shall not be placed on order unless the required repairs are verified against the maintenance allocation chart of the applicable engine MIM, and the repair is within the activity's assigned degree of repair per NAVAIR NOTE 4700.

6.1.5.6.3 Replacement parts and components should be stored in the area which provides the highest degree of protection, preservation, and accountability.

6.1.5.6.4 Pre-expended bin (PEBs) contain high usage consumable material. Repair activities shall develop a listing of items required to support the degree of repair assigned. These items are identified on the consumable material listing of the applicable engine maintenance technical manuals. The list shall be provided to the Supply Officer for PEB establishment and maintenance.

6.1.5.7 Engine Test Facilities

6.1.5.7.1 Gas Turbine Engine Test System (GTETS) (cell or stand) and Global Test Facilities (GTF) maintenance responsibilities are assigned as follows:

a. Permanent Facilities Ashore. Maintenance of the structure and systems, such as fuel, water, air, electrical wiring, fire extinguishing, and thrust bed repairs, will be the responsibility of the station public works department. The work center having physical custody is responsible for maintenance of the control console, engine connector panel, performance of all scheduled maintenance, and the overall material condition of the facility.

NOTE: These provisions are also applicable to GTFs, with the exception of data acquisition systems and engine adapters. GTFs include rotor blade test towers, ram air turbine testing, Kemen Engine Test Facility (FRCSE), or other facilities unique to the industrial sites.

b. Permanent Facilities Afloat. The below deck fuel system, electrical and fire extinguishing systems, and deck mounting will be maintained by the ship's engineering/air department as appropriate. The work center having physical custody is responsible for maintenance of the control console, engine connector panel, thrust bed, above deck fuel system, the performance of all scheduled maintenance, and the overall material condition of the facility.

c. Mobile Facilities. Basic systems, such as water, air, CO2, and station electrical power supply, shall be provided and maintained by Public Works Department. The work center having physical custody shall ensure the test cab, control console, engine connector panel, instrumentation, thrust bed and restraint equipment, fuel, and electrical system are properly maintained and that all scheduled maintenance is performed.

6.1.5.7.2 The maintenance and upkeep of jet engine test facilities and ancillary equipment are done as follows:

a. Compliance with preoperational and periodic maintenance technical manuals is mandatory.

b. A fresh water wash down of each test facility and surrounding area will be accomplished at least once a week afloat, once a month ashore, or more often as conditions dictate, to minimize the adverse effects of dirt, dust, and salt accumulation. If environmental issues preclude shore activities from meeting this requirement, a hand wipe down using environmentally approved material will satisfy the requirement. Activities having facilities, which meet these criteria, will coordinate with their respective ACC or TYCOM to obtain approval for use of alternative methods.

c. Suitable facilities shall be provided for storing auxiliary equipment when uninstalled and not in use.

d. Outdoor engine stand junction box and engine wiring harnesses shall be protected by a suitable weatherproof cover when not in use.

e. Suitable supports shall be used to ensure interconnecting cables, hoses, and lines do not come in contact with the ground. Water, grease, or other foreign matter shall not be allowed to accumulate on the cables.

f. A Jet Engine Test Cell Malfunction Report shall be forwarded by Broad Arrow message to the ACC or TYCOM in the format specified by the ACC or TYCOM, when a facility becomes inoperative to the extent that an unacceptable production delay is anticipated. The ACC or TYCOM will advise the originator of the report when corrective action cannot be effected with ACC or TYCOM available assets and expertise. GTF activities shall report malfunctions and inoperative equipment per local policy.

6.1.5.7.3 Electrical Power Requirements. The instruments used in conjunction with the test stand are designed to operate on predetermined power ratings within relatively small tolerances. Changes in voltage or frequency or a combination of both will affect the accuracy of the instrumentation and contribute to component failures. Therefore, whenever possible station or commercial power will be used. If not available, and electrical power is supplied by a portable generator, the operator will ensure:

a. The portable generator is 115 volts A.C., three phase, and four wire.

b. The portable generator is monitored to ensure its voltage and frequency remains stable.

WARNING: TO PROVIDE FOR PERSONNEL SAFETY, THE CONTROL CAB, ENGINE STAND, AND PORTABLE GENERATOR SHALL BE CONNECTED BY AUXILIARY GROUNDING CABLES THAT WILL HAVE A COMMON CONNECTION TO A SUITABLE GROUNDING DEVICE; FOR EXAMPLE, A METAL STAKE DRIVEN INTO THE GROUND AT A SUFFICIENT DEPTH TO ENSURE PROPER GROUNDING.

6.1.5.7.4 Jet Engine Test Facility Calibration. I-level and D-level activities with calibration capability shall use calibration intervals cited in the Metrology Requirement List.

a. A qualified operator and an electrician will be available at all times to assist during calibration and work by the field team representatives.

b. A list of known instrument discrepancies will be compiled and made available to the calibration team.

6.1.5.7.5 Jet Engine Test Facility Usage Report. When directed by the ACC or TYCOM, a jet engine test facility usage report will be submitted.

6.1.5.7.6 Operational Training and Certification. GTETS/GTF operator training, certification, proficiency, and recertification requirements are outlined in paragraph 10.23.

6.1.5.7.7 Engine Test Facility Procedures. Using the procedures outlined in the applicable engine maintenance technical manuals and the test system preoperational MRCs, all jet engine test facility custodians shall prepare a check list of starting, shutdown, and emergency procedures to be used during engine test system operation. The check list will be available within the control cab and used by all operators.

6.1.5.7.8 Engine Test Cell Technical Evaluation. Prior to correlation, all newly constructed and significantly modified (affecting aerodynamic or thermodynamic flow) or rebuilt fixed engine test facilities must undergo a comprehensive technical evaluation conducted by the NAVAIRWARCENACDIV Lakehurst NJ, under the direction of COMNAVAIRSYSCOM, to ensure they are suitable and supportable for use. Unless waived by COMNAVAIRSYSCOM, a technical evaluation and an engine correlation must be satisfactorily completed before service engines can be made RFI and installed in aircraft. Evaluation should be requested by message

to NAVAIRWARCENACDIV and COMNAVAIRSYSCOM prior to acceptance of the facility by the local activity resident officer in charge of construction.

6.1.5.7.9 Engine Test Cell Correlation. To ensure engines consistently meet all performance requirements, a test cell correlation for each engine type tested shall be conducted for all enclosed, permanent turbofan, jet, shaft, or prop engine test facilities per paragraph 6.1.5.7 above. Test cell correlation may also be required when engine test procedures and parameters are changed or the design of engine dress kit hardware, for example, inlet screen, bellmouth, or exhaust nozzle, is modified such that it could affect aerodynamic OR thermodynamic flow. Outdoor (open-air) jet engine test systems generally do not require correlation unless certain site-specific conditions alter airflow dynamics to the engine. Outdoor (open-air) Turboshaft Engine Test Systems using a torque tube to measure torque output also require correlation. If a torque tube is replaced with a different serial number torque tube for any reason, a recorrelation must be performed for both indoor and outdoor turboshaft test systems. The interval between correlations shall not exceed 3 years to maintain integrity of engine performance. However, with joint ACC, TYCOM, and NAVAIRWARCENACDIV Lakehurst NJ concurrence, an extension of the correlation frequency requirement for a specific type engine test system may be granted. All activities are responsible for contacting the ACC, TYCOM, and NAVAIRWARCENACDIV Lakehurst NJ concerning test cell correlation requirements.

6.1.6 I-Level Maintenance; Airframes Division

6.1.6.1 The Airframes Division has certain responsibilities associated with the Hydraulic Contamination Control Program (paragraph 10.5) and the Tire and Wheel Maintenance Safety Program (paragraph 10.6).

6.1.6.2 Airframes Division personnel involved with hose and tube fabrication and testing shall be familiar with the Aviation Hose and Tube Manual, NAVAIR 01-1A-20. This manual is a single source of information relating to COMNAVAIRSYSCOM policies for naval aircraft and related hose and tube assemblies. The NAVAIR 01-1A-20 contains two sections, which provide, in detail, the methods to be used to fabricate, repair, test, clean, inspect, and store hose and tube assemblies. The manual contains COMNAVAIRSYSCOM approved methods to produce hose and tube assemblies suitable for installation or storage, and takes precedence over and supersedes all other COMNAVAIRSYSCOM instructions, accessory bulletins, LPSs, and LESs issued prior to the date of the manual. When any publication is in conflict with NAVAIR 01-1A-20, NAVAIR 01-1A-20 shall take precedence.

6.1.6.3 The fabrication of sheet metal parts for internal structural repair requires the careful adherence to the accepted standards of aircraft sheet metal work. Information needed to fabricate replacement parts is usually found on the engineering drawings, while information concerning repairs may be found in the structural repair manual for the aircraft. Aircraft structural repair manuals contain information on extrusions and fabrication data for various sheet metal equivalents. These manuals will indicate the type of material to be used in each repair. If the correct material is not available, NAVAIR 01-1A-1 should be checked for an acceptable substitute.

6.1.7 I-Level Maintenance; Avionics

6.1.7.1 Work Center 670 is responsible for managing and performing calibration and repair on selected TMDE. RCM treats calibration tasks as failure finding or operational check. PM tasks for test, measurement, and diagnostic equipment (TMDE) are determined in the same manner as on-condition tasks to ensure performance standards are met.

6.1.7.1.1 Scheduling of test and measurement system (TAMS) into the TMDE Work Center and documentation of calibration actions will be accomplished under the guidelines established in OP43P6B. Requests for the MEASURE User's Manual should be addressed to MEASOPCONCEN, PO BOX 357064, SAN DIEGO CA 92135-7064 or email at

Service_Desk_NAVAIR_METCAL@myteam.navair.navy.mil. The activity, quantity desired, and justification for the request must be stated.

6.1.7.1.2 Figure 6-1 is an example of a possible VIDS board layout in a TMDE Work Center that shows column 1 only, the remainder of the board format may be similar to the Production Control board format.

6.1.7.1.3 The Naval Aviation metrology and calibration (METCAL) Program is detailed in paragraph 10.18.

6.1.7.2 All maintenance, supply handling, and accounting of communications security and telecommunications security equipment will be performed using the procedures contained in the CMS-1.

6.1.7.3 At Navy and Marine Corps activities, repair of aerial photographic equipment, including side looking radar and infrared equipment, will be performed in the Avionics Division of the IMA or FRC.

6.1.7.4 The Miniature/Microminiature Program is detailed in paragraph 10.22.

6.1.7.5 Cleaning and corrosion prevention and control of avionics equipment shall be conducted using the policy established in NAVAIR 01-1A-509 (series).

6.1.8 I-Level Maintenance; Armament Division

6.1.8.1 Maintenance (including calibration), inventory control, and reporting of armament equipment is an integral part of the task of maintaining airborne weapon systems. Maintenance functions, policy, and responsibilities for armament equipment are listed in OPNAVINST 8000.16.

6.1.8.2 The Armament Division's objective is to achieve and maintain maximum material readiness, safety, and conversion of armament equipment through command attention, policy direction, and appropriate administration by all activities responsible for armament equipment. Included are:

a. Maintenance (including calibration) and repair of armament equipment at that level of maintenance, which will ensure optimum use of resources.

b. The protection of armament equipment from the elements through the execution of active cleaning, corrosion control, preservation, and storage programs.

c. The execution of a perpetual asset inventory control system.

d. The collection, analysis, and use of pertinent data to effectively improve armament equipment material readiness, safety, and use while simultaneously increasing the efficient and economical management of personnel, monetary, and material resources.

6.1.9 I-Level Maintenance; Aviation Life Support Systems (ALSS) Division

6.1.9.1 ALSS

The maintenance of ALSS is an integral part of maintaining aircraft. It is essential that the procedures and the assigned responsibilities for those systems be clearly understood and complied with to ensure maximum safety and survivability as well as aircraft readiness is achieved. The following applies:

6.1.9.1.1 ALSS is defined as those items of equipment and clothing needed to allow aircrew members and aircraft passengers to:

a. Function within all parameters of the flight environment.

b. Safely egress from disabled aircraft and descend or ascend to the surface.

c. Survive on land and water and interface with rescue forces.

6.1.9.1.2 ALSS include such items as escape systems, environmental systems, fire extinguishing systems, aircrew clothing, survival kits, personnel parachutes and associated hardware, life rafts and life preservers, anti-exposure suits, survival radios and other emergency signaling equipment, flight helmets, oxygen equipment, anti-G suits and associated hardware, and other miscellaneous survival and life support items. It is essential that the procedures and assigned responsibilities for these systems be clearly understood and complied with to ensure maximum safety and survivability as well as aircraft readiness is achieved.

6.1.9.2 Policies.

6.1.9.2.1 Production Control (020 or 028) will schedule and manage workload in 800 Division.

6.1.9.2.2 Only qualified I-level personnel will be permitted to pack, repair, or inspect personnel parachutes, drogue chutes (excluding drogue chutes with nonremovable head boxes), SSKs, and inflatable survival equipment.

6.1.9.2.3 Only qualified, certified I-level personnel shall be permitted to service or inspect egress systems.

NOTES: 1. ALSS O-level and I-level areas of responsibility outlined in NAVAIR 13-1-6 series manuals and shall be strictly followed.

2. Cross training of non-AME personnel to perform egress system maintenance is not permitted.

3. Cross training of non-PR personnel to perform I-level PR maintenance responsibilities is not permitted.

6.1.9.3 PR and AME Qualifications.

NOTES: 1. All PRs and AMEs must be qualified and certified under the Explosive Handling Personnel Qualification and Certification Program.

2. PRs that maintain night vision systems must be examined and meet the visual acuity standards of NAVMED P-117, Chapter 15, Article 15-98

6.1.9.3.1 A qualified PR is defined as a graduate of the Navy PR "A" School.

6.1.9.3.2 A qualified AME is defined as a graduate of the Navy AME "A" School and CNATTU for specific T/M/S egress systems.

NOTE: Completion of either the CNATTU F/A-18A-D SJU-17 Navy Aircrew Common Ejection Seat (NACES) course or the F/A-18 E/F SJU-17 NACES course meets the training requirement to perform work on the SJU-17 NACES installed in F/A-18A-F and E/A-18G aircraft. Completion of the SJU-17 NACES course does not qualify personnel to perform work on any other model of ejection seat installed in F/A-18 aircraft.

6.1.9.4 Contract maintenance. I-level activities supported by contract maintenance shall use only qualified, certified civilian personnel to perform I-level maintenance on ALSS and egress systems.

6.1.9.4.1 I-level activities supported by contract maintenance shall use civilian personnel (graduates of the Navy PR, or Air Force, or Army MOS course) to perform PR I-level maintenance on ALSS.

6.1.9.4.2 I-level activities supported by contract maintenance shall use civilian personnel (who graduated from the Navy AME "A" School and CNATTU for specific T/M/S or T/M/S factory equivalent training course) to perform egress system maintenance.

6.1.9.4.3 In addition to paragraphs 6.1.9.4.1 and 6.1.9.4.2 above, for contract maintenance personnel to be designated as QA Inspectors on ALSS and egress equipment, a documented working history with ALSS and egress equipment is required.

NOTE: Use of personnel not qualified, certified to perform maintenance on egress systems is not authorized.

6.1.9.5 Responsibilities. Responsibilities and procedures for all Navy and Marine Corps activities are specified in the aviation crew systems manuals, aircraft technical manuals, and other specific equipment technical manuals. Problems and recommended changes to these procedures and ALSS equipment functions are to be submitted per paragraph 10.9.

6.1.9.6 Pools

6.1.9.6.1 A pool of ALSS spare assemblies (parachutes, life rafts, SSKs, life preservers, survival radios, and miniature regulators) shall be established by IMAs or FRCs ashore. The spare ALSS assemblies are owned by the station or MALS Aviation Supply Officer and are inventoried, maintained, and stored by the local IMA/FRC. This material will be maintained, in a rotatable ALSS pool located in the IMA and FRC 800 Division. IMA and FRC personnel shall ensure all spare ALSS equipment is properly stored, RFI upon demand by O-level activities, and on-hand quantities match those on the activity's supply records.

6.1.9.6.2 When the deployment site does not have an ALSS pool, the supporting shore-based IMA or FRC is responsible for providing RFI assemblies equal to 10 percent of those required for full outfitting of the deploying squadron or detachment to the deployed site.

6.1.9.6.3 Afloat IMAs will be responsible for providing all repair parts and components required to support the embarked squadrons' ALSS equipment.

6.1.9.6.4 Upon completion of deployment, the shipboard IMA is responsible for returning the same number of RFI assemblies originally provided by the supporting shore-based IMA or FRC. When the deployment site does not have an established IMA, the deployed site Supply Officer is responsible for the return of all unused assemblies and adequate documentation on the used material to guarantee proper stock replacement, carcass tracking, and charges.

6.1.9.6.5 Personal survival equipment, such as helmets, survival vests, gloves, flight suits, or items of squadron equipment, which are not normally inducted into the IMA or FRC for maintenance, are not to be included in ALSS pools.

6.1.9.7 Aviation Life Support Systems (ALSS) Safety

6.1.9.7.1 ALSS, by virtue of their unique function and responsibility, present inherently hazardous situations when approached improperly. Included in the overall concept of division and work center safety programs are several areas peculiar to ALSS. Emphasis must be placed on these areas at all levels of command, with support from each person that may come in contact with them. Division chief petty officers or NCOICs, leading chief petty officers or NCOs, and Work Center Supervisors must recognize the responsibility incumbent upon safety petty officers or NCOs and assist, when required, in correcting these hazardous situations. Safety petty officers or NCOs must be guided by a strict sense of responsibility and remain alert to any possibility of an unsafe situation before it develops.

6.1.9.7.2 Hazardous areas peculiar to ALSS include but are not limited to:

a. LOX generating, handling, and servicing.

b. LOX converter systems.

c. Gaseous oxygen handling and servicing.

d. Gaseous oxygen and nitrogen generating systems.

e. Test stands and SE using low and high pressure gauges.

f. Cartridges and CADs, such as installed and uninstalled parachute automatic actuators, ballistic spreading guns, ejection seats and components, canopy systems, and components containing explosive devices.

g. Personnel mounted pyrotechnics.

6.1.9.8 Storing and Handling Uninstalled Egress Systems and Explosive Devices

6.1.9.8.1 The storage of removed cartridges, CADs, and PADs must be accomplished per NAVAIR 11-100-1.1-CD.

6.1.9.8.2 Egress or explosive systems with installed explosive devices which are not to be installed in the aircraft for a period of time will be stored in a secure area. The storage area environment and time limitations are defined in NAVAIR 11-100-1.1-CD, NAVSEA OP 4, OP 5 VOL I, and other applicable directives.

6.1.9.8.3 Egress or explosive system devices involved in mishaps will be rendered safe and disposed of by explosive ordnance disposal personnel only, per NAVAIR 11-100-1.1-CD after release by the Aircraft Mishap Board (AMB).

6.1.9.8.4 Ejection seats and escape system components are structurally and functionally designed for one time use only. Ejection seats or escape system components that have been ejected or fired, regardless of apparent condition, shall be scrapped per current regulations after release by the AMB.

6.1.9.8.5 ALSS RFI Shelf Cycle. Spare ALSS assemblies maintained in the IMA 800 Division rotatable pool are authorized up to 90 days RFI shelf life before they begin to accumulate time for inspection purposes. Storage and environmental conditions for all RFI equipment must meet standards set forth in NAVAIR 13-1-6 series manuals and comply with NAVAIR 11-100-1.1-CD (where applicable).

NOTE: The 90 day RFI shelf life ends and time will commence for inspection purposes when the ALSS asset is removed from the IMA or FRC pool storage facility.

6.1.9.9 Training

Follow-on formal training is available to the AME and PR through the appropriate C school. Training is also available through CNATT.

6.1.9.10 Aviation Life Support Systems (ALSS) Publications

6.1.9.10.1 The aviation crew systems manuals, NAVAIR 13-1-6 series manuals, provide technical information related to the configuration, application, function, inspection, and maintenance of ALSS.

6.1.9.10.2 Additional technical manuals that provide specific information for related items or systems are:

a. NAVAIR 01 manuals - specific systems by the T/M/S.

b. NAVAIR 03 manuals - specific equipment technical publications.

c. NAVAIR 06 manuals - oxygen, nitrogen, and cryogenics.

d. NAVAIR 11 manuals - cartridge, CADs, PADs devices, and pyrotechnics.

e. NAVAIR 16 manuals - survival radios.

f. NAVAIR 17 manuals - oxygen components and test equipment.

6.1.9.10.3 Specific maintenance actions are detailed in MRCs and SPCs. These cards not only give step-by-step procedures but include the number of persons and consumable parts required to complete a task. MRCs are issued by COMNAVAIRSYSCOM and contain scheduled maintenance requirements applicable to O-level and I-level activities for the specific aircraft or equipment for which they are issued. SPCs provide a ready reference for performing scheduled maintenance on a specific type of aircrew survival equipment and are an extension of the NAVAIR 13-1-6 series manuals. Both, MRCs and SPCs are presently used in the performance of maintenance requirements and have been the cause of confusion in numerous fleet activities. SPCs are being replaced by MRCs as manuals are revised. Care should be exercised to ensure the most current publication is used.

6.1.9.10.4 ALSS Inspections. The scheduled maintenance requirements for aircraft and man-mounted equipment are published in the applicable aircraft MRCs and NAVAIR 13-1-6 series manuals. They are based on calendar days and are authorized a plus or minus three days deviation during compliance by the prescribed maintenance level.

NOTE: Due to the uniqueness of each platform T/M/S, should a conflict occur between sources of guidance, the governing authority for a plus or minus authority resides with applicable T/M/S MRCs, NAVAIR 13-1-6 (series) manuals, or commercial aircraft derivative task cards.

6.1.9.11 Aviation Life Support Systems (ALSS) Tool Control

Tool control within the ALSS Division is unique. In addition to policy set forth in paragraph 10.12, all tools must be accounted for after the repack and inspection of each item, for example, parachutes and flotation equipment. These items cannot be functionally checked prior to use. A maximum of eight like items will be submitted per MAF or WO work request covering multiple like items (Figure 6-2).

6.1.9.12 Documentation

Standardized aviation 3M documentation throughout the Navy and Marine Corps will increase the accuracy of maintenance data reporting, thereby producing a higher percentage of reliable maintenance data. The importance of accurate documentation cannot be over emphasized.

NOTE: Activities with NTCSS Optimized OMA NALCOMIS refer to Chapter 5 for specific documentation requirements.

6.1.9.13 Planned Maintenance System (PMS) for Aviation Life Support Systems (ALSS)

The PMS consists of scheduled maintenance and unscheduled maintenance functions. An effective maintenance program requires the use of COMNAVAIRSYSCOM MRCs. The MRCs present the maintenance tasks required to maintain the equipment in an effective operational status. To ensure complete operational readiness, items such as CO2 transfer pumps, webbing cutters, and sewing machines in the ALSS Division will be included in the PMS.

6.1.9.14 Fleet Support Team (FST)

Each item in an ALSS falls under the cognizance of the FST, the In-Service Support Activity located within an ISSC. ISSC is charged with providing data and assistance of a technical nature. FST members may be located at FRCs, NAVAIRWARCENs, or other COMNAVAIRSYSCOM team locations.

6.1.10 I-Level Maintenance; Support Equipment (SE) Division

6.1.10.1 Functions.

6.1.10.1.1 Limited I-Level Maintenance. When an organization is deploying to an operating environment without IMA or FRC capability, predeployment planning shall include how accomplishment of scheduled maintenance of SE is to be accommodated. If in theater afloat or ashore I-level support nonavailability is anticipated due to distance or time, the deploying unit shall request all necessary I-level SE training from its supporting IMA or FRC. Successful completion of this training will allow for self-sufficiency of scheduled SE maintenance for IMRL during deployment. This authority for I-level detachment maintenance of SE excludes maintenance of aircraft lifting devices that require a functional load test, proof loading that uses a portable or stationary jack tester, when NDI requirements exist, and in any situation where the appropriate special tools or SE, consumable maintenance materials, or replacement parts are unavailable. Maintenance documentation will be accomplished per Chapter 15.

NOTE: SE shall not be transferred in a non-RFI status without prior approval of the cognizant Support Equipment Controlling Authority (SECA).

6.1.10.1.2 Calibration is a scheduled performance evaluation and correction requirement for certain specified items of SE. Calibration is the responsibility of the Avionics Division.

6.1.10.1.3 Unscheduled maintenance is the maintenance required due to SE failures or as a result of discrepancies and deficiencies found during scheduled maintenance. Unscheduled maintenance consists of fault isolation (troubleshooting), repair or replacement, test, and calibration (if required).

6.1.10.2 Maintenance Scheduling

6.1.10.2.1 The MMCO shall ensure all SE maintenance is optimally scheduled. This includes scheduled maintenance, unscheduled maintenance, and TD compliance. Monthly scheduled maintenance plans will be developed either manually from files or by MIS procedures, and will project the scheduled workload. If possible, SE on subcustody to user activities shall be recalled at least 1 day prior to a scheduled inspection. When operational requirements dictate, PM may deviate plus or minus 3 days on calendar cycles and plus or minus 10 percent on meter times. The next inspection will be due as if no deviation had occurred.

NOTE: When deviations described previously have been exceeded, the SE item is restricted from further operation until completion of the subject inspection, that is, after 3 days or 10 percent have passed. When PM inspections are done earlier than 10 percent or 3 days, the next inspection is due based on the date, hour, or cycle the PM inspection commenced. SE reporting custodians need no higher authority to perform inspections outside authorized deviations.

6.1.10.2.2 SE and AWSE preservation is designed to protect the material condition of equipment which is not expected to be used for extended periods of time. This equipment may be preserved at any time, regardless of material condition, when it is determined to be in the best interest of the equipment or activity. For standardized management of personnel and resources, activities may use the following categories to determine the level of preservation desired:

a. Category A - SE and AWSE which has anticipated usage within the next 90 days. This equipment shall be maintained under current SE/PMS directives.

b. Category B - SE and AWSE which could possibly be used within the next 180 days. This equipment may be placed in a minimum of Level I.

c. Category C - SE and AWSE not needed for extremely long periods of time (in excess of 180 days) may be placed in Level II or III preservation depending on the resources at the geographical area.

6.1.10.2.3 Levels of preservation for aircraft, SE, and AWSE are defined below. Dehumidification (Level III) is the preferred method of preservation. The following applies:

a. Level I: 0 - 90 days (+/- 3 days).

b. Level II: 0 - 1 year.

c. Level III: 0 - indefinite.

6.1.10.2.4 Corrosion Preservation and Control. QA will monitor to determine if:

a. A PM program is in effect that ensures compliance with NAVAIR 01-1A-509 (series), NAVAIR 15-01-500, NAVAIR 17-1-125, NAVAIR 17-35FR-01, and other existing directives.

b. Only authorized and current shelf life corrosion prevention and control materials are used.

c. Maintenance personnel supervising or performing corrosion prevention, arrestment, and removal receive corrosion control training.

NOTE: SE in Category B or Category C preservation should be removed from the MRC inspection schedule. During normal Category B and C preservation, the "clock" stops for MRCs and is started again upon depreservation. When SE is depreserved, it shall resume its formal PMS inspection program. Refer to NAVAIR 17-1-125 for exceptions.

6.1.10.2.5 Operational commanders are authorized to defer scheduled maintenance of otherwise functional equipment, including replacement of high time components. This authority is effective only during combat, and shall not be delegated below the Commanding Officer (CO) of the ship or air Type Wing commander (as appropriate). ACC and TYCOM notification is not required except in the case of high time components, which will be reported to the ACC or TYCOM by priority message when installed components are at or beyond replacement high time. During times other than combat, operational commanders shall request authorization from the ACC or TYCOM to defer scheduled maintenance of otherwise functional equipment (excluding high time components) for operational commitments. The request shall be sent by the activity in possession of the equipment. The notification message will include the following information: SERNO, T/M/S, NOMEN, PN, and REQN NR STATUS. This authority is not to be applied to LCF or structural life limited items (those items whose disposition is "RETIRE" in the PMIC). Scheduled maintenance deferred at the local operational commander level should not exceed one interval of that maintenance event. As soon as operations permit, deferred maintenance actions must be brought current. Authorization for further deferral should be referred to the ACC or TYCOM.

6.1.10.3 Component Repair

6.1.10.3.1 Since aircraft readiness is normally dependent upon SE readiness, it is essential that IMAs and FRCs perform SE component repair.

6.1.10.3.2 Documentation is essential to component repair. Effectiveness, readiness, provisioning, procurement, funding, and manpower are based on analysis of maintenance and supply documentation.

NOTE: SE lead acid batteries, although consumable by definition will be included in the component repair process.

6.1.10.3.3 Policies and procedures for component repair, defined in Chapter 5 and paragraph 10.20 apply to SE and dictate that an Individual Component Repair List (ICRL) for SE will be established. When developing an ICRL, consideration should be given to those items of consumable material that are within the

capability of the IMA/FRC to repair. Component repair of engines included in the COMNAVAIRSYSCOM Nonavionic CSE QECA Program will be performed per NAVICPINST 4400.75.

NOTE: Redundancy of component repair capabilities within a currently established work center should be kept to a minimum. Ordinarily, IMAs/FRCs will perform component repair for WSE subcustodied to the Weapons Department.

6.1.10.4 Cleaning, Corrosion Control, and Preservation

6.1.10.4.1 The corrosion control and preservation policies outlined in NAVAIR 17-1-125 and paragraphs 10.13 and 10.17, are applicable to SE as amplified below. The procedures in NAVAIR 01-1A-509 (series) and NAVAIR 15-01-500 are applicable in part to SE. Cleaning of avionics test and measurement equipment shall be per NAVAIR 17-35FR-06 and NAVAIR 01-1A-509-1. Completion of a corrosion course is required per paragraph 10.13 for personnel assigned to the SE Corrosion Control Branch.

6.1.10.4.2 Since SE structures (frame and skin) are commonly made of ferrous metals, SE is not normally susceptible to inter-granular corrosion and catastrophic structural failure due to corrosion as are the nonferrous metals on aircraft. However, SE end items are usually susceptible to surface and pitting corrosion and must be cleaned on a scheduled basis, as required, to preclude salt and stack gas residue or dirt and oil contaminant accumulation. Corrosion control is mandatory, and shall be performed to maintain the protective envelope on SE, and not merely for cosmetic purposes. Shipboard SE requires cleaning, corrosion prevention, and treatment more frequently than shore-based SE.

6.1.10.4.3 Corrosion prone areas in both operating and nonoperating SE are the air induction systems, metal areas subject to condensation cycles, and electrical harnesses and connectors. These areas shall be cleaned and frequently receive corrosion treatment. Additionally, all reservoirs and tanks shall be either topped off or drained and preserved.

6.1.10.4.4 Environmental conditions at SE sites vary considerably and a program for cleaning and preservation for end items of SE shall be established by the reporting custodian or may be established by the ACC or TYCOM by site category, for example, afloat, shore-based, or by geographic location (as required).

6.1.10.4.5 Fluid Handling. Various consumables, such as fuel, LOX, and hydraulic fluid are used in SE for servicing and maintaining aircraft. Because of the hazardous nature and susceptibility to contamination of these fluids, it is imperative that personnel associated with such operations have a working knowledge of them. Detailed characteristics, handling procedures, sampling, and contamination limits for fuel, LOX, and hydraulic fluids are in paragraphs 10.2, 10.4, and 10.5, and shall be included in each activity's SE training syllabus.

6.1.10.5 Safety

Aviation safety seeks to identify and eliminate hazards. Effectiveness and safety result from properly trained personnel using properly designed equipment under established procedures and competent supervision. It requires active participation by all personnel on a day-to-day basis to obtain desired results. Any safety effort must address the aviation and industrial aspects of safety. OPNAVINST 3750.6 specifies naval aviation mishap reporting procedures, and requires maintenance personnel to participate in investigating, reporting, and preventing ground mishaps. OPNAVINST 5100.23 and OPNAVINST 5100.19 contain safety pre-cautions that require implementation by maintenance personnel on assigned equipment and spaces. In addition, NAVAIR 00-80T-96 provides basic information for the safe and professional use of SE in the hazardous work environment of naval aviation. QA has been assigned the overall responsibility for Maintenance Department/Division safety.

6.1.10.6 Engineering and Technical Services (ETS)

All policies and procedures applicable to ETS are applicable to all organizations using COMNAVAIR-SYSCOM funds for the procurement and use of ETS. This includes such engineering and technical services as may be required to provide technical advice to DOD personnel in the maintenance, operation, and support of SE.

6.1.10.7 D-Level Maintenance

6.1.10.7.1 D-level maintenance policy, procedures, and responsibilities for SE are in NAVAIRINST 13680.1. Requirements for D-level rework and overhaul of end items of in-use SE are determined by the user, assigned a BCM Code, and submitted to SECA for approval and scheduling to the assigned FRC using the Support Equipment Rework Request (OPNAV 4790/80) (Figure 6-3). Requirements for D-level repair of in stock repairable SE are determined and scheduled by COMNAVAIRSYSCOM (AIR-6.7). D-level overhaul requirements are submitted by the SECA to COMNAVAIRSYSCOM annually for input to the Support Equipment Resources Management Information System (SERMIS) for planning, funding, and scheduling for the fiscal year. End items of SE requiring D-level maintenance that do not meet the SE rework program requirements as delineated in NAVAIRINST 13680.1 will be submitted for repair using the Depot Customer Service Program.

6.1.10.7.2 D-level rework for inducting SE end items into a D-level facility is a process where the requirements listed on the Support Equipment Rework Request (OPNAV 4790/80) are evaluated by an examination and evaluation function, disassembled as required, and repaired per applicable SE Rework Specification sections. This process is less than a complete overhaul. The complete overhaul process, when scheduled by the Support Equipment Rework Request (OPNAV 4790/80), is performed per the SE Rework Specification Overhaul sections. Normally, this allows for a full service tour of 24 to 36 months.

a. O-level activities should submit SE end items beyond their repair capability to the supporting I-level activity using a WO.

b. I-level activities must submit rework requests for items beyond their repair capability to their SECA on a Support Equipment Rework Request (OPNAV 4790/80) or via naval message per NAVAIRINST 13680.1.

c. All SE items accepted for D-level rework or overhaul scheduling will be listed on the SECA shipping schedule. SERMIS assigns the depot control number, planned induction date, and date the unit should arrive at the depot. The assigned depot control number must be entered on the Support Equipment Rework Request (OPNAV 4790/80) with all blocks completed prior to transfer to the depot. The form must be attached to the SE end item when shipped.

NOTE: FRCs will not induct any items received for rework or overhaul scheduling without a completed Support Equipment Rework Request (OPNAV 4790/80).

6.1.10.7.3 D-level Component Rework. IMAs and FRCs are assigned component screening and repair functions, to the extent of their capabilities. When a repairable SE component cannot be repaired by the IMA or FRC, it is sent to the designated rework point (DRP) via the Supply System for repair under the current MRIL.

6.1.10.7.4 D-level Calibration. All calibrations beyond the capability of I-level calibration activities shall be performed by D-level calibration laboratories. Calibration laboratories are listed in NAVAIR 17-35MTL-1.

6.1.10.8 Technical Data

Technical data for SE is issued in the form of technical manuals, TDs, and engineering drawings. The technical data required by each SE maintenance activity will be determined by the depth of repair being performed by the activity. There are two categories of SE TDs: Support Equipment Change (SECs) and Support Equipment Bulletin (SEBs), and support software changes/bulletins. For detailed TD Compliance Program management information, refer to NAVAIR 00-25-300, NA500C, and NAVICP Publication 2003 will provide an index of the letter type TDs that are applicable to SE. The electronic information bulletins are issued and controlled by the Naval Ships Engineering Center for their cognizant equipment.

6.1.10.9 Records, Forms, and Documents

6.1.10.9.1 Throughout the operational life of an end item of SE, many records, forms, and documents are generated for the support and management of that particular item. The following records, forms, and documents (which effect transfer of SE) are used to obtain and maintain the history of operation, maintenance, and configuration status:

a. Material Inspection and Receiving Report (DD 250). This form is used when a new item of SE is introduced into the Navy system and is originated by the manufacturer and is signed by the appropriate authorized government representative for inspection and acceptance. Copies of the Material Inspection and Receiving Report (DD 250) accompany end items to the destination, where they are used for local accounting.

b. Work Request Customer Service (OPNAV 4790/36A). This form is used to request work or assistance, from an FRC overhaul point, that is beyond the activity capability. Chapter 3 contains detailed information relative to the use and preparation of this form.

c. Support Equipment Rework Request (OPNAV 4790/80) (Figure 6-3). This form is used to request scheduling of end items of SE that are beyond the requesting IMA or FRC capability.

d. Aeronautical Equipment Service Record (OPNAV 4790/29). The AESR is a loose-leaf log contained within a separate cover and is used for selected items of SE.

6.1.10.9.2 Additional records, forms, and documents are addressed in paragraph 10.17.

6.1.10.10 Inventory Management

6.1.10.10.1 Effective inventory management of SE is a key part of the NAMP. To minimize the cost of providing the SE required to maintain aircraft airborne systems, effective management and accountability is mandatory.

6.1.10.10.2 In view of the value of the SE inventory and its essentiality in support of aircraft and airborne systems readiness, the following management programs were developed:

a. Aircraft Maintenance Material Readiness List (AMMRL) Program. The AMMRL Program is an inventory management and reporting system for SE at O-level, I-level, and D-level activities. The AMMRL Program is detailed in NAVAIRINST 13650.1. Further information about the AMMRL Program and its major products, the SERMIS and the IMRL, is in Chapter 3. The AMMRL Program uses MIS to record, store, and recall pre-established SE application data, which constitutes SERMIS, which is used to prepare the IMRL. The IMRL is an allowance list of all SE required to maintain an activity's aircraft and airborne systems. NAVAIRINST 13650.1 contains provisions for revising SE allowances in SERMIS and in an activity's IMRL. It also establishes an inventory reporting system and inventory reporting requirements for

SE. These reports provide the SECAs visibility for SE distribution and redistribution decisions, and the various inventory managers with data to justify procurement of additional SE.

b. Plant Equipment Management Application. This provides the management reports necessary for the effective inventory control of all plant equipment and SE that is required by D-level activities. These reports contain inventory, physical condition, and usage data for all plant equipment. In addition, the program serves as a basis from which COMNAVAIRSYSCOM plans and budgets for replacement of in-use equipment at the D-level.

6.1.10.11 Accountability

6.1.10.11.1 Accountable SE can be classified into one of the three major categories. Documents applicable to each of these categories contain criteria for determining items of equipment to be included. These documents also establish the reporting system to be used for each category. The first category is used primarily by maintenance managers; the other two categories are used primarily by supply managers.

6.1.10.11.2 A brief description of each category follows:

a. AMMRL Program SE. This category includes all aviation SE required by O-level, I-level, and D-level activities. It specifically includes all SE on an activity's IMRL. SE within this category will be managed under NAVAIRINST 13650.1 and SECA/COMNAVAIRSYSCOM implementing instructions.

b. Plant Property SE (Classes 3/4). DOD 7000.14-R contains examples of SE to be included and excluded in these categories. It also establishes the reporting system to be used for such equipment.

c. SE in the Supply System. This category includes those items of SE, regardless of condition, listed on the inventory records of the Supply System. Normally, this category will include those items of SE that have not been included in one of the previous categories. NAVSUP Publication 485 provides detailed information relative to this category of SE.

6.1.10.12 Survey Procedures

6.1.10.12.1 The purpose of a survey is to provide a record for the administrative review of the condition of accountable SE, the cause of the condition, responsibility, and a recommendation for disposition.

6.1.10.12.2 Survey procedures shall be instituted when an accountable item of SE meets one or more of the following conditions:

a. Beyond economical repair which resulted from damage, obsolescence, or deterioration.

b. Acknowledged as unavailable as a result of loss or theft.

6.1.10.12.3 Accountable SE is to be surveyed using NAVSUP Publication 1, NAVSUP Publication 485, and SECA/COMNAVAIRSYSCOM instructions. The survey shall be initiated and accomplished by using the Financial Liability Investigation of Property Loss (DD 200). TEC and SERNO of the SE shall be included on the survey form.

6.1.10.12.4 Upon approval of the Financial Liability Investigation of Property Loss (DD 200), an SE Transaction Report (OPNAV 4790/64) must be submitted on all IMRL reportable items showing the loss from the activity's inventory equipment.

6.2 Work Center Supervisor

6.2.1 Introduction

6.2.1.1 If successful accomplishment of assigned tasks could be attributed to any one group of personnel, it would be the Work Center Supervisors. Diligent supervision at the work center level includes rigidly adhering to the procedures and policies established by this instruction. To ensure the accomplishment of all assigned work, maximum efficiency must be obtained and maintained in the use of manpower, material, and facilities.

NOTE: To meet the above requirement, all OMA level Work Center Supervisors shall complete the Naval Aviation OMA Work Center Supervisor's course (Course C-555-0045). All OMA level work center personnel aboard less than 90 days should attend the Naval Aviation Organizational Maintenance Activity Basic Documentation and Functional Training course (Optimized) (Course C-555-0047). IMA/FRC and MALS Work Center Supervisors will complete the IMA Work Center Management Documentation Procedures (Optimized) course (Course C-555-0041) except IMA/FRC and MALS Power Plant Supervisors.

6.2.1.2 The primary job of the Work Center Supervisor is to be responsive to the hour by hour maintenance situation. This requires constant communications between the work center, and Maintenance Control or Production Control. The Work Center Supervisor shall:

6.2.1.2.1 Keep Maintenance Control or Production Control constantly notified of the following:

a. Aircraft and parts status.

b. Bench and test equipment status.

c. Availability of skills (personnel).

d. A change in status of assigned maintenance, for example, in work to awaiting maintenance (AWM), or in work to awaiting parts (AWP).

e. Anything that may affect the ability of the work center to maintain the systems assigned.

6.2.1.2.2 Verify workload priority assignments outlined in Chapter 5 are understood and followed by work center personnel (I-level).

6.2.1.2.3 Complete BMT training with the AIRSpeed Officer within 30 days of assignment to become familiar with the functions and report options available in the BMT (I-level).

6.2.1.2.4 Use BMT reports to control daily workload and assign priorities to ensure efficient movement of components through the work center (I-level).

6.2.1.3 I-Level Work Center Procedures

6.2.1.3.1 The work center receives VIDS/MAF copies 1, 4, and 5 with the NRFI component. Copies 1 and 4 remain with the inducted component throughout the maintenance cycle while copy 5 is retained by the work center. . Any status changes must be reported to Production Control and appropriate entries made on copies 1, 4, and 5. The component is packaged and preserved for shipment to the AWP unit (or equivalent) per Chapter 3. VIDS/MAF copies 1 and 4 are sent with the component. Copy 5's status is updated to AWP and Production Control is notified. When all corrective actions have been completed and the component is in an RFI condition or determined to be in a BCM condition, make the required entries, including the date, on all VIDS/MAF copies. Notify Production Control and QA, if required. Attach the appropriate Material

Condition Tag, Serviceable Tag - Material (DD 1574) (Figure 6-4) or Unserviceable (Reparable) Tag - Material (DD 1577-2) (Figure 6-5) to the component inside the shipping container and leave it attached until the component is used or destroyed. BCM components will have the TEC and JCN written in the attached Unserviceable (Reparable) Tag - Material (DD 1577-2) Remarks block. Place VIDS/MAF copy 5 in the temporary file pending verification against the daily MDR.

6.2.1.3.2 The supervisor's signature signifies completion of the maintenance action, verification that tool control inventories were conducted at proper intervals, QA procedures were followed, and documentation is correct.

6.2.1.3.3 After verifying the Work Center copy 5 with the VIDS/MAF copy 1 daily audit report (DAR), copy 5 may be destroyed.

6.2.1.3.4 Complete details for documentation of the VIDS/MAF are in Chapter 16.

6.2.1.4 Support Equipment (SE) Procedures

6.2.1.4.1 SE encompasses both shop installed SE or uninstalled SE including test sets and benches, run-up stands, diagnostic equipment, TMDE, and equipment used to maintain aircraft, aircraft components, or SE, such as drill presses, lathes, grinders, sewing machines, or welders. SE items are identified by D, G, H, and S series TECs. SEGTEs are identified by P series TECs.

6.2.1.4.2 MAF flow within the Weapons Department for on equipment maintenance of armament weapons. The use of SE end items documented on a VIDS/MAF may vary, because several maintenance functions at an I-level activity may be combined into one maintenance function in the Weapons Department. For example, Production Control, Work Center, and Material Control could exist as a single point in the organization.

6.2.1.5 Material Requisitioning

6.2.1.5.1 The Work Center Supervisor will verify work center personnel know the procedures for ordering parts to repair WRAs and SRAs.

6.2.1.5.2 When a part is required, the work center notifies Maintenance Control or Production Control and obtains the project code and supply priority from Maintenance Control or Production Control for ordering.

6.2.1.5.3 The following information is annotated by the work center in the (H-Z) Failed/Required Material blocks of the MAF or WO. The MAF or WO copies 1 and 4 are then forwarded to Material Control.

a. Manufacturer's code (CAGE code).

b. Part number.

c. Quantity required.

d. Project code.

e. Priority.

6.2.1.5.4 Upon receipt of the MAF or WO, Material Control enters a Julian date in block 45, assigns a requisition number in block 49, and requisitions the material.

6.2.1.5.5 At I-level activities, if the item is not available within 24 hours or on an not in stock (NIS) or not carried (NC) notification status is received, WRAs or SRAs will be delivered to the AWP unit, along with

VIDS/MAF copies 1 and 4. Copy 5 is retained by the work centers and Production Control is notified of the status change and given the document number.

a. If a repairable SRA is requisitioned, the document number issued by Material Control becomes the turn-in document number on the MAF or WO initiated by the work center for the SRA. Production Control issues a suffix JCN from the original JCN and the work center packages and preserves the SRA for induction into the repair activity having cognizance.

b. When all parts ordered to repair the component on the original MAF or WO have been received, the component and parts are delivered to the work center.

c. A component may go through the AWM, In-Work, and AWP process many times before being RFI or it is determined the item must be shipped to another activity for repair. If so, ensure the above steps are taken each time the status of the component changes.

6.2.1.5.6 When the decision is made to reinduct the WRA for BCM-4 action, the following steps are taken:

a. Notify Production Control of the status change from AWP to In-Work.

b. Ensure all SRAs are installed and secured.

c. Preserve for off-station processing.

d. Complete MAF OR WO documentation and notify Production Control of the status change from In-Work to BCM-4.

6.2.2 Individual Material Readiness List (IMRL)

6.2.2.1 The IMRL Program is designed to ensure required SE is available in the activity, similar D-level work unit, or team. This is done by continuously monitoring and updating a master IMRL of all SE assigned to the work center. In support of the IMRL Program, Work Center Supervisors shall:

6.2.2.1.1 Review appropriate maintenance technical manuals to compare the work center's master IMRL with the SE listed in the maintenance technical manuals to ensure the proper SE is available. If this review shows a required item of SE or suitable alternate is not available or listed on the IMRL, but is a valid requirement, the Work Center Supervisor shall initiate an IMRL change request to obtain the item of SE.

6.2.2.1.2 Notify the IMRL Manager of any deletions, additions, or corrections to the IMRL to ensure the required equipment is on hand to perform assigned tasks.

6.2.2.1.3 Assist the IMRL Manager with the annual wall-to-wall inventory and other inventories as directed.

6.2.2.1.4 Initiate surveys on any IMRL item which is lost or no longer serviceable using Chapter 3.

6.2.2.1.5 Be directly responsible for ensuring IMRL items assigned to the work center are complete, functional, and all work center personnel are completely familiar with the application and use of the equipment.

6.2.2.2 Additional information on the IMRL Program is in Chapter 3 and NAVAIRINST 13650.1.

6.2.3 Quality Assurance (QA) in the Work Center

6.2.3.1 Under certain conditions, CDQARs may be assigned to work centers or production divisions. When this is the case, they function in the same capacity as QARs who are assigned to QA.

6.2.3.2 CDIs are personnel permanently assigned to a production or fleet readiness aviation maintenance personnel work center and have a collateral duty for inspecting work done by the work center. The importance of this responsibility cannot be over emphasized; therefore, careful screening of candidates for CDI designation is imperative.

6.2.3.3 Complete QAR, CDQAR, CDI, and QA details are in Chapter 7.

6.2.3.4 If operating NALCOMIS OMA or IMA/FRC, it is the Work Center Supervisor's responsibility to ensure assigned personnel have appropriate special maintenance qualification (SMQs).

6.2.4 Maintenance Department/Division Safety

6.2.4.1 The Work Center Supervisor is responsible for assisting QA in implementing Maintenance Department and Division safety. The Work Center Supervisor shall:

6.2.4.1.1 Verify Maintenance Department and Division Safety indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-3) in the individual's qualification/certification record or ASM record.

6.2.4.1.2 Display safety posters and maintain safety literature.

6.2.4.1.3 Report all accidents and unsafe practices in the department.

6.2.4.1.4 Conduct safety training within the work center.

6.2.4.1.5 Participate in safety surveys and safety standdowns within the activity.

6.2.4.1.6 Use and promote practices which enhance safety while instilling proper regard for safety considerations in supervised personnel.

6.2.4.1.7 Verify personnel are currently qualified in Egress/Explosive System safety per paragraph 10.15.

6.2.4.1.8 Verify personnel involved with handling and servicing of batteries conduct safety training in the hazards of handling batteries, for example, lifting, packaging, repairing, or charging. Requirements for lead-acid and nickel-cadmium battery safety are in NAVAIR 17-15BAD-1. Requirements for lithium battery safety are in NAVSEA S9310-AQ-SAF-010.

6.2.4.2 Complete details on Maintenance Department and Division safety are in Chapter 7.

6.2.5 Preservation, Packaging, and Handling

All aeronautical material, regardless of its status, RFI or NRFI, shall be preserved, packaged, and handled by supply and maintenance personnel in such a manner as to prevent damage or deterioration. The P700-CNP Web site (https://tarp.navsisa.navy.mil/p700.nsf) provides preservation and packaging requirements for specific repairable components.

6.2.6 Assigning Collateral Duties

6.2.6.1 Work Center Supervisors, with the Division Officer's approval, shall appoint collateral duty petty officers or NCOs to handle some of the more routine but time consuming tasks assigned to the supervisor. This allows more time to devote to their primary duty of supervising personnel. This does not relieve them of the responsibility of ensuring the tasks are properly completed.

6.2.6.2 The Work Center Supervisor shall prepare a billet description describing each collateral duty assigned to an individual. The billet description shall be signed by the individual and the Work Center Supervisor making the assignment. Activities using ASM shall generate billet descriptions in ASM.

6.2.7 Obtaining and Updating Publications

The Work Center Supervisor is responsible for ensuring all required publications are current and available to the work center. Requests for changes to the work centers technical publications allowance are made through the Central Technical Publications Library (CTPL) in QA.

6.2.8 Pre-Expended Bin (PEB)

6.2.8.1 High usage piece parts are available in the PEB. The Work Center Supervisor shall be familiar with PEB operations. Although stocking of PEBs at the I-level is the responsibility of ASD (Consumable Management Division for Marine Corps activities) and the Work Center Supervisor at O-level, the inputs for stocking originate at the work center. The ASD or Consumable Management Division (as applicable) will stock only those items, which among other things show a high usage.

6.2.8.2 To ensure required parts are stocked in the PEB, the Work Center Supervisor shall:

a. Verify all piece parts usage is properly accounted for. Document usage in the H through Z blocks of the MAF OR WO (if applicable).

b. Verify parts stocked in the PEB are promptly reordered by ASD per local procedures.

c. Verify monthly review of the work center's PEB requirements and compare them against actual PEB stocking levels.

6.2.9 Support Equipment (SE) Misuse/Abuse

6.2.9.1 The Work Center Supervisor:

6.2.9.1.1 SE Misuse/Abuse indoctrination and follow-on training are provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record or ASM record.

6.2.9.1.2 All personnel issued SE licenses are familiar with equipment operating procedures and are aware of the value and importance of SE to the support of operations.

6.2.9.2 Anyone witnessing SE misuse/abuse may submit reports per Chapter 7.

6.2.10 Additional Responsibilities

Additional responsibilities are identified in the NAMPSOP maintenance programs detailed in Chapter 10.

6.3 Maintenance Training

6.3.1 Introduction

6.3.1.1 Aviation maintenance training (AMT) includes both formal training and In-Service training (IST). Formal training is any training with an approved course curriculum. It includes A and C schools, FRCs, CNATT, and Fleet Training Center courses, and may or may not produce an NEC or MOS. Maintenance personnel receive specific weapon system training conducted by CNATTUs or CNATTMARUs using approved syllabi required by OPNAVINST 1540.2. Courses are provided in familiarization, operation, and

maintenance of the specific system or equipment required to be maintained. Practical training is coordinated to reinforce classroom instruction.

6.3.1.2 Training tracks depict all elements of the total requirement. The CNATTU or CNATTMARU manages the progress of the individual trainee through the training track. Training tracks are divided into phases:

a. Phase I – Introduction (CNATT Validate)

b. Phase II – CNATTUs or CNATTMARUs Courses.

c. Phase III – Enlisted Aircrew Flight Training. (To minimize time in the pipeline, only phases II and III are required to be sequential).

6.3.1.3 Funding

6.3.1.3.1 Enroute training is defined as training received prior to reporting to one's ultimate duty station or activity and is primarily funded by BUPERS. Aviation maintenance training, other than enroute, that requires expenditure of TAD and travel funds must be requested per type/functional commander directives and the catalog of navy training courses (CANTRAC). Initial training for new acquisition or equipment modification resulting in major configuration is funded by COMNAVAIRSYSCOM. TAD and travel cost may be funded by the ACC or TYCOM or BUPERS with modifications to TAD requested via the appropriate chain of command.

6.3.1.3.2 Marine Corps aviation maintenance training, which requires expenditures of TAD and travel funds, is requested per Commandant of the Marine Corps (CMC) or Commanding General, Marine Corps Combat Development Command (CG MCCDC) directives and the CANTRAC. Initial training, including associated TAD and travel costs may be funded by Headquarters, U.S. Marine Corps and should be requested prior to obligation of operational target (OPTAR) funds.

6.3.1.4 The AMT Program uses training model managers to provide systematic review and evaluation of all phases of instruction for assigned weapon systems. The training model manager collects and evaluates all proposed changes to training requirements, curricula, and syllabi, coordinating with appropriate trainer and user activities and forwards recommended changes to CNO via TYCOM and CNATT.

6.3.1.5 IST is training conducted by fleet activities to complement formal training and increase professional safety, technical knowledge and proficiency. Lectures, interactive multimedia instruction (IMI), videotapes, films, PQS, required reading, and OJT are integral components and must be coordinated to satisfy each individual person's activities particular requirements.

6.3.1.6 AMTCS is a concept that uses technology infusion to standardize tracking, monitoring, and management of all training (formal and IST) into an integrated, cohesive "cradle-to-grave" system.

6.3.1.7 ASM is the software application module that supports AMTCS in the schoolhouse and the fleet. It is a software application designed to:

a. Identify individual and group job requirements using task list.

b. Automatically track OJT through NALCOMIS.

c. Document qualifications and certifications progress with Electronic Certification Record.

d. Test knowledge through a Test and Evaluation module.

e. Provide feedback to assist management and monitoring of the system. Refer to paragraph 6.3.8 for specific ASM purpose, policy, and responsibilities.

NOTE: Organizations implemented with ASM, paper OJT syllabus is no longer required.

6.3.1.8 The ITSS and MATMEP is a standardized, documental, level progressive, technical skills training management and evaluation program for Marine Corps enlisted aviation MOSs. MATMEP identifies tasks, skills, and knowledge requirements of each MOS. It incorporates an ASM test so a complete evaluation can be made of the individuals "hands-on" performance capability and technical knowledge. Detailed information regarding ITSS and MATMEP procedures, policy, and responsibilities can be found in MCO P4790.20.

6.3.1.9 The Reserve job qualifications requirement program creates and implements standardize OJT syllabi satisfying training requirements for OJT awardable NECs for aviation selected reservists as defined in NAVPERS 18068F, Volume II.

6.3.1.10 The PQS program is a compilation of written requirements for a specific watch station or unit team member. PQS is in the format of specification guide and contains questions pertaining to a specific task. Further detailed information regarding PQS procedures can be found in the NAVEDTRA 43100-1G and OPNAVINST 3500.34.

6.3.2 Training Policy

6.3.2.1 Formal Training is any training with an approved course curriculum. It includes A and C schools, FRCs, CNATT, and Fleet Training Center courses, and may or may not produce an NEC or MOS. Maintenance personnel receive specific weapon system training conducted by CNATTUs and CNATTMRUs using approved syllabi required by OPNAVINST 1540.2.

6.3.2.2 The Maintenance Training Program is designed to ensure basic, intermediate, and advanced levels of training are provided to all maintenance personnel to support existing, planned, and future weapon system acquisitions. Additionally, it is applicable to equipment in support of aviation meteorological and photographic equipment, air launched weapons, missile targets, and aeronautical equipment. Training is provided to all DON personnel to operate, maintain, and support aircraft weapon systems and related equipment.

NOTE: No training course should impact current operational commitments, unless specified by higher authority.

6.3.3 Command Relationships

Command relationships are based on lines of authority existing between various echelons as well as the administrative and support responsibilities assigned to different activities. Multiple command echelons are involved in training aviation maintenance personnel and liaison is maintained across all levels of command. Figure 6-6 shows command lines (solid) and administrative, support, and liaison lines (broken) to assist in understanding command relationships.

6.3.4 Command Responsibilities

6.3.4.1 The CNO is responsible for the training of naval personnel and for directing the various commands and offices in providing resources required to implement the training program.

a. Director of Navy Training/NETC (N1) shall:

(1) Develop the Navy's overall policy standards and procedures for training and provide curriculum development standards and training for naval personnel pertaining to curriculum development and formal classroom instruction.

(2) Provide standards for review and acceptance of all new curricular products resulting from the weapons system acquisition process (including training devices) for use in NETC schools.

(3) Provide necessary planning, programming, and budgeting for manpower and training resources, including facilities, to support assigned training requirements.

(4) Coordinate and direct recruit and specialized training.

(5) Ensure training provided by Technical Training Centers, CNATTU or CNATTMARU and correspondence courses is responsive to Fleet Commanders, ACCs or TYCOMs and the Naval Air Force Reserve.

b. Naval Personnel Development Command (NPDC) shall be responsible for providing necessary planning, programming and budgeting for manpower and training resources to support fleet training requirements.

c. CNATT shall be responsible for:

(1) The establishment of policy and priorities for aviation training and the development of aviation training plans to meet fleet requirements.

(2) The supervision and direction of aviation training, including formal technical "A" school training: airman apprentices school; the programming of aviation training resource requirements, including training manpower; and approval or disapproval of CNATTU or CNATTMARU course establishment, disestablishment and revision.

(3) The establishment of NATT COA at the O-6 level and chaired by the CO of CNATT. This COA is responsible for the development of long-term strategic plans for aviation technical training.

(4) The establishment of a Training Continuum Management Board, at the middle management level, and chaired by the Executive Director of CNATT. This Training Continuum Management Board is responsible for aviation maintenance training issues as assigned by the NATT COA.

6.3.4.2 CMC is responsible for the training of Marine Corps personnel and providing resources required to support Marine Corps training at CNATTMARU and to implement the training program.

a. CG MCCDC shall coordinate Marine Corps aviation training requirements and represent CMC on all training matters.

b. The Enlisted Aviation Maintenance Trainee Management Unit shall:

(1) Supervise and coordinate aviation MOS producing technical and management training programs for Marine Corps personnel.

(2) Supervise and exercise quota control authority for all training conducted at Marine Corps training sites and CNATTMARUs requested by and for cognizant Navy, Marine Corps, foreign national, and other personnel as necessary. (CANTRAC Volume I provide specific details).

6.3.4.3 The Director, Air Warfare Division (N98), is responsible for the establishment of policy, requirements and priorities for aviation training and development of aviation training plans.

6.3.4.4 BUPERS shall:

a. Participate in personnel and training planning, in the development and review of NTSPs, and in meeting personnel inventory and skills requirements to support introduction of new acquisitions.

b. Perform occupational task analysis as specified by CNO in support of new systems and aviation training requirements.

c. Manage the aviation community ratings and develop the annual "A" and "C" school training plans (OPNAVINST 1500.76).

d. Participate in the Training Requirements Review (TRR) in an advisory position.

6.3.4.5 COMNAVAIRSYSCOM shall:

a. Perform research, design development, test, acquisition, and logistic support of all aviation procurements relating to Navy and Marine Corps aircraft, missiles, targets, associated material, and equipment.

b. Initiate development of recommended NTSPs for new weapon systems and components requiring establishment of in-house Navy training per OPNAVINST 1500.76. In concert with CNATT and the fleet, periodically review existing NTSPs for currency and adequacy.

c. Initiate action for development, procurement, installation, maintenance, and repair of equipment required in support of aviation training programs.

d. Initiate appropriate FEA and use instructional system design process (as required) for training system development and revision.

e. Review existing training programs and curricula for technical adequacy and availability of suitable training equipment.

f. Provide for factory and other specialized contract training and arrange for Inter-Service training where required.

g. Provide maintenance and logistics support of maintenance trainers, including dedicated aviation SE, required by CNATTU or CNATTMARU departments to conduct practical job training (PJT).

h. Plan, program, and budget for all training logistics items related to new acquisitions and major modifications.

i. Provide recommendations to improve aviation maintenance training and maintain and develop NTSPs. Conduct analysis (as required) to determine alternatives for improving training effectiveness and efficiencies.

6.3.4.6 COMNAVAIRFOR shall:

a. Supervise, coordinate, and direct internal aviation technical training and training management programs for assigned squadrons and units.

b. Monitor quota control assignment for all training conducted at Navy CNATTU or CNATTMARU that is requested by and for cognizant Navy, Marine Corps, foreign national and other personnel as necessary. (CANTRAC Volume I for specific details.)

c. Assist (as applicable) in the efforts of the CNATT in administering the AMT Program.

d. Conduct reviews of new/revised training curricula (as applicable).

e. Establish, coordinate, and direct administration of in-service training via ASM.

f. Provide coordination and assistance to CNATT in the management of ASM.

g. Coordinate formal training of enlisted maintenance personnel conducted by FRCs.

h. Provide on-site training and management assistance to all Navy and Marine Corps aviation units through the AMMTs.

6.3.4.7 NAVSAFECEN shall provide technical assistance through reviews of training equipment, curricula, and training devices for safety related issues where inadequate training could result in excessive risk.

6.3.5 General Training

6.3.5.1 This section defines the training sequence for aviation maintenance personnel. It covers the required training for specific job requirements on aeronautical weapon systems and associated SE.

6.3.5.2 Maintenance training is a continuum throughout an individual's career which begins with entry into service and continues through various training courses, including PJT where feasible, with eventual assignment to a particular job. The technical knowledge and skills required to perform in the assigned job determine course requirements.

6.3.5.3 Training is accomplished in a sequential process with basic courses providing requisites for following courses. Most aviation personnel receive initial training enroute to their first duty station. Those who do not attend Class "A" school receive airman apprentice training following completion of recruit training and report directly to their ultimate duty station.

6.3.5.4 Formal classroom training is enhanced by the practical application of learned skills in a structured environment. In the AMT Program, CNATTU or CNATTMARU provides specific formal classroom and laboratory instruction as well as reinforcement on specific aeronautical weapon systems or equipment.

6.3.5.5 Close liaison is established between the CNATTU training coordinator and the ultimate duty station for enroute trainees to ensure the correct training is given for the billet to be filled. Standard billet training requirements are provided by the CNATTU, with revised or exceptional requirements met on an as needed basis. The CNATTU training coordinator reviews the BUPERS Orders 1326 Standard Transfer Directive and sends a report of planned training to the member's ultimate duty station. The squadron or unit reviews the report to ensure planned training is consistent with requirements and the unit's AMD. Concurrence and recommended changes are then immediately provided to the CNATTU, ensuring a carefully controlled training program, tailored to meet fleet requirements.

6.3.6 Navy Training Schools

6.3.6.1 Types of Training provided by NETC:

The NETC conducts training for officers and enlisted personnel in basic, technical, and specialized areas as follows:

a. Class A - Basic knowledge and skills required for entry level performance. NEC or MOS not normally awarded.

b. Class C - Advanced knowledge and skills required to fill a billet coded with an NEC or MOS. Awards NEC or MOS.

c. Class D - Professional CNO mandated or nonpipeline refresher training. NEC not normally awarded.

d. Class F - Individual functional skill training required by fleet, ACC, or TYCOM. No NEC awarded.

e. Class G - Segment course of an NEC or MOS producing pipeline. Does not, by itself, award an NEC or MOS and may be attended outside the entire pipeline.

f. Class R - Training upon initial enlistment or induction which provides general indoctrination and prepares the recruit for early adjustment to military life by providing skill and knowledge in basic military subjects.

g. Class T - Team training to fleet personnel, officers and enlisted, enroute to duty as members of ship's company. No NEC is awarded.

6.3.6.2 CENNAVAVNTECHTRA (CNATT)

This command, with its units and detachments under NPDC, provides training for officers and enlisted personnel in the operation, maintenance, and repair of aeronautical weapon systems and associated equipment using lectures, computer aided instruction, maintenance trainers, and PJT. These trainers are instructional units, which provide training support for a weapon system, specific equipment, groups of related equipment, or specialized techniques. Courses cover operational and tactical employment of specific equipment and systems and aviation maintenance administration and management. This training is provided through the CNATTU or CNATTMARU.

a. Navy Integrated Training Resources and Administration System (NITRAS) is an automated system designed to be responsive to demands for training information by NETC and other commands. Additionally, it provides direct supportive data for BUPERS, and the Navy Recruiting Command. NITRAS files provide functional commanders and the training activities with an automated capability to manage and support the Navy training effort. NETC is responsible for management and operation of NITRAS, per NETCINST 1510.1. All Navy training, with the exception of Phase I SE training for license, regardless of location and basis (formal or contractor) must be recorded in NITRAS per OPNAVINST 1510.10.

b. Standard Training Activity Support System (STASS) is a computerized system used to facilitate management of the CNATTU or CNATTMARU training program. STASS provides student scheduling into various courses, generates student reports, performs diagnostic testing and grading and maintains individual and unit statistical data. Test generation and administration will migrate to ASM test and evaluation upon implementation.

6.3.6.3 Fleet Anti-submarine Warfare Training Center

This school instructs fleet personnel in operational and tactical employment as well as maintenance of specific equipment and systems.

6.3.6.4 Depot FRCs

Conduct courses required by fleet and shore activities. Most courses are of short duration and emphasize troubleshooting, alignment, specialized training, and bench work on various accessories and components.

6.3.6.5 Aviation Maintenance Officer (AMO) Schools

a. Naval Aviation Maintenance Program Indoctrination course (Course C-4D-2012) is a course of instruction for newly commissioned or newly designated Navy and Marine Corps aviation ground officers. The course provides the essential prerequisites for initial assignment to a maintenance billet. Topics include basic qualifications in management principles and techniques, general aircraft systems and equipment, aviation supply fundamentals, maintenance and material control procedures, aviation safety records and reports, information systems and data processing principles, NDI familiarization, and the fundamental elements of the NAMP.

b. Naval Aviation Maintenance Program Management course (Course C-4D-2013). This course provides instruction for officers and senior enlisted (E-7 and above) of the Navy and Marine Corps with NAMP information and knowledge of the managerial responsibilities required to direct an aircraft maintenance activity, while reinforcing the use of publications and directives applicable to aviation maintenance management.

6.3.6.6 Aviation Ordnance Officer Career Progression Training

This training is designed to provide career progression training to establish a training path for aviation ordnance officers and is available to senior enlisted Aviation Ordnancemen (Navy E-7 through E-9, and Marine Corps E-8 through E-9 MOS 6591). Training is conducted in three levels, commencing immediately following officer accession and culminating with specialized training commensurate with the increased levels of responsibility and authority associated with career progression.

a. Aviation Ordnance Officer Career Progression Level 1 course (Course C-4E-0010). This course provides training for newly designated aviation ordnance officers and senior enlisted. The course provides the essential prerequisites for initial assignment to an aviation ordnance officer billet. Topics include introduction to NOMP, approved basic stock level of ammunition, ammunition accounting, ordnance administration, air launched missiles, conventional ordnance, aircraft armament equipment, AWSE, aircraft guns, UAS, safety, weapons handling, and storage afloat and ashore.

b. Aviation Ordnance Officer Career Progression Training Level 2 course (Course C-4E-0011). This course provides mid-level training for all aviation ordnance officers in the management of weapons in IMA and FRC, engineering and weapons departments, ordnance, maintenance, and supply relationships, ordnance operations, inspections and investigations, and weapons safety programs.

c. Aviation Ordnance Officer Career Progression Training Level 3 course (Course C-4E-0012). This course provides top-level training for senior aviation ordnance limited duty and warrant officers in non-nuclear expendable ordnance management responsibilities, ordnance fair-share distribution policy, weapons development and relationships, and the structure and functions of echelons one and two of the DON.

6.3.6.7 Joint Aviation Supply and Maintenance Material Management (JASMMM)

This course is provided for senior enlisted, officer, and civilian personnel in supply, maintenance, and operating communities. The primary goal is to foster a spirit of cooperation between Maintenance and Supply personnel while developing and reinforcing aviation support related supervisory, technical, and management skills. The course is offered by the Navy Supply Corps School, Newport, RI.

6.3.7 Inter-Service Training

6.3.7.1 DOD and other services conduct schools and courses available to Navy personnel. When training offered within the DOD is sufficiently compatible, it shall be used in lieu of initial training per OPNAVINST 1500.27. If no other source of training is available, requests for initial training shall be submitted to the ACC

or TYCOM for approval, since funding is required. If no such training is currently available, the ACC or TYCOM shall review and consolidate requests and forward to COMNAVAIRSYSCOM for contract negotiation as required. Requests for Inter-Service training shall be forwarded to CNATT via the ACC or TYCOM with a copy to COMNAVAIRSYSCOM.

6.3.7.2 The Inter-Service Training Review Organization is an informal agency within DOD designed to improve the effectiveness and efficiency of education and training through cooperative efforts among the services. It is directed through a structure of boards, committees, subcommittees, and task groups with representatives from each military service. The regulatory foundation for the Inter-Service Training Review process is a joint regulation, OPNAVINST 1500.27, entitled Schools: Inter-Service Training. The joint regulation established policies, responsibilities, and procedures for the review of DOD education and training activities to improve their effectiveness and efficiency. This responsibility also applies to consolidated and collocated courses, inter-Service resident and nonresident training, quota courses, and to the exchange and development of education and training resources, research data, and training technology.

6.3.7.3 The Training and Education Committee is responsible for procedures, studies, and projects in the areas of skills training, education, and flight training. Under the Training and Education Committee, the Skill Training Subcommittee has, as its purpose, the examination of selected officer and enlisted occupational courses and disciplines for consolidation or collocation potential. It is responsible for curriculum design and development, restructuring, standardization, course combinations, and the documentation and completion of all three phases of study leading to joint service consolidation or collocation. The phases of study consist of curriculum and facilities review, cost analysis, and implementation plan. The study will terminate or proceed to the next phase depending on each phase's outcome.

6.3.7.4 Contractor plant services and contractor field services training. This training is provided by COMNAVAIRSYSCOM on new weapon systems being introduced to the fleet. A nucleus of personnel is trained by the contractor either at the contractor's facility or on site. The type of personnel ordered to this specialized training program must be of the highest caliber and capable of instructing other personnel upon completion of the training.

6.3.8 Aviation Maintenance Training Continuum System (AMTCS) - Software Modules

6.3.8.1 Purpose

ASM is an unclassified training management tool that supports AMTCS in the schoolhouse and the fleet as depicted in Figure 6-7. It is a software application designed for AMTCS to identify job task requirements, assist in determining proficiencies, document qualifications, certifications, track completed training, and tests the knowledge of all Navy and Marine Corps aviation maintenance personnel. It also provides feedback to management.

6.3.8.2 Policy

OPNAV, the Director of Air Warfare (N98), as program sponsor, shall provide overall program direction. The following policies are applicable:

a. ASM, a training management system, shall be implemented as directed by TCMB using inputs from ACCs and TYCOMs.

b. Life-cycle support for the application program and associated hardware and software will be provided through COMNAVAIRSYSCOM (PMA-205).

c. Standardized procedures will be developed by OPNAV (N980T) in cooperation with the ACC and TYCOM to the maximum extent consistent with organizational requirements and capabilities.

d. Final skill qualification remains with the activity. Minimum skill certification requirements will be established by the appropriate Type Wing Commander to meet safety requirements.

6.3.8.3 Responsibilities

a. OPNAV, the Director of Air Warfare (N98) shall:

(1) Establish policy and exercise overall support for the AMTCS Software Modules.

(2) Program aviation training resources requirements.

(3) Identify and plan manpower requirements.

b. COMNAVAIRSYSCOM, through the Aviation Training Systems Program Office (PMA-205), shall:

(1) Provide program management and oversight for OPNAV sponsored training activities.

(2) Develop, implement, and support ASM software and hardware requirements and training materials.

(3) Provide technical assistance, advice, and liaison as requested or required.

(4) Perform annual assessments of ASM hardware and software.

(5) Coordinate through CNATT to ensure compliance with integrated learning environment (ILE) guidelines and educational requirements for IMI standards and conventions pertaining to all naval aviation training programs.

(6) Maintain, distribute, and provide life-cycle support for each legacy weapon system MTL data bank.

(7) Establish an Advanced Skills Management (ASM) Configuration Control Board to maintain control of the ASM baseline through the application of configuration management. The Configuration Control Board will operate per NAVAIRINST 4130.1 and PMA-205 CM Plan and stay within the guidelines of the NAMP Policy.

c. ACCs and TYCOMs shall:

(1) Monitor implementation and (if applicable) issue directives, provide guidance, and ensure that adequate planning and support are in place for the ASM fielding.

(2) Identify ASM software and hardware functional requirements and data usage.

(3) Establish, coordinate, and direct administration of ASM implementation to ensure clear definition of lower echelon requirements.

(4) Provide coordination and assistance to Naval Undersea Warfare Center DET KEYWEST in the management of the master task list (MTL) and QPT PQS data bank development to ensure clear definition of training requirements.

(5) Maintain liaison for planning, development, maintenance, and validation of MTL materials.

(6) In conjunction with CNATT, standardize and coordinate functional parameters, report requirements, and data usage of ASM.

(7) Ensure training support materials for ASM administrators and users are available.

d. CENNAVAVNTECHTRA shall:

(1) In conjunction with ACCs and TYCOMs, standardize and coordinate ASM software and hardware functional parameters, report requirements, and data usage.

(2) Develop, maintain, distribute, and provide life-cycle support for each weapon system MTL data bank.

(3) Maintain close liaison and coordination between ACC, TYCOM, and Type Wing AMTCS coordinators.

(4) Provide formal training for ASM administrators, supervisors, and users.

6.3.9 Aviation Maintenance Management Teams (AMMT)

The AMMTs are managed by the ACCs/TYCOMs to evaluate performance and to advise, train, and assist fleet activities in improving their performance in aviation maintenance procedures, logistics support, and personnel usage. The teams visit both Navy and Marine Corps activities and are available to assist with special problems as required.

6.3.10 Engineering and Technical Services (ETS)

6.3.10.1 ETS consist of information, instruction, and training provided to DOD personnel ashore and afloat in the installation, maintenance, repair, and operation of aircraft weapons systems and related SE. NAVAIRWARCENWPNDIV Point Mugu, CA, provides similar ETS for aviation ordnance personnel. Services are planned, managed, and provided by Naval Aviation Technical Data and Engineering Service Command (NATEC) (Code 6.7) San Diego, CA. Services are performed by NETS personnel, who are organic Navy personnel (military and civilian), and CETS, who are commercial or industrial contractor personnel. NATEC detachments located at various worldwide sites can provide information on NATEC technical expertise available to support user requirements.

6.3.10.2 ETS is a logistics element required to:

a. Accomplish the initial transfer of knowledge from equipment manufacturer to organic Navy during equipment introduction.

b. Provide OJT and technical assistance.

c. Provide assistance for resolution of unusual or difficult maintenance problems.

d. Maintain technical information channels and liaison between the FST and the Navy.

6.3.10.3 ETS will be used primarily to complement CENNAVAVNTECHTRAU/CNATTMARU and shore-based turnaround training. They are not intended to be a corrective measure for inadequate ILS planning, funding, or execution. Use of ETS aboard ship during routine CV and CVN work-up training periods and short term assists is an ACC and TYCOM management option. Normally, ETS will not be embarked for extended deployment.

6.3.10.4 In those instances where actual, unavoidable logistics or personnel training deficiencies exist, ACCs/TYCOMs may continue to deploy ETS on a limited basis. Such support will be handled on a case by case basis where that option is the most logical cost effective alternative. Use will be closely controlled, limited to finite periods, and kept to an absolute and justifiable minimum. In each case, the logistic

deficiency or training objective necessitating the use of embarked ETS must be identified to the ACC/TYCOM and NATEC (Code 6.7) by the requesting activity.

6.3.10.5 Funding for ETS support is a COMNAVAIRSYSCOM responsibility. It requires extensive planning, programming, and budgeting actions be taken early in the acquisition process for new aircraft and weapon systems and for major upgrades or replacements. Initial planning, programming, and budgeting for ETS will be coordinated with the COMNAVAIRSYSCOM APML during the demonstration/validation phase. During full scale development and full rate production phases, ETS planning, programming, and budgeting takes place through the ILS management team process. CETS will be funded by the appropriate COMNAVAIRSYSCOM APML using procurement funds for a period not to exceed one year after acceptance of the first production ACC/unit of the model being produced. After this time, ETS requirements must be funded by O&MN, Navy Reserve funds under the management control of NATEC (Code 6.7).

6.3.10.6 NETS are the primary source of ETS for equipment operators and maintainers. CETS are authorized only when the required support is not available from NETS resources.

a. NETS duties and responsibilities include but are not limited to:

(1) Provide technical advice, assistance, and training on the installation, maintenance, repair, and operation of weapon systems and equipment.

(2) Evaluate and advise on technical deficiencies in the maintenance and operation of weapon systems or equipment and recommend methods to eliminate these deficiencies.

(3) Investigate and advise on accidents and incidents due to systems or equipment failures. Train personnel in accident prevention from equipment failure/poor maintenance practices.

(4) Maintain close liaison with ISSCs, COMNAVAIRSYSCOM, and contractor personnel and provide technical advice and assistance to resolve maintenance problems/design deficiencies.

(5) Provide technical advice and training to maintenance personnel in resolving difficult maintenance problems.

(6) Relay training and equipment deficiencies to the MO and propose solutions for correction.

(7) Prepare and submit technical reports as required.

(8) Assist in the installation of aircraft equipment, shipboard and ashore, and provide OJT to appropriate military and civilian personnel.

(9) Perform emergency maintenance (direct assistance) on equipment to resolve technically difficult problems when temporary skill or manning shortages prevent accomplishment by assigned personnel. NETS will not perform routine maintenance except under unusual circumstances and never for prolonged periods of time.

(10) Devise local training course outlines, lesson plans, and written examinations, including information in identifying needed training programs and plans.

(11) Provide technical advice and assistance in connection with operational evaluation/technical evaluation.

(12) Participate in technical publication reviews, ILS Management Teams, MTRRs, and NTSP conferences.

(13) Serve as a supervisor of NETS when assigned to a working supervisory NETS position.

b. NETS personnel will not routinely be used for:

(1) Inspections, installation of engineering changes, evaluation of new equipment performance, or arranging for shipment of defective ACC/units.

(2) Performance of maintenance, except as defined in paragraphs 6.3.10.6a(8) and 6.3.10.6a(9).

(3) Performance of tasks considered organic to the user activity, for example, nonspecialized training, standing duties, and performing military administrative functions.

c. Civilian NETS positions are designated as Emergency-Essential per DOD Directive 1404.10. Civilians assigned to NETS positions shall be governed by and required to comply with provisions of this directive.

d. CETS duties and responsibilities include:

(1) Provide on-site classroom and OJT to DOD military and civilian personnel on maintenance and operation techniques pertaining to adjustment, calibration, troubleshooting, bench check, routine maintenance, inspection, and repair of the assigned system or equipment, including control, support, and test equipment. This training is for all maintenance related personnel, including NETS (as required).

(2) Provide information and instruction on the use of associated special tools and test equipment.

(3) Devise local training course outlines, lesson plans, and written examinations, including information in identifying needed training programs and plans.

(4) Emphasize all safety precautions.

(5) Train and demonstrate the best methods of installing modifications, retrofit kits, and other components.

(6) Provide technical information and training to resolve difficult and unusual maintenance problems.

(7) Provide analysis of maintenance difficulties and inform as to changes to maintenance, inspection, and training programs designed to improve the quality of maintenance.

(8) Provide information related to maintenance and operational procedures or problems, available in the contractor's plant, to DOD military and civilian personnel.

(9) Provide a liaison through which information related to installation kit checkout procedures and related data problems can be quickly relayed to the plant for correction and resolution.

(10) Provide information and assistance in connection with accident investigations.

(11) Perform emergency maintenance (direct assistance) on equipment to resolve technically difficult problems when temporary skill or manning shortages prevent accomplishment by assigned personnel. CETS will not perform routine maintenance except under unusual circumstances and never for prolonged periods of time.

NOTE: Only NATEC (Code 6.7) has the authority to contract for CETS.

e. CETS personnel shall not:

(1) Be appointed, employed, or placed under the supervision or direction of Navy personnel.

(2) Be placed in a policy making position.

(3) Be placed in a position of command, supervision, administration, or control over military or civilian personnel or personnel of another contractor.

(4) Be used to avoid manpower ceilings or other personnel rules and regulations of OPM, DOD, or DON.

(5) Become a part of the government organization or use government facilities for normal day-to-day CETS activities with the exception of shipboard deployments and field sites.

(6) Perform direct maintenance, except as noted in paragraph 6.3.10.6d(11) above.

(7) Represent any government activity at meetings or conferences. (This does not prevent CETS from serving as a technical advisor to the activity representative, but NETS will be used for this function when available.)

(8) Perform tasks that are considered organic to the user activity, for example, nonspecialized training, standing duties, and performing military administrative functions.

f. Initial ETS requirements will be included in appropriate ILS and phased support plans. From these, long-term programmatic ETS support plans will be developed by NATEC (Code 6.7) in conjunction with individual fleet customers, ACCs, TYCOMs, and APMLs. These programmatic plans will document requirements by site/billet and will be used to justify budget requests and allocate available resources. Additional ETS guidance and information is in NATECINST 5400.1 and other ACC or TYCOM directives (as applicable).

NOTE: For ETS support of airborne weapons release and control, stores management systems, expendable targets, UAS Groups 1 and 2 not governed by this instruction, and related equipment refer to OPNAVINST 8000.16.

g. Contractor maintenance services, including logistic support representative services, are procured through (Code 6.7) but do not fall under the definition of ETS. Policies and responsibilities concerning other contractor maintenance are in Chapter 11.

6.3.11 Navy Training System Plans (NTSP)

6.3.11.1 The NTSP is the official statement of billets, personnel, and training input and resource requirements to support the introduction and operational use of aircraft, systems, subsystems, equipment, and other developments, including nonhardware related developments. The NTSP assigns responsibilities for the planning, programming, and implementing actions necessary to provide required support to ensure:

a. Coordination of billets, personnel, military construction, training support, and training planning concurrently with hardware development and production.

b. Efficient and adequate training programs phased with the introduction of aircraft, systems, subsystems, equipment, or other developments or modifications to the existing systems or equipment.

c. Support of the policies established for system acquisition within the DON.

6.3.11.2 The NTSP is a COMNAVAIRSYSCOM developed document which lists the multiple elements required for life cycle support of new aircraft, systems, subsystems, or equipment. Development, approval, and implementation procedures are in OPNAVINST 1500.76.

6.3.12 Technical Audits

6.3.12.1 Purpose

The objective of technical audits is to improve training. Training data is reviewed for technical adequacy, applicability, accuracy, redundancy, and compatibility with student background. Technical audits are conducted on a continuing basis to ensure supporting data and equipment are current and representative of what is needed and currently used by the fleet.

6.3.12.2 Responsibilities

a. COMNAVAIRSYSCOM is responsible for providing policy direction, exercising control and coordination of the Training Audit Program, assigning audit team leaders, monitoring training data review and technical audit operations, and for serving as the official point of contact for technical audits and reviews of aviation specialized training schools.

b. Other system commanders, ACCs, and TYCOMs are responsible for supporting the training audits at schools with courses under their cognizance, providing audit team leaders and members as requested, and for arranging fleet participation in audits as required.

6.3.13 Training Requirements Review (TRR)

6.3.13.1 Purpose

The TRR, CNATT sponsored review of designated weapon systems training courses, ensures the fleet has the best trained maintenance personnel possible. To accomplish this, TRRs shall:

a. Identify any performance issues, to determine causal factors and corrective solutions.

b. Program corrective action.

c. This will be accomplished or verified during the annual course review.

d. Provide a communication bridge for community participants to generate an exchange of ideas.

6.3.13.2 Policy

OPNAVINST 1540.2 outlines the AMT Program and specifies CNO (N98) policy in aviation maintenance training at both the O-level and I-level. The TRR process ensures compliance with CNO policy, including the following basic elements:

a. Development of structured training tracks to promote standardization between fleets to the maximum extent possible.

b. Formal training shall be limited to subject matter taught most effectively and economically in a classroom or CBT setting.

c. PJT will be used to reinforce classroom training and IMI, where practical and economically viable.

d. CNATTU/CNATTMARU training shall provide the knowledge and skill required of specific tasks the trainee will be required to perform.

6.3.13.3 Procedures

a. The TRR brings all elements of the training process together. Commands represented on the policy committee include CNO, CMC, NETC, COMNAVAIRFOR, CG MCCDC, and CNAFR. Advisory committee membership includes CNET, BUPERS, COMNAVAIRSYSCOM, (AIR-5.0D, AIR-6.0B, and PMA-205), COMNAVAIRSYSCOM ACC or TYCOM, CNATTU, Type Wings, MAWs, and the Enlisted Aviation Maintenance Trainee Management Unit. Policy and advisory committees are primarily concerned with maintenance and training policy. Working committee membership is composed of fleet SMEs, who must be familiar with the technical aspects of the weapon system to be reviewed. SMEs must also be aware of current maintenance problems and their relationship to the training process.

b. TRR process participants should be prepared to perform the following at the CNATT TRR conference:

(1) Review existing training tracks and modify as required.

(2) Establish new training tracks as required.

(3) Recommend revisions, deletions, or development of new NEC or MOSs (as required).

(4) Identify and describe new performance requirements.

(5) Identify problems and provide recommendations for corrective action relative to training deficiencies outside the CNATTU or CNATTMARU which has an impact on fleet readiness.

6.3.14 Training Publications

6.3.14.1 Navy Enlisted Occupational Standards

The Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F Volume II) defines rates and ratings by describing the Navy's requirements and identifies additional skills required in specific billets which are supplemental to rating skill requirements. The manual consists of two sections as follows:

a. Section I - Contains occupational standards which express requirements for skills as determined by manpower management. These standards form the basis for personnel training and distribution.

b. Section II - Contains NECs which identify skills requiring more specific identification than is provided by rates and ratings and which are not rating wide requirements.

6.3.14.2 CANTRAC

NAVEDTRA 10500 contains information on schools and courses offered through Navy training commands. CANTRAC is available via the Web site at https://main.prod.cetars.training.navy.mil.

a. NAVEDTRA 10500 provides a consolidated and computerized catalog displaying courses available.

b. The CANTRAC is organized as follows:

(1) Volume I - Introductory, General Information, and Quota/Control Notes; includes general information not subject to frequent changes.

(2) Volume II - Course Descriptions and Convening Schedules, includes convening schedules taken from the NITRAS database. These are merged with the course descriptions by course identification number and appear as the last data field of the description, showing course data processing code, location, short title, fiscal year, and dates.

6.3.14.3 NAVAEDTRA 10061-AR

The List of Training Manuals and Correspondence Courses (NAVEDTRA 10061-AR) is a catalog of current training manuals and self-study courses, for both officer and enlisted personnel, in professional subjects. It is revised and distributed annually to all ships and stations.

6.3.14.4 Index to Directory of Navy Training Devices

The index is prepared by NAVSUP WSS and is a listing of training devices, training aids, accessories, and modification kits under inventory control of the Naval Training Equipment Center. All items listed are cross referenced to a multi-volume directory of naval training devices which contains descriptive data of each device.

6.3.15 Manpower Management

6.3.15.1 The Manual of Navy Total Force Manpower Policies and Procedures (OPNAVINST 1000.16) provides information, policies, tasking, and procedures for Navy manpower management. The manual is intended for use by all echelons in dealing with manpower change requests or other manning issues.

6.3.15.2 Total Force Manpower Management System (TFMMS) contains manpower requirements and authorization data necessary to support mission objectives which are described in Mission, Function and Tasking, Operational Orders, and Required Operational Capabilities and Projected Operation Environment statements. This system is the single authoritative source for manpower data. It tracks officer, enlisted, and civilian manpower resource requirements and authorizations for all naval activities, ships, and squadrons. The AMD is the official source document that displays an activity's manpower requirements and authorization and is based on CNO approved manpower documents (SMD/SQMD)/FMF/SEAOPDETs and by claimants for Shore Statements of Manpower Requirements generated by Efficiency Review Reports.

6.3.15.3 Occupational standards define the tasks required of specified rates or ratings. These standards define the minimum criteria required to function effectively at given levels of responsibility. They also are basic for enlisted training, advancement, distribution, and manpower requirements development. Occupational standards are developed by NAVMAC.

6.3.15.4 DNECs are used to inform commands of which NECs are being distributed and how they are carried against the activity's manpower document.

6.3.16 Fleet Feedback

6.3.16.1 NETC manages the Fleet Feedback to ensure adequacy of training, accuracy of curriculum, and effective use of instructional resources.

6.3.16.2 Fleet Feedback is the Navy's single integrated training feedback system. It applies to all warfare areas and all sources of training. The system is aimed at improving the quality of graduates and effecting improvements based on internal feedback from all naval activities.

6.3.16.3 Fleet Feedback resolves training issues at the lowest possible level. Units may submit training issues/concerns or make a recommendation that is general in nature, NETC Fleet Feedback email address at pnsc.netc.pao@navy.mil. Submissions will be sent directly to NETC who will then forward the submission

to the appropriate NETC Learning Center or TSC for resolution and feedback. A Fleet Feedback database is maintained by the NETC Training Programs Evaluation Board.

6.3.16.4 All aviation training activities conduct training appraisal feedback with their fleet customers to determine the quality and effectiveness of their assigned training courses. When a new or revised course is required, it is developed using OPNAVINST 1540.2.

6.3.16.5 Training Tool Change Management System/OPNAV Aviation Training Management System can also be used by fleet activities and ACC or TYCOM to address training deficiencies and changes. These tools provide another avenue available to address training concerns.

6.3.17 Training Equipment Maintenance Procedures

6.3.17.1 Processing Training Device Components

a. Aircraft Components, shall be condemned and considered not suitable for on-aircraft use if they have exceeded their authorized life cycle, have become outdated by changes in aircraft configuration, or if they are considered too costly for repair at an AIMD or MALS or FRC repair facility. A number of these identified components may serve as malfunction repair training aids, undergoing repeated disassembly/repair. Special component identification is required to assure their segregation from on-aircraft components.

b. Training device components, which, by the nature of their condition, may never again be used on aircraft, will be identified by one of the following permanent methods. Where possible, the words "NOT FOR USE ON AIRCRAFT" will be stenciled prominently upon such components in black letters against a yellow background. If this is not feasible, a permanent tag will be attached to the unit bearing the same legend in the same color scheme. If neither of these permanent systems is practical, a temporary tag bearing the same legend, black words on yellow, will be attached during the repair cycle. This identification system applies to all subassemblies of such components. Technicians and students who disassemble the component will attach the above described temporary tags to each subassembly as they proceed through the maintenance/repair process.

c. Some components are interchangeable between weapon system training devices and operational aircraft. These components require no special identification or special handling procedures when inducted for repair. These specific components are maintained by qualified maintenance technicians using standard maintenance repair and induction procedures.

6.3.17.2 Inducting Training Device Components

a. Trainer unique components identified as "NOT FOR USE ON AIRCRAFT" will be inducted into the supporting IMA or FRC on a MAF or WO. Mark on each copy the words "NOT FOR USE ON AIRCRAFT".

b. Upon completion of the repair or condemnation process of a trainer unique retrograde, at the IMA or FRC the inducted component will be returned to the supported activity or routed for disposition. Associated components or hardware inducted with such components are returned to the supported activity. Replacement of condemned retrograde components identified as aircraft common will be supported under normal aircraft component supply replacement procedures.

6.4 D-Level Training, Special Process Certification and Licensing

6.4.1 General

6.4.1.1 Various skills or processes performed at the D-level are not readily verifiable or are of such a critical nature as to preclude the use of normal certification requirements. For these reasons, special certification is required to ensure that artisans performing these processes meet acceptable levels of competence. The Quality Department establishes the local program requirements and determines those operations and processes that require special certification.

6.4.1.2 D-level shall ensure a comprehensive special certification/licensing program is developed, implemented, and administered. These requirements will be used as minimum guidelines for the establishment of a special certification program. To that end, the Quality Department is designated as the final approving authority in all areas concerning special certification. Requirements, other than those noted within this chapter, will be established by the Quality Department to ensure compliance with higher level directives.

6.4.1.3 Critical processes performed at D-levels shall be controlled by the special process certification program. The following are examples of special processes mandated by other governing authority:

a. Welding.

b. Soldering.

c. NDT/I.

d. Sealants, laminating, and bonding adhesives.

e. Bearing process.

6.4.1.4 One or more of the following situations could mandate implementation of the special process certification program:

a. Processes that cannot readily be verified.

b. Process that could jeopardize personal safety.

c. Process critical to end use, safety of flight, or critical safety items.

d. Processes that require special training.

e. State-of-the-art technology and operator proficiency requirement.

6.4.1.5 Other operations or functions may be designated for special licensing or certification as necessary. Examples are:

a. Aircraft turn and taxi.

b. Test cell.

c. Safety, survival, egress, and explosive systems.

d. Explosive devices.

e. Weight and balance (W&B).

f. Purging (fuel).

g. Spin tower.

6.4.2 Department Responsibilities

6.4.2.1 Quality Organization shall:

a. Establish local program requirements and determine those processes and functions to be covered under the special process certification and licensing program. Develop and implement procedures to ensure effectiveness of the program.

b. Ensure all elements necessary for qualifying an individual are established and complied with.

c. Maintain and provide to management and other departments (as appropriate) records and statistics which indicate effectiveness.

6.4.2.2 Production shall:

a. Assist in the development and implementation of a comprehensive special process certification and licensing program and provide instructors, facilities, and equipment for training. Additionally, determine skill competency (as appropriate).

b. Ensure requirements for qualifying or requalifying in the program are met and all supportive documentation, for example, individual qualification records, results of training, medical evaluations (if applicable) written and practical examinations, are provided to the Quality Department prior to the qualification or requalification.

c. Assist in providing corrective and preventive action in cases of questionable performance. Assist in revocation action when requested by the Quality Department. In each case of revocation, applicable stamps shall be immediately delivered to the Quality Department. When special process or special licensing certificates are revoked they shall be immediately returned to the Quality Department.

d. Notify Quality Organization of any changes in certifier status, for example, retirement, promotion, transfer (permanent or temporary) or other conditions that would preclude the continuation of special skill certification.

e. Maintain qualification records and ensure timely renewal of qualifications. Ensure the upkeep and accuracy of training, task and special process certification, licensing requirements, and Individual Qualification Records for artisans assigned to FRC sites are integral parts of the QA support process.

6.4.2.3 Engineering shall:

a. Provide specification requirements and other technical expertise required for training, examinations, and criteria for development of qualification criteria.

b. Provide laboratory analysis support, evaluation of practical and written examination, and their respective results. Additionally, determine skill category when appropriate.

6.4.2.4 Administrative Services and Civilian Personnel shall:

a. Coordinate input for developing training and examination requirements.

b. Provide for training, instructors, facilities, and examinations.

c. Retain training records.

6.4.2.5 Occupational Safety and Health Office shall provide medical evaluation and safety determination services.

6.4.2.6 Management Controls shall provide information resources support.

6.4.2.7 All departments shall provide assistance in the development and implementation of program requirements per this chapter.

6.4.3 Explosives Handling Personnel Qualification and Certification Program

6.4.3.1 The Quality Organization will monitor the Explosives Handling Personnel Qualification and Certification Program as established in OPNAVINST 8023.24/MCO 8023.3.

6.4.3.2 Storing and Handling Uninstalled Egress Systems and Explosive Devices. The storage of removed cartridges, CADs, and PADs must be accomplished per NAVAIR 11-100-1.1-CD.

a. Egress and explosive system devices which are not to be installed in the aircraft for a period of time will be stored in a secure area.

b. Egress and explosive system devices involved in mishaps will be rendered safe and disposed of by Explosive Ordnance Disposal personnel only. This shall be done only after the mandatory investigation required by OPNAVINST 3750.6.

c. Ejection seats and escape system components are structurally and functionally designed for one time use only. Ejection seats or escape system components that have been ejected or fired regardless of apparent condition shall be scrapped per current regulations after release by the AMB.

6.4.4 Welding Training Program

6.4.4.1 Depot FRCs shall provide welding training, examinations, and qualification for welders per NAVAIR 01-1A-34 and as identified in the CANTRAC. Welding certification or recertification training is provided by qualified, certified instructors. Examination will be performed by designated personnel.

6.4.4.2 Minimum qualification for a welding instructor to provide training qualification or requalification for welding personnel are:

a. Must be fully qualified in all elements of the welding trade to include experience as a welder in excess of the minimum required of a journeyman level welder.

b. Must be certified to perform, and have the ability to meet recertification requirements in all welding processes for which instruction is provided, on all metals specified in NAVAIR 01-1A-34.

c. Must have a thorough knowledge of aircraft and maintenance welding skills and processes.

6.4.4.3 Each FRC shall have a written procedure defining qualification requirements as well as certification and recertification procedures for establishing welding personnel and welding instructors. This procedure shall be consistent with NAVAIR 01-1A-34.

6.4.5 Aircraft Turn-up, Taxi, and Rotor Engagement

6.4.5.1 Only personnel licensed and designated in writing by the CO shall perform engine, APU turn-up, taxi, or rotor engagement. Designated personnel shall be thoroughly knowledgeable and proficient in:

a. Applicable portions of the Naval Air Training and Operating Procedures Standardization (NATOPS) Manual.

b. Capabilities, limitations, and safety precautions of the system requiring the ground functional check and authorization to perform and certify those tasks.

6.4.5.2 Initial certification and periodic recertification shall require a visual screening, medical examination, written, and practical examinations that include turnaround, start, turn-up, shut down, emergency procedures, and (where applicable) rotor engagement.

6.4.5.3 Prior to initial certification, and annually thereafter, each candidate shall complete a written and operational test developed by a T/M/S NATOPS Officer and administered by a T/M/S Pilot NATOPS instructor or qualified functional check flight (FCF) pilot. QARs may administer written examinations. For activities that have flight engineers or crew chiefs, the flight engineer or crew chief NATOPS evaluator or instructor, under the direction of the NATOPS Officer, may administer the written and operational examinations. NATOPS qualified flight engineers and crew chiefs must complete the written and operational examination to be certified to turn-up aircraft.

NOTES: 1. Engagement of rotors on helicopters shall be governed by T/M/S maintenance technical manuals and NATOPS.

2. Depot FRC COs may designate, in writing, ASIs to administer T/M/S specific written examinations to Engine and APU turn-up nominees (Chapter 3).

6.4.6 Aircraft Releasing Authority

The signature and rate or rank of the flight check officer constitutes aircraft releasing authority, certifying Safe for Flight conditions. Other personnel may sign the record if authorized and designated in writing by the CO. If aircraft is away from home and qualified maintenance personnel are not available, the pilot in command shall sign the certification in the Safe for Flight block.

NOTE: COs may authorize pilots-in-command to conduct applicable T/M/S NATOPS pilot inspections, ensuring servicing requirements are accomplished, and sign the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) in the CERTIFICATION block while operating away from home, without qualified maintenance personnel, for periods not exceeding 72 hours. Accomplishing these requirements, rather than completing all daily, turnaround, and fuel sampling requirements, is sufficient for Safe for Flight certification.

6.4.7 Nondestructive Testing and Inspection (NDT/I) Program

6.4.7.1 Purpose

The purpose of the NDT/I Program is to establish and maintain an NDT/I Program that responds to the needs of naval aviation. The specific objectives of the depot NDT/I Program are to:

a. Determine serviceability of new and used parts by using NDI techniques to check them for hidden defects.

b. Provide training.

c. Provide technical services.

6.4.7.2 Responsibilities

The following duties and responsibilities are defined and assigned.

a. COMNAVAIRSYSCOM is responsible for managing a program of research, development, training, and application of NDI techniques and equipment.

(1) A program manager shall be designated to provide overall management direction.

(2) NAVAIRINST 13070.1 assigns responsibilities within COMNAVAIRSYSCOM.

(3) Designating an NDI Program coordinator responsible for monitoring, evaluating and standardizing the D-level NDT/I application and training program elements, including scheduling and conducting periodic NDI Program review.

b. Each D-level that maintains NDI capability is responsible for assigning an NDT/I Program Manager within the ISSC Research and Engineering Group (Code 4.0) to direct and implement the internal NDT/I Program. The Program Manager shall:

(1) Act as the primary NDI point of contact for fleet activities and all external NDI matters.

(2) Provide technical coordination of all NDT/I functions.

(3) Develop and approve NDI procedures for dissemination both in-house and to the fleet activities.

(4) Review and approve all outgoing directives involving NDI procedures.

(5) Ensure properly manned, equipped, qualified, and certified NDI personnel are maintained at all D-levels.

(6) Provide technical assistance to I-level and O-level activities on NDI matters related to supported weapons systems.

(7) Coordinate with ACC or TYCOM prior to issuing NDI directives and techniques for fleet implementation.

(8) Maintain a documented NDI training, qualification, certification, and recertification program for assigned personnel.

(9) Maintain communication with lead NDI Program personnel at COMNAVAIRSYSCOM and all FRCs/ISSCs.

(10) Provide technical support to the Fleet NDI training program as requested by COMNAVAIRSYSCOM, CNATT, or COMNAVAIRFOR.

c. Each D-level shall have a radiation safety program sufficient to ensure safe X-ray operations. Program requirements include, but are not limited to, compliance with all X-ray radiation safety requirements per NAVSEA S0420-AA-RAD-010. A Radiation Safety Officer and an Assistant Radiation Safety Officer shall be assigned to monitor this program.

NOTE: RAD 010 takes precedence over radiation safety procedures contained in NAVAIR 01-1A-16.

d. Written procedures for NDI directives for fleet implementation shall be explicit and verified by the ACC or TYCOM. When references are used they shall be those normally available to the maintenance level involved. Whenever possible, equipment and material required shall be those listed in NAEC-MISC 52-0385. When this is not practical, the ISSC will identify required equipment and materials, for example, transducers, wedges, fixtures, probes, standards, and provide such items to fleet activities concurrently with inspection directives. If the directed inspection is of a continuing or repetitive nature, a support equipment

recommendation data form shall be submitted by the originating ISSC per MIL-HDBK-2097A. Each NDI directive shall indicate an NDI point of contact.

NOTE: When deemed necessary by the ISSC NDI Program Manager, TDs requiring complex NDI inspection techniques or where the area of interest and nonrelevant indications may be misinterpreted shall be supplemented by drawings, photographs, or video tape for clarity. This supplemental material must be dated, serialized, and controlled by the CTPL as part of the TD.

e. D-levels shall ensure the focus of the NDI Program is to provide a quality product not to be compromised by production expediency.

6.4.7.3 Fleet Training Program

a. D-levels shall provide NDI training examination and qualification per NAVAIRINST 1500.2 and as identified in the CANTRAC (NAVEDTRA 10500).

b. COMNAVAIRSYSCOM shall:

(1) Provide D-level with current, complete training courses.

(2) Monitor and update the CANTRAC.

(3) Coordinate training requests for military and civilian NDI personnel with the cognizant D-level. Quota control authority for military personnel is normally delegated to the D-level that teaches the course. A requesting activity, in receipt of ACC or TYCOM approval to obtain a course quota, will normally contact that D-level directly. In emergency situations where course quota conflicts cannot be resolved between the requestor's chain of command and the D-level, COMNAVAIRSYSCOM (AIR-6.7) will be contacted to arbitrate a solution.

c. D-levels shall:

(1) Provide NDI operator training.

(2) Provide NDI Technician recertification training.

(3) Submit proposed NDI course changes.

(4) Administer standardized practical and written examinations to fleet personnel. One retake of the examination will be permitted. Repeated failure will be reported to the individual's CO and TYCOM for appropriate action.

6.4.7.4 Depot Level Internal Training and Certification Program

a. Minimum qualifications for an instructor to provide training qualification or requalification for NDI personnel are:

(1) Two years of experience as an industrial NDI inspector Level II (or equivalent) working in the methods being taught.

(2) A thorough understanding of the applications and limitations of all five basic NDI methods.

(3) NDI instructor certification per local directives.

(4) For classroom instruction the individual must be a graduate of instructor training school.

b. D-levels shall ensure all candidates for the Navy NDI school at NATTC Pensacola, FL are thoroughly screened and capable of meeting the equivalent requirements per the CANTRAC. Special attention shall be given to English comprehension and mathematical abilities.

c. Each D-level shall have a written directive defining qualification requirements and certification procedures for establishing NDI personnel as levels I, II, III, and instructor. This procedure shall be consistent with the framework of NAS 410.

6.4.8 Egress and Explosive System Checkout Program

Due to inherent dangers associated with egress and explosive systems, an egress system checkout procedure is required. The command shall ensure egress and explosive system checkout and familiarization training for all personnel involved in maintenance/repair on aircraft upon reporting aboard and every 6 months thereafter no later than the last day of the requalification month per paragraph 10.15. Any personnel removed from aircraft maintenance responsibilities for 90 days or longer will receive an egress system checkout before performing any aircraft maintenance.

6.4.9 Aviation Life Support Systems (ALSS)

6.4.9.1 The ALSS Program establishes the policy and requirements for determining acceptable civilian personnel certification qualifications for maintaining personnel parachute assemblies, ejection seat drogues, and related egress equipment.

a. Only qualified, certified personnel shall be permitted to pack, repair, or inspect personnel parachutes, drogue chutes (excluding drogue chutes with nonremovable head boxes), inflatable survival equipment, and assemble seat survival kits. Personnel must be graduates of either approved D-level training, parachute rigger school, manufacturer, or CNATTU for specific T/M/S ALSS assemblies. D-levels must submit their training plans to a COMNAVAIRSYSCOM (PMA-202) approved neutral source for review/approval every 2 years.

NOTE: AME personnel who have completed the CNATTU course for the F/A-18E/F aircraft SJU-17 Navy Aircrew Common Ejection Seat (NACES) are also qualified to perform work on SJU-17 NACES installed in F/A-18A-D and E/A-18G aircraft. Completion of the CNATTU F/A-18E/F SJU-17 NACES course does not qualify personnel to perform work on any other model of ejection seat installed in the F/A-18A-D.

(1) Initial examination, certification requires completion of local classroom instruction, OJT, and a written and a practical examination.

(2) Recertification is required annually and will be accomplished through a written and a practical examination.

b. Only qualified, certified personnel shall be permitted to maintain, service, or inspect egress systems. Personnel must be graduates of approved D-level training, AME school, manufacturer, or CNATTU for specific T/M/S egress systems. D-levels must submit their training plans to a COMNAVAIRSYSCOM (PMA-202) approved neutral source for review and approval every 2 years.

(1) Initial certification will require completion of local classroom, OJT, and a written and a practical examination.

(2) Recertification is required annually and will be accomplished through a written and a practical examination.

(3) Personal Flight Crew ALSS Equipment Maintenance. D-levels will establish procedures for maintenance per applicable directives.

6.4.10 Aircraft Confined Space Program

6.4.10.1 An Aircraft Confined Space Program will be established per NAVAIR 01-1A-35.

6.4.10.2 COMNAVAIRSYSCOM manages the Aircraft Confined Space Program per NAVAIR 01-1A-35. NAVAIR 01-1A-35 implements aviation requirements and shall be used as the governing document for all Aircraft Confined Space Program procedures, ashore and afloat. EA certification requirements are identified in NAVAIR 01-1A-35.

6.4.11 Aircraft Battle Damage Repair (ABDR) Personnel

6.4.11.1 ABDR Engineers. The D-level engineer is key to effecting difficult repairs and making one time flight or helicopter lift decisions. The engineer will:

a. Provide direct support for ship and shore-based operational units and in-theatre D-level facilities.

b. Assist the fleet with information and guidance for major decisions.

c. Communicate with the W&B Officer on repairs that effect aircraft W&B.

6.4.11.2 ABDR Assessors. Only the most qualified and experienced maintenance personnel will be selected and trained as ABDR assessors. The assessor will be a qualified planner and estimator (P&E), designated as an ABDR assessor, and shall be capable of performing the following functions:

a. Evaluate the extent of battle damage.

b. Coordinate engineering assistance (as required).

c. Estimate the time required for full or partial repair.

d. Determine the capability to effect repairs with available personnel, support equipment, and facilities.

e. Specify repairs to be accomplished or deferred.

6.4.11.3 ABDR Technicians. ABDR technicians can perform repairs to aircraft or components requiring the use of ABDR procedures.

6.4.11.4 Training Policy. The ABDR concept of temporary and partial repair of aircraft represents a departure from current aircraft maintenance and repair philosophy. Maintenance and aircrew personnel must be educated by ABDR engineers, assessors, and technicians with respect to acceptable levels of damage and standards of repair allowed under the ABDR concept.

NOTE: NAVAIR 01-1A-39 and T/M/S specific ABDR repair manuals provide in-depth information on ABDR policies, procedures, techniques, and materials.

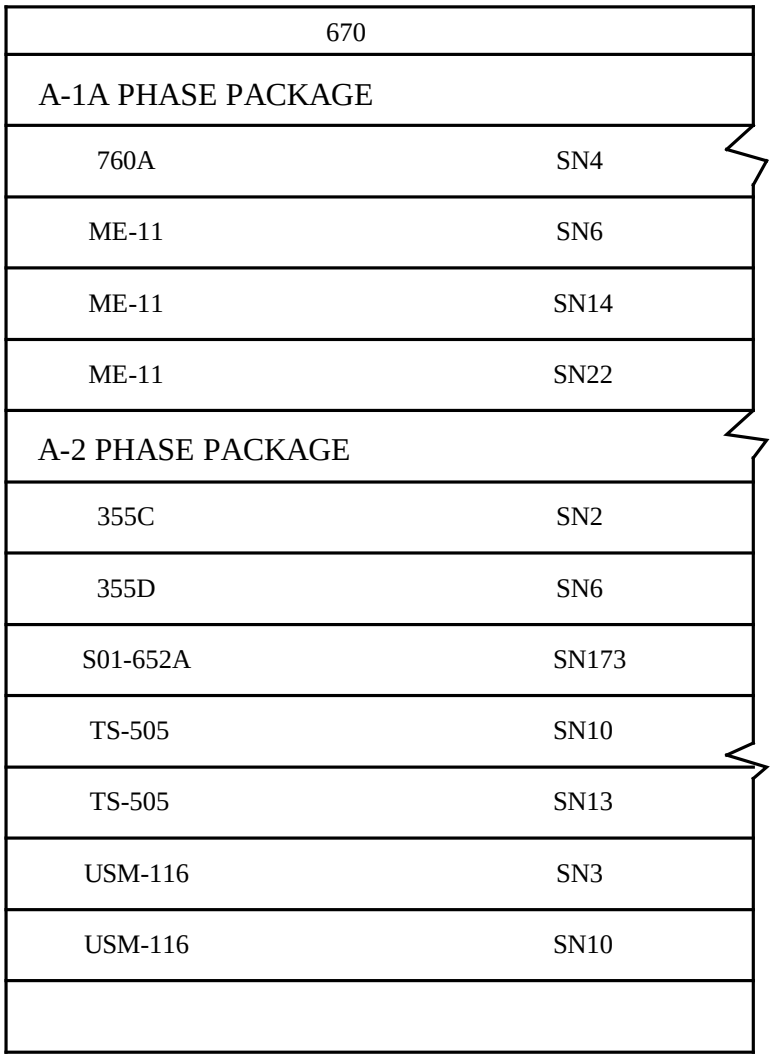


Figure 6-1: TMDE Work Center VIDS Board 64

DISCREPANCY **COMPLY WITH NAVAIR 13-1-6.2 REQUIREMENTS**					
SER NOS:	**187563**	***(AC6142021)***	**26804**	***(AC6142025)***	
	12117	***(AC6142022)***	**49341**	***(AC6142026)***	
	52985	***(AC6142023)***	**2218**	***(AC6142027)***	PILOT/INITIATOR
	865403	***(AC6142024)***	**54602**	***(AC6142028)***	
CORRECTIVE ACTION					
					CF REQ ☐ RFI QA REQ ☐ BCM
CORRECTED BY		INSPECTED BY	SUPERVISOR **PR1 Justin Tackett**		MAINT CONTROL
↑ ↓	MODEX	PRI	TURN-IN DOCUMENT	SYSTEM/REASON	MCN

Figure 6-2: Discrepancy/Corrective Action Block

OPNAVINST 4790.2
COMNAVAIRFORINST 4790.2

SUPPORT EQUIPMENT REWORK REQUEST

1. FROM:	2. TO:	3. BROAD ARROW NUMBER:		
3. CNUM:	4. DEPOT ASSIGNED:	5. REQ AAI:	6. OWN AAI:	7. SM&R CODE:
8. COG:	9. NIIN:	10. CAGE:	11. PART NUMBER:	
12. NOMENCLATURE:			13. ITEM SERIAL NUMBER:	
14. REASON FOR REQUEST: ☐ OVERHAUL ☐ LOAD TEST ☐ REPAIR				
15. BARCODE NUMBER:	16. SHIPPING/TRACKING DOCUMENT NUMBER:	17. IS ASSET IN F2 STATUS? ☐ YES ☐ No		
18. LIST ALL DISCREPANCIES AND OUTSTANDING PARTS REQUISITIONS NUMBERS:				
19. IMRL MANAGER PRINTED NAME:	19a. SIGNATURE DATE:	19b. IMRL MANAGER SIGNATURE:		
20. MMCO/PCO PRINTED NAME:	20a. SIGNATURE DATE:	20b. MMCO/PCO SIGNATURE:		
PROVIDE A COPY OF THIS REWORK REQUEST WITH THE EQUIPMENT AND ANOTHER COPY WITH SHIPPING DOCUMENTS				

OPNAV 4790/80 (REV 11/2016) Page 1 of 1

Figure 6-3: Support Equipment Rework Requst (OPNAV 4790/80) (Sample)

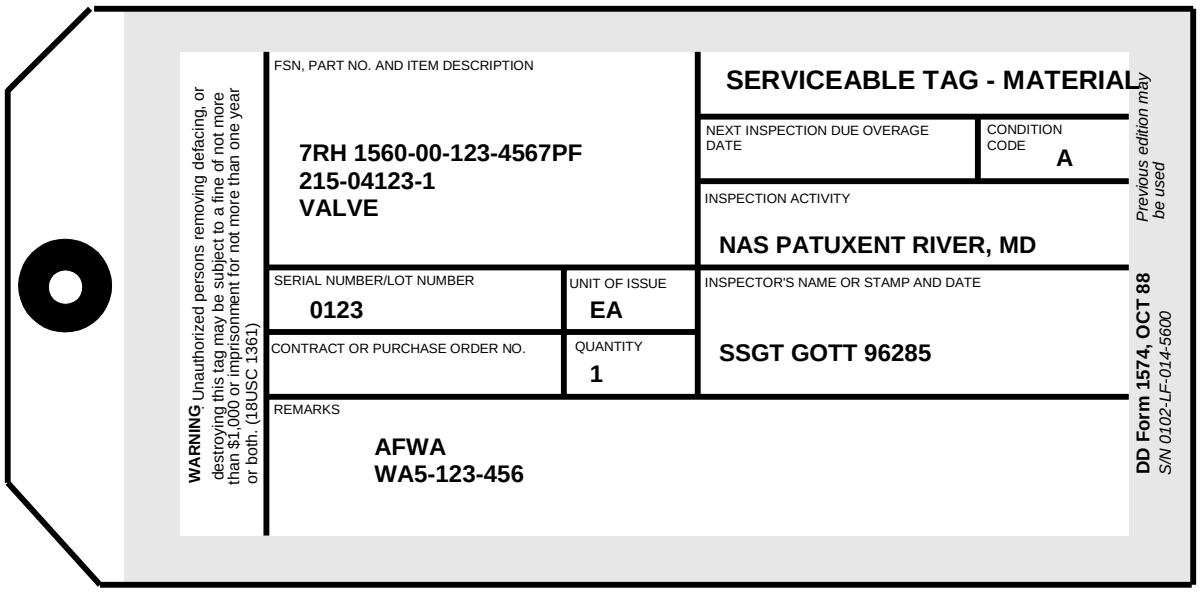


Figure 6-4: Serviceable Tag - Material (DD Form 1574)

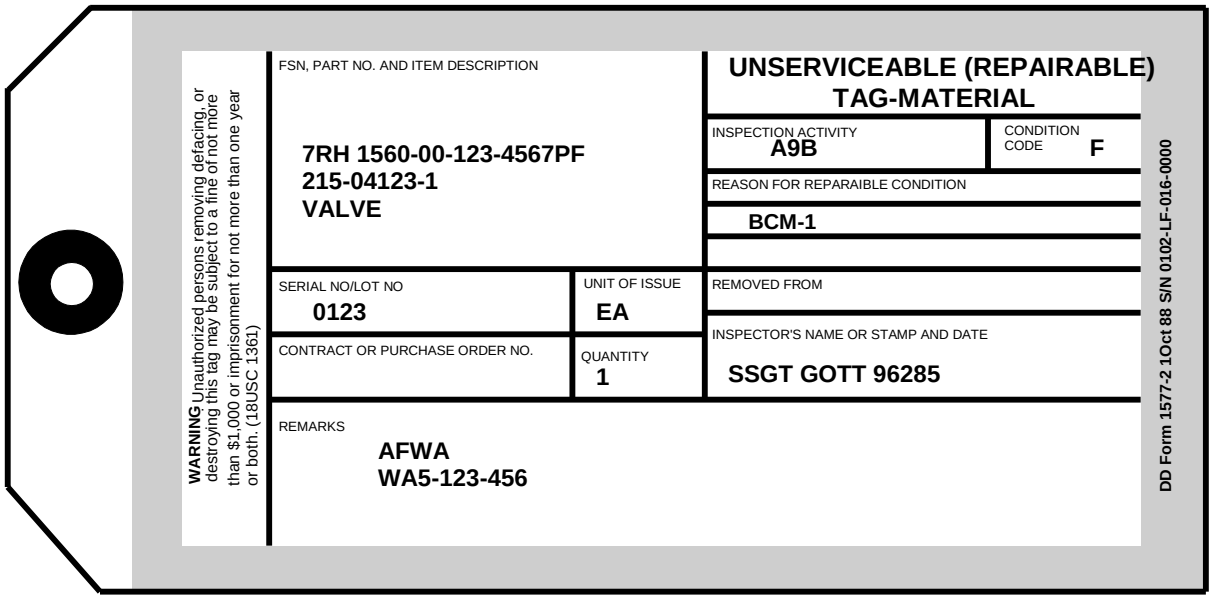


Figure 6-5: Unserviceable (Reparable) Tag - Material (DD Form 1577-2)

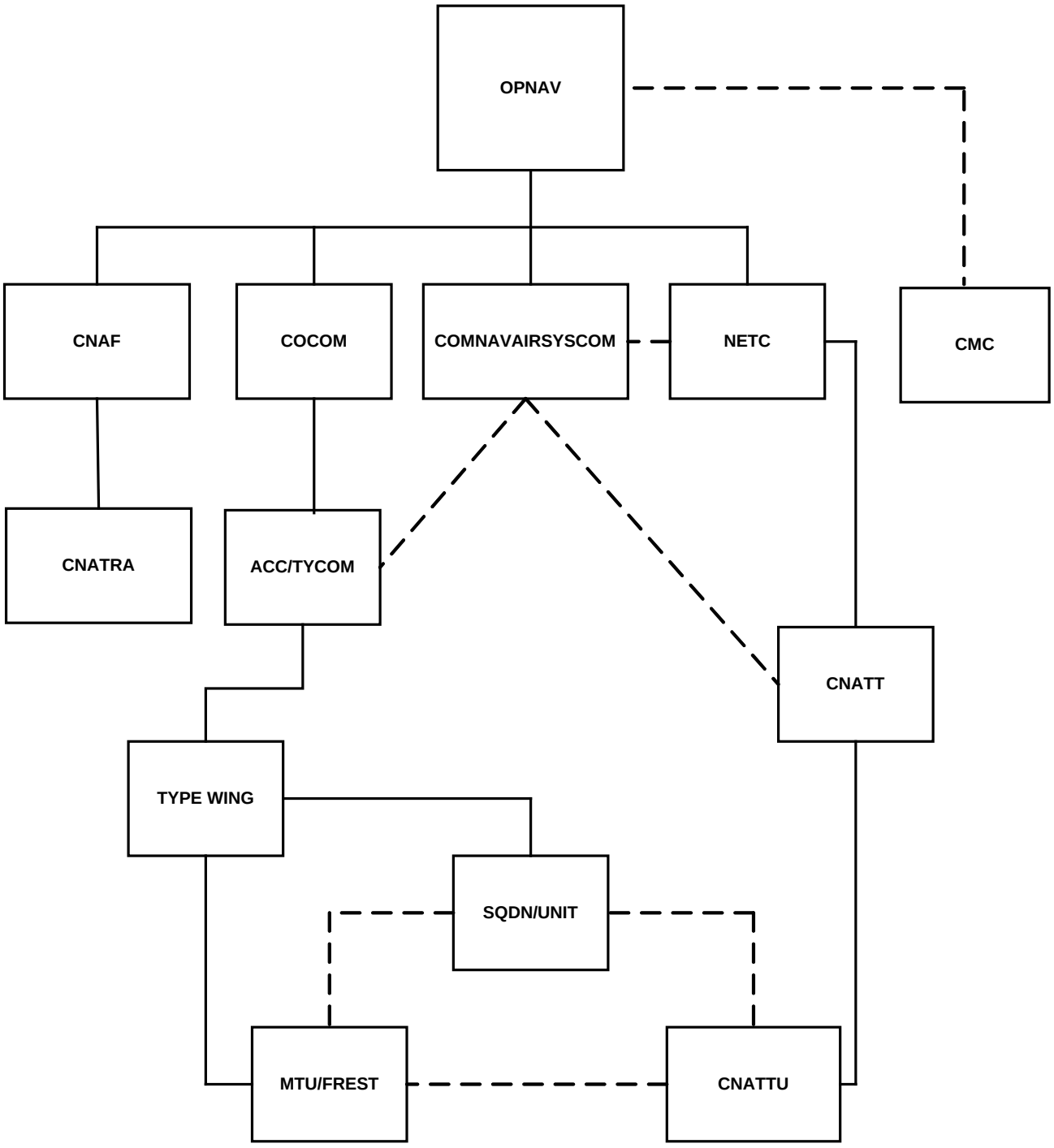


Figure 6-6: Command Relationships

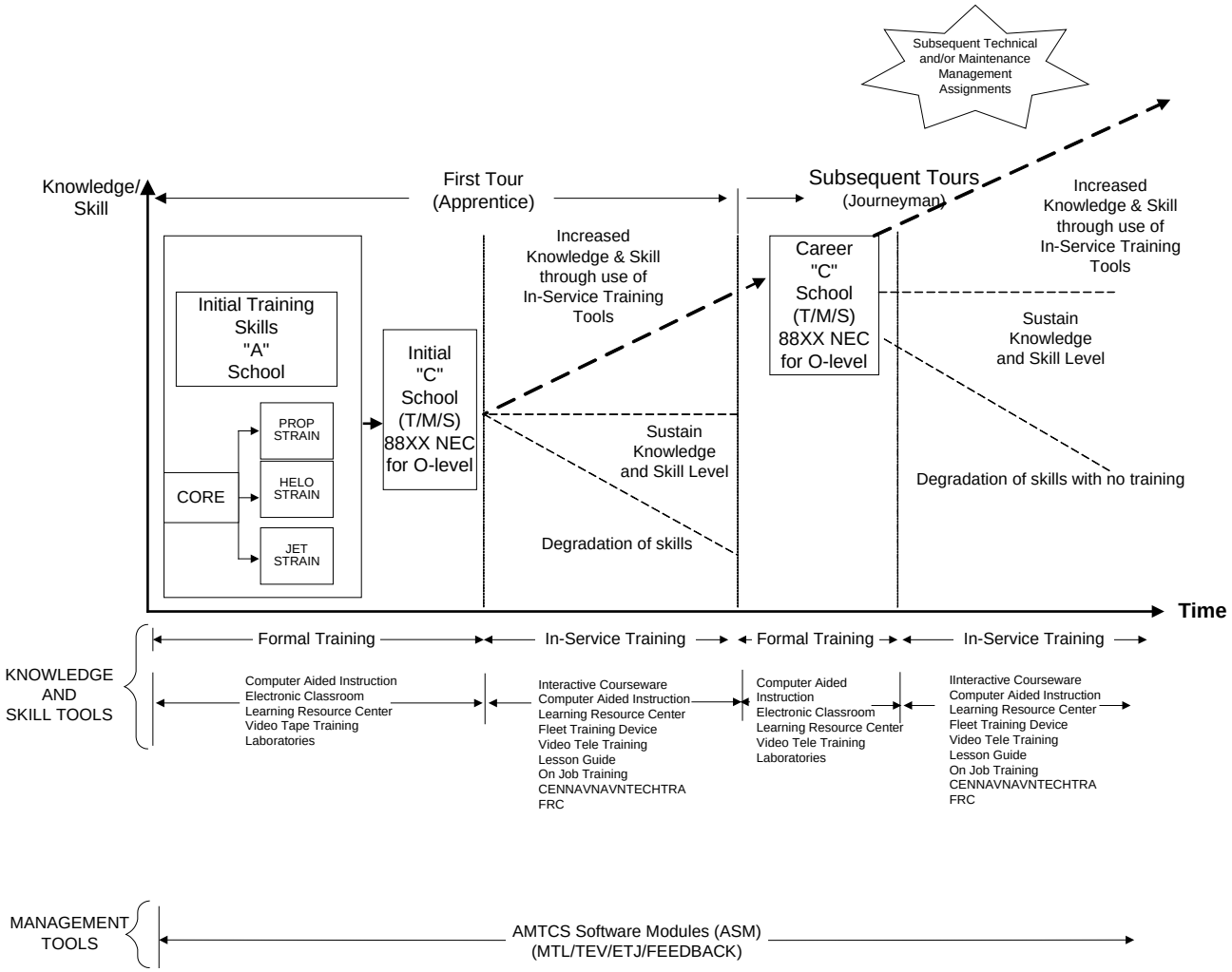
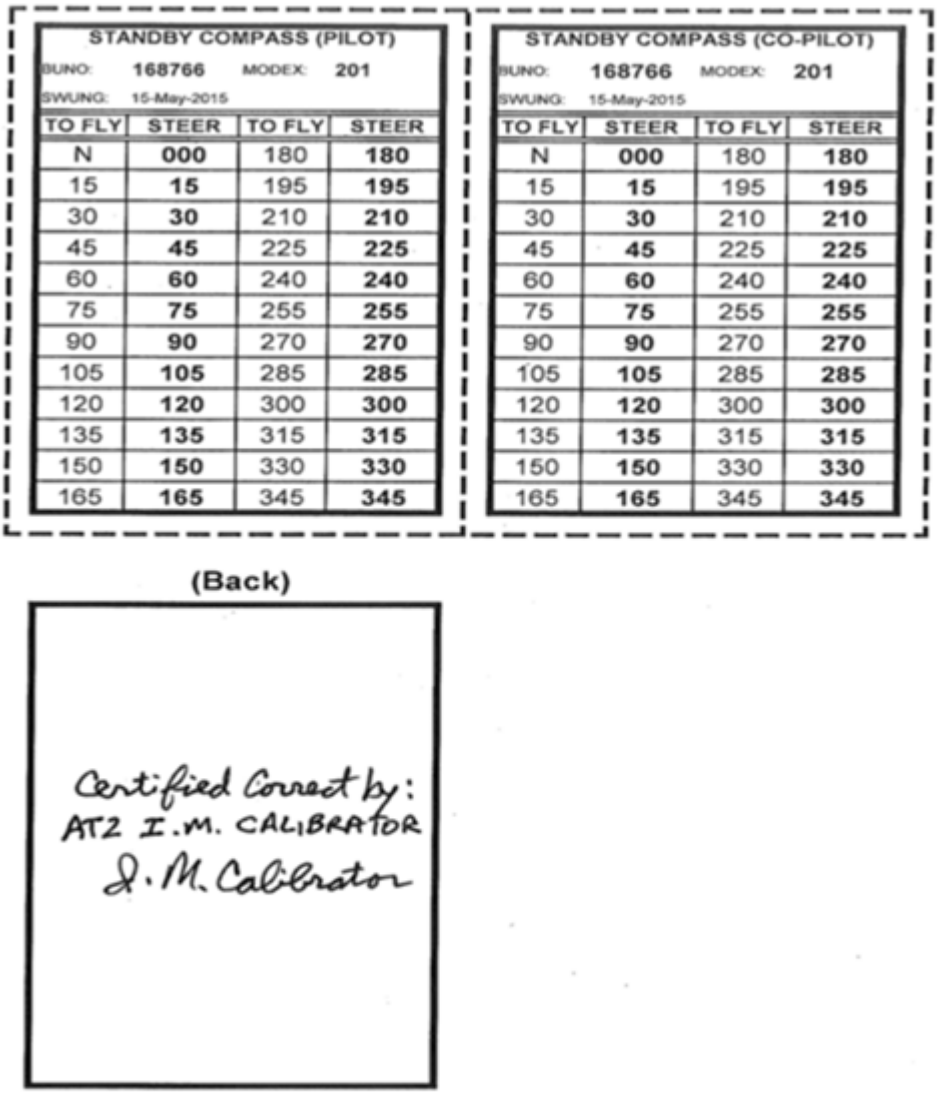


Figure 6-7: Aviation Maintenance Training Continuum System



STANDBY COMPASS (PILOT)

BUNO: 168766 MODEX: 201

SWUNG: 15-May-2015

TO FLY	STEER	TO FLY	STEER
N	000	180	180
15	15	195	195
30	30	210	210
45	45	225	225
60	60	240	240
75	75	255	255
90	90	270	270
105	105	285	285
120	120	300	300
135	135	315	315
150	150	330	330
165	165	345	345

STANDBY COMPASS (CO-PILOT)

BUNO: 168766 MODEX: 201

SWUNG: 15-May-2015

TO FLY	STEER	TO FLY	STEER
N	000	180	180
15	15	195	195
30	30	210	210
45	45	225	225
60	60	240	240
75	75	255	255
90	90	270	270
105	105	285	285
120	120	300	300
135	135	315	315
150	150	330	330
165	165	345	345

(Back)

Certified Correct by:
AT2 I.M. CALIBRATOR
I. M. Calibrator

Figure 6-8: Compass Correction Card (Example)