

**CHAPTER 3**  
**Maintenance Concepts, Programs and Processes; Maintenance Unit Department,**  
**Division Organization; Manpower Management;**  
**and Aviation Officers**

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**CHAPTER 3**  
**Maintenance Concepts, Programs and Processes; Maintenance Unit**  
**Department, Division Organization; Manpower Management;**  
**and Aviation Officers**

**3.1 Maintenance Concepts**

**3.1.1 Introduction**

3.1.1.1 The NAMP supports the Chief of Naval Operations (CNO) and the Commandant of the Marine Corps (CMC) objectives for aviation readiness, safety, and the optimum use of manpower, facilities, materials, and funds.

3.1.1.2 The NAMP is founded on a three-level division of maintenance concept that classifies maintenance by complexity, depth, scope, and range of work performed. Specific maintenance tasks and support services are assigned to the level that best optimizes resources in the achievement of aviation readiness and safety objectives.

**3.1.2 Maintenance Levels**

**3.1.2.1 O-Level Maintenance**

O-level maintenance primarily includes inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies of aircraft, Unmanned Aircraft (UA) or Unmanned Aircraft Systems (UAS), and aeronautical equipment. O-level maintenance is usually performed by the activity that operates the aircraft or aeronautical equipment, but may be performed by I-level and D-level activities on assigned equipment or on aircraft undergoing depot rework. Most Navy and Marine Corps O-level maintenance activities document their work in Optimized Organizational Maintenance Activity (OOMA) via work orders (WO).

**3.1.2.2 I-Level Maintenance**

a. I-level maintenance is performed by designated maintenance activities responsible for supporting units operating aircraft and aeronautical equipment. I-level activities are located on the air station or ship of the units they support, but may provide support for non-local units. Most Navy and Marine Corps I-level activities document their work in Optimized Intermediate Maintenance Activity (OIMA) via maintenance action forms (MAF).

b. I-level maintenance primarily consists of:

- (1) Testing and repair of aeronautical components and support equipment (SE).
- (2) I-level calibration.
- (3) Technical assistance to supported units.
- (4) Incorporation of I-level Technical Directives (TD).
- (5) Manufacture of selected aeronautical components, liquids, and gases.
- (6) Performance of I-level maintenance, such as Non-Destructive Inspection (NDI), when required.

### 3.1.2.3 D-Level Maintenance

a. D-level maintenance is performed at or by FRC sites to ensure continued flying integrity of airframes and flight systems during subsequent operational service periods. D-level maintenance is also performed on material requiring major overhaul or rebuilding of parts, assemblies, subassemblies, and end items. It includes manufacturing parts, modifying, testing, inspecting, sampling, and reclamations. FRC sites support O-level and I-level maintenance by providing engineering assistance and performing maintenance beyond their capabilities.

b. D-level maintenance functions provided in this instruction. General functions may be grouped as follows:

- (1) Aircraft standard depot level maintenance (SDLM) (standard and special rework).
- (2) Rework and repair of engines, components, and SE.
- (3) Calibration by Navy calibration laboratories and Navy Primary Standards Labs (NPSL).
- (4) Incorporation of technical directives (TD).
- (5) Modification of aircraft, engines, and support equipment (SE).
- (6) Manufacture or modification of parts or kits.
- (7) Technical and engineering assistance by field teams.
- (8) Age exploration (AE) of aircraft and equipment under reliability centered maintenance (RCM).

### 3.1.3 Maintenance Types

#### 3.1.3.1 Rework

Rework may be performed on aircraft or equipment. It is performed by industrial type activities assigned the mission, task, or functional responsibility of providing maintenance program support. Rework is performed with military and civilian personnel and managed by Commander, Naval Air Systems Command (COMNAVAIRSYSCOM).

#### 3.1.3.2 Upkeep

Upkeep is performed on aircraft or equipment. It is performed by military activities assigned aircraft, equipment, or the responsibility of providing direct support to such activities. Upkeep is performed by military and contractor personnel and is managed by the Aircraft Controlling Custodian (ACC).

**NOTE: Rework and upkeep are two types of aircraft maintenance performed within the naval establishment without distinction as to levels of maintenance.**

### 3.1.4 Maintenance Functions

This chapter lists the maintenance functions assigned to the intermediate maintenance activity (IMA) and Commander, Fleet Readiness Center (COMFRC) activities. Assignment of individual maintenance functions to a maintenance level allows the maintenance activities to further determine specific tasks they are required to perform. To determine the extent to which a repair task can be undertaken, the maintenance activity must consult the appropriate maintenance technical manuals, operating and service instruction manuals, or TDs that pertain to each supported weapon system or component.

#### 3.1.4.1 General Maintenance Functions

- a. Applicable to aircraft systems and components are listed in [Figures 3-1](#) and [3-2](#).
- b. Applicable to power plant systems and components are listed in [Figure 3-3](#).
- c. Applicable to propeller and rotary wing dynamic drive systems and components are listed in [Figure 3-3](#).

#### 3.1.4.2 Maintenance Level Functions

a. Functions assigned herein identify the lowest maintenance level at which a task may be performed. However, a higher level maintenance function may be assigned to support a weapon system or component. Higher levels of maintenance may be assigned lower level functions, for example, turnaround inspections, daily inspections, special inspections, conditional inspections, and phase inspections are applicable to those I-level and D-level activities with aircraft assigned.

b. Functional definitions in this Chapter are used to identify SE, tools, material, and technical manual data for O-level, I-level, and D-level maintenance. Although allowance lists for SE, tools, and material reflect the assigned maintenance level, they do not mean all O-level, I-level, and D-level activities are outfitted with tools and SE to perform these functions. Although a specific function may be assigned to I-level or D-level maintenance, it does not mean all I-level or D-level activities are outfitted with tools and SE to perform this function. Limited I-level or D-level activities may be assigned the responsibility and furnished the resources to perform a specific function for an entire logistic area. Certain tools and equipment required for assigned O-level maintenance functions may be furnished by the supporting activity, station, ship, or marine aviation logistics squadrons (MALS) for subcustody to O-level. The approved IMRLs are considered the authority for the issue of specific items of SE.

c. When removal and replacement of components from a weapon system is required using only O-level test equipment and hand tools, the maintenance function is O-level. Limited I-level maintenance functions may be performed at designated O-level activities. COMNAVAIRSYSCOM will assign limited I-level maintenance responsibility upon recommendation by the cognizant ACC or TYCOM. Only those O-level activities specifically assigned limited I-level functions by COMNAVAIRSYSCOM will perform this maintenance. It will be limited to equipment and components designated by COMNAVAIRSYSCOM based on ACC or TYCOM recommendations.

d. Selected D-level maintenance functions may be performed at designated IMAs. Only designated IMAs or COMFRC activities will perform those functions on equipment and components as approved by COMNAVAIRSYSCOM based on ACC or TYCOM recommendations.

#### 3.1.4.3 Airborne Weapon Systems

Maintenance functions and policy for guided missiles, aircraft guns, targets, bomb assemblies, rockets, jet assisted takeoff, and pyrotechnics are listed in OPNAV M-8000.16.

#### 3.1.4.4 Cartridge, Cartridge Actuating Device (CAD), and Propellant Actuating Device (PAD)

These functions are general and apply regardless of installation, for example, bomb racks, ejection seats, or explosive bolts ([Figure 3-4](#)).

#### 3.1.4.5 SE

a. For the purpose of classifying maintenance functions, SE is defined as all equipment required on the ground to make an aeronautical system, support system, subsystem, or end item of equipment (SE for



SE), operational in its intended environment. It is primarily the equipment covered by the aircraft maintenance material readiness list (AMMRL) Program. Equipment, such as drill presses, grinders, lathes, sewing machines, and welders, which are normally used in aeronautical work centers in support of aircraft, components, or SE will be included in this classification.

b. SE is categorized as common (CSE) and peculiar (PSE). CSE and PSE are divided into avionic and nonavionic. [Figure 3-4](#) lists O-level and I-level maintenance function applicability.

c. For maintenance functions and policy on armament weapons support equipment (AWSE), refer to OPNAV M-8000.16.

d. Maintenance of SE not included in the AMMRL Program but required in certain circumstances to support flight operations or aircraft maintenance will be supported by the I-level as directed by the ACC or TYCOM. Examples of this equipment are crash and firefighting equipment, runway sweepers, and fork lift trucks.

e. SE installed within a work center, such as hydraulic test stands (A/F 27T-10), oxygen and nitrogen generating plants (LOX-30/PLN-430), and electrical test units (VARIDRIVES), will be maintained and documented by the work center having physical custody.

f. Installed jet engine test facility (Class C test cells) maintenance responsibilities are assigned as follows:

(1) The structure and basic systems, such as fuel, water, air, and CO2 fire extinguishing systems, shall be maintained by the station Public Works Department (ashore) and Engineering Department (afloat).

(2) The control console, engine connector panel, and thrust bed shall be maintained by the work center having physical custody.

g. Unmanned aerial systems (UAS). Assignment and classification of O-level and I-level maintenance functions are applicable to UAS. All UAS operating activities are designated as O-level with limited I-level capability because of unique characteristics inherent in UAS design, operation, and life. Maintenance functions are listed in [Figure 3-4](#). For more maintenance functions for UAS Groups 1 and 2, refer to OPNAV M-8000.16.

h. Airborne mine countermeasure (AMCM) equipment and aviation life support systems (ALSS) maintenance functions are listed in [Figure 3-5](#).

### 3.1.5 Assignment of Maintenance Responsibility

The CNO and CMC assign aircraft maintenance tasks and responsibilities to activities of naval operating and training forces, fleet marine forces (FMF), and nonfleet Marine forces. COMNAVAIRSYSCOM assigns maintenance tasks and responsibilities to shore activities they manage.

#### 3.1.5.1 General Maintenance Responsibilities

a. Designated activities will perform limited D-level maintenance functions for an entire logistic area based on ACC or TYCOM recommendations approved by COMNAVAIRSYSCOM. Specified O-level activities are authorized to perform limited I-level maintenance functions on systems and equipment unique to the assigned mission of the activity. Certain other O-level activities are authorized to perform limited I-level functions in partial support of their own operations. Being the sole user at an activity does not necessarily constitute justification for the assignment of limited I-level or D-level maintenance functions or additional facilities and equipment.

b. Navy activities, except aviation training ships and nonaviation ships supporting aircraft, assigned the responsibility for providing or performing I-level support or maintenance will establish an IMA or FRC. In carrying out its maintenance responsibilities, the Weapons Department performs on-equipment maintenance but is authorized to perform I-level maintenance to the limit of its capabilities. For maintenance beyond those limits, the other I-level maintenance members will provide required support within their capabilities. Station activities with assigned aircraft shall, unless specific deviations are authorized, establish an Operations Maintenance Division (OMD) within the Operations Department to perform O-level maintenance.

**NOTE: Throughout this instruction, any reference to the Weapons Department will include Weapons Divisions on amphibious assault ships and other commands where a Weapons Division serves the same functions as a Weapons Department.**

### 3.1.5.2 Shore (Field) Activities

a. Stations and activities of the shore establishment are assigned responsibility for performing the level of aircraft maintenance designated in [Figure 3-6](#). Shore activities will:

- (1) Provide I-level maintenance in support of station aircraft, tenant squadrons, and units.
- (2) Provide O-level maintenance facilities for tenant activities.
- (3) Provide D-level maintenance facilities for tenant activities.
- (4) Provide nonorganic (prepositioned) SE for tenant activities.
- (5) Perform O-level maintenance and flight line servicing functions on station and transient aircraft.
- (6) Perform transient line operational requirements per this instruction, whether or not aircraft are assigned.

b. Marine Corps, Non-FMF Activities. Marine Corps Air Stations (MCAS) and air facilities ([Figure 3-7](#)) are responsible for performing the levels of maintenance designated by the Marine Corps Tables of Organization and for providing flight line services for transient aircraft. Also, these stations will provide maintenance facilities and limited nondeployable SE or plant property support for tenant activities.

c. Tenant activities are responsible for O-level maintenance of SE assigned on subcustody from the supporting station.

d. Maintenance on transient aircraft may be performed within the station's capability.

e. Aviation ships are responsible for the levels of maintenance designated in [Figure 3-8](#). Non-aviation ships are not responsible for aircraft maintenance; however, they shall provide required O-level facilities, including all installed equipment. Helicopter detachments perform their own maintenance. Maintenance materials required to support helicopter detachments are provided to the ships by the ACC or TYCOMs.

f. Navy squadrons and units are responsible for performing maintenance on assigned aircraft and equipment per [Figure 3-9](#).

g. Aviation FMF squadrons are responsible for accomplishing the levels of maintenance shown in [Figure 3-10](#).

h. Naval Air Training and Marine Air Reserve squadrons and units are responsible for performing the levels of maintenance shown in [Figure 3-11](#).

i. Marine air traffic control detachments (MATCD), operating under marine air control squadrons (MAC), are responsible for performing O-level maintenance on assigned MATCALs ([Figure 3-12](#)).

(1) COMNAVAIRSYSCOM (AIR-6.6) is responsible for managing marine air traffic control and landing systems (MATCALs).

(2) PMA-213 is responsible for program management.

(3) COMNAVAIRSYSCOM (AIR-6.6) and Space and Naval Air Warfare Systems Center (SPAWARSYSCEN) (Code 2336) provide fleet support.

j. Other special activities and units, for example, Defense Contract Management Agency, Fleet Imaging Commands, and Tactical Support Centers (TSC) assigned aircraft or operating equipment originally designed for use in aircraft, are responsible for performing the level(s) of maintenance shown in [Figure 3-13](#).

## 3.2 Maintenance Programs and Processes

**NOTE: Due to the size, staffing, and structure of D-level FRC Quality Departments, D-level FRC Commanding Officers (CO) are authorized to assign appropriate certified/qualified subject matter experts (SME), such as representatives from the Safety Department, Training Management Office, In-service support center (ISSC), Material labs, and engineering and logistics departments, as NAMPSOP and non-NAMPSOP program managers and monitors. Personnel assigned as program managers shall be ultimately responsible for NAMPSOP and non-NAMPSOP program requirements. D-level FRC Quality Department shall monitor assigned SME performance of all NAMPSOP and non-NAMPSOP program management and monitoring functions.**

### 3.2.1 Naval Aviation Maintenance Program Standard Operating Procedures (NAMPSOPs)

3.2.1.1 NAMPSOP maintenance programs are intended to be implemented using this instruction and specific program related maintenance technical manuals which are identified within the program text. Generation of supplemental instructions below the COMNAVAIRSYSCOM level (with the exception of local command procedures (LCP) per [Appendix D](#) to augment these policy management documents are not authorized.

3.2.1.2 NAMPSOP maintenance programs are detailed in [Chapter 10](#).

**NOTE: Special activities, for example, MATCDs, shall comply with NAMPSOP programs applicable to their maintenance level, equipment, or type/model/series (T/M/S). Any NAMPSOP program not applicable to the special activity shall be approved by TYCOM.**

### 3.2.2 Non-NAMPSOP Maintenance Programs

Non-NAMPSOP Maintenance Programs addressed in this chapter are intended to be implemented using this instruction and specific program related technical manuals, which are identified within the program text. Generations of supplemental instructions below at the ACC or TYCOM/Wing/Marine Air Group (MAG) level to augment these policy management documents are not authorized. All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

**NOTES: 1. Special activities, for example, MATCDs, shall comply with non-NAMPSOP programs applicable to their maintenance level, equipment, or T/M/S. Any non-NAMPSOP program not applicable to the special activity shall be approved by TYCOM.**

**2. Only D-level FRCs may generate LCP using OPNAVINST 5215.17 format.**

**3. When applicable, the D-level FRC CO shall designate in writing the military or civilian personnel performing specific NAMPSOP responsibilities.**

### **3.2.2.1 Non-Destructive Inspection (NDI) Program**

a. During inspection of aircraft, it is essential that defects are detected and corrected before they reach catastrophic proportions. NDI can detect defects with a high degree of accuracy and with no adverse effect upon the use of the part or system being inspected. The effective application of NDI has resulted in increased operational safety and in many instances, dramatically reduced maintenance man-hours and material expenditures.

b. NDI is the practice of evaluating a part or sample of material without impairing its future usefulness. Basic NDI methods include, but are not limited to, fluorescent, penetrant, magnetic particle, eddy current, ultrasonic, and radiographic. NDI Program success depends heavily upon training, sustained proficiency, intelligent application, discriminating interpretation of results, and the availability of the necessary tools.

c. NDI is of vital concern at all levels of maintenance. All operational and support commanders shall direct their efforts toward its proper use. NDI shall be used in the maintenance of Navy and Marine Corps aircraft and aircraft systems wherever contributions to safety, reliability, quality assurance (QA), performance, or economy can be realized.

d. NDI shall only be performed by certified NDI personnel using NAVAIR 01-1A-16, NAVAIR 01-1A-16-2, applicable TDs, and maintenance technical manuals. NDI has proven to be a valuable maintenance tool:

- (1) Where internal defects cannot be detected visually.
- (2) Where structural or component disassembly can be avoided.
- (3) For QA in the detection of substandard materials or conditions.
- (4) As an input for changes to, and to prove the validity of, periodic maintenance requirements.

**NOTES: 1. The terms qualified, certified, or proficient do not precede any instance of NDI Instructor, NDI Specialist, NDI Technician, or NDI Operator within the NDI Program text. When these personnel are listed within this text, it denotes qualified, certified, or proficient.**

**2. NDI Instructor, Specialist, Technician, and Operator training and certification shall be per this chapter.**

**3. FRC NDI personnel shall be certified per [Chapter 6](#).**

**4. Contractor NDI personnel shall be certified per NAS 410 unless otherwise stated within specific contract stipulations.**

**5. Unique operational locations may preclude IMA and FRC NDI support. In such instances, Army certified NDI personnel per TM 1-1500-335-23 and Air Force certified NDI personnel per T.O. 33B-1-1, may provide NDI services. When necessary, the MO may grant authorization for Army and Air Force NDI services. All NDIs performed must be per the**

**applicable TD or maintenance technical publication and supervised by a quality assurance representative (QAR).**

**6. Army and Air Force NDI personnel are not authorized to provide refresher training, method-specific training, task-specific hands on training, supervised work experience, certification or triennial 3-year recertification of NDI technicians, or certification or annual recertification of NDI operators.**

e. NDI Program Responsibilities:

(1) COMNAVAIRSYSCOM (AIR-4.3.4.3) has overall cognizance of the NDI Program and is responsible for managing a program of research, development, training, and application of NDI techniques and equipment. NAVAIRINST 13070.1 assigns the responsibilities within COMNAVAIRSYSCOM for the various elements of the NDI Program. COMNAVAIRSYSCOM (AIR-4.3.4.3) shall:

(a) Coordinate and issue information on NDI within naval aviation, other services, and industry (as appropriate).

(b) Review NDI maintenance technical manuals and update publications as newer techniques and applications are developed.

(c) Establish NDI standards and specifications.

(2) ACCs/TYCOMs shall:

(a) Monitor the NDI Program in activities under their cognizance.

(b) Advise on availability and location of NDI training.

(c) Maintain liaison with COMNAVAIRSYSCOM, FRCs, and fleet activities on NDI matters.

(d) Ensure NDI laboratories, equipment, and personnel are audited (as required).

(e) Designate NDI specialists.

(f) Assign an NDI Program Manager.

(3) I and D-level activities:

(a) Ensure compliance with qualification requirements and safety precautions.

(b) Ensure industrial radiation safety requirements are strictly enforced per NAVSEA S0420-AA-RAD-010.

(c) Use available NDI equipment fully and develop new procedures and applications, as far as practical, to provide labor, material, and cost savings.

(d) Maintain an adequate number of NDI technicians at all times to provide NDI services to supported organizations and transient aircraft hosted maintenance.

(e) Ensure the NDI equipment and laboratory spaces are continuously ready for use. This includes availability of required consumable items.

(f) Establish and maintain a continuing training program, to be verified during Type Wing and ACC or TYCOM audits, within the NDI Branch to provide supervised work experience to new NDI technicians and a mechanism for all NDI technicians to become proficient with newly developed NDI techniques, applications, and SE.

(g) Establish and maintain liaison with the cognizant ACC or TYCOM designated NDI Specialist and request assistance, via the chain of command, on all NDI deficiencies (as required).

(h) Provide and maintain industrial X-ray capabilities for open or exempt shielded or shielded radiography, as applicable, per NAVSEA S0420-AA-RAD-010 (RAD-010).

**NOTES: 1. COMNAVAIRFOR N422 is the approving authority for any deviations to X-ray capabilities.**

**2. LHA and LHD class ships are exempt from establishing and maintaining an X-ray Radiography Program. LHA and LHD X-ray vaults will remain in a ready for use status in the event the program is re-established. No facility survey is required.**

**3. CONUS-based CVNs returning from deployment will place their X-ray program in a temporary suspension status once the ship enters its Maintenance Phase. All training, audit, assessment, and briefing requirements are suspended during this period. CVNs must notify the Radiological Affairs Support Office (RASO) by naval letter, via Commander, Naval Air Forces Pacific (CNAF) NDI Class Desk (N422B3), that X-ray radiography will be temporarily suspended. The letter will provide an estimated reactivation month and year. The Commanding Officer will retain possession of the X-ray control panel key while the program is in a temporary suspension status. CVNs that place their Radiography Program in a temporary suspension status must coordinate with the nearest I-level FRC to provide radiography proficiency training for their NDI Technicians. CVNs will reactivate their program no less than 90 days prior to a planned deployment and notify CNAF NDI Class Desk (N422B3) and RASO via naval letter. Within 30 days of reactivation, RASO will conduct a program inspection conducted on both shielded and open facility X-ray capabilities.**

(i) Establish and maintain liaison with the designated Radiation Safety Officer.

(j) Provide NDI technician representation to the annual COMNAVAIRSYSCOM NDI Working Group meeting for training and communication between COMNAVAIRSYSCOM, ACC or TYCOMs, NDI support equipment managers, NDI instructors, Navy Personnel Command NDI detailers, and other services.

(k) Comply with Broad Arrow reporting procedures per [Chapter 5](#) whenever degraded NDI capabilities are encountered.

**NOTE: NDI MAFs shall have the inspected block signed by a Collateral Duty Inspector (CDI), Collateral Duty Quality Assurance Representative (CDQAR), or QAR to establish accountability for tools, IMRL equipment, accessories, and consumables used when performing NDI functions.**

(4) O-level activities shall:

(a) Request IMA or FRC NDI support (as required).

(b) Obtain IMA or FRC NDI services in all situations where NDI results are suspect.

(c) Inform the IMA or FRC, in advance, of scheduled NDI requirements. Include these requirements in the monthly maintenance plan (MMP).

(d) Assign NDI technicians, Navy Enlisted Classification Code (NEC) 7225, or Military Occupational Specialty (MOS) 6033 TAD to the supporting IMA or FRC to maintain their proficiency and to augment IMA OR FRC NDI capabilities, except in unique deployment situations where no IMA OR FRC exists.

(e) Ensure NDI equipment is continuously ready for use. This includes availability of required consumable items.

f. The Naval Aircraft Non-Destructive Inspection Technician Class C1 course (C-603-3191) at Naval Aviation Technical Training Center (NATTC), Pensacola, FL, provides initial NDI Technician training for military (all branches) and civilian personnel. Navy aviation structural mechanics and Marine Corps structures mechanics, of grade E-4 and above, and civilian personnel are eligible to attend the course. Information pertaining to curriculum information, course prerequisites, obligated service requirements, quota requests, and convening dates are in NAVEDTRA 10500 and the Catalog of Navy Training Courses (CANTRAC) (<https://main.prod.cetars.training.navy.mil>).

**NOTE: Marine Corps activities send requests for training to the cognizant CGMAW.**

g. The FRC NDI Recertification course (Course N-701-0005) is conducted at FRC East, Cherry Point NC; FRC SE, Jacksonville FL; FRC SW, San Diego CA; and FRC MA, Oceana VA. Information pertaining to curriculum, course prerequisites, quota requests, and convening dates are in the CANTRAC (<https://main.prod.cetars.training.navy.mil>).

h. The FRC NDI Technician Specific Task course (Course N-701-0006) is available on a limited basis at FRC East, Cherry Point, NC; FRC SE, Jacksonville, FL; and FRC SW, San Diego, CA, to meet fleet requests for platform specific NDI training. The course will also be scheduled (as required) to provide training on newly acquired NDI equipment introduced or implemented into fleet activities. Fleet personnel should contact the Quota Control Manager at the FRCs per the CANTRAC (<https://main.prod.cetars.training.navy.mil>) to request scheduling information and quotas.

**NOTE: In the event emergency scheduling requirements cannot be satisfied within the requester's chain of command, COMNAVAIRSYSCOM (AIR-6.7.5.2) should be contacted for assistance.**

i. The following documents contain information pertinent to the NDI training program:

- (1) NAVEDTRA 10500.
- (2) NAVAIR 01-1A-16.
- (3) NAVAIR 01-1A-16-2.
- (4) NAVAIRINST 1500.2.
- (5) NAVSEA S0420-AA-RAD-010.
- (6) NAVMED P-5055.
- (7) NAS 410 (contractor).

j. NDI Records

(1) The NDI Certification Record (OPNAV 4790/139) ([Figure 3-14](#)) provides a record of certification and recertification of NDI technicians and operators. Certifying officials at the Naval Aircraft NDI Technician School and the FRCs shall be designated in writing by the CO or OINC, or by

their designated representative. The Naval Aircraft NDI Technician school and FRCs shall retain records of training materials used, tests given, and individual test scores for a minimum of 3 years.

(2) NDI technicians and operators shall use the NDI Technician/Operator Work Record (OPNAV 4790/140) (Figure 3-15) to record all NDI tasks, supervised work experience, and trial practice applications performed. Entries shall be verified by the NDI Instructor, NDI Specialist, Work Center Supervisor, QAR or CDQAR, or an NDI Technician (as applicable). Self-verification is not authorized. Personnel performing repetitive NDI tasks, such as eddy current on aircraft wheels, may record weekly entries.

(3) All NDI technicians and operators shall maintain an NDI Technician/Operator Log that details all NDI tasks performed. The log shall consist of two sections and, at a minimum, include the following:

<u>Left side</u>	Original certification record (OPNAV 4790/139). Current NDI method(s) recertification record (OPNAV 4790/139).
<u>Right Side</u>	Copy of current physical (exam or assessment). Copy of current eye exam. Original JQR indicating successful completion of initial training requirements. NDI Technician/Operator Work Record (OPNAV 4790/140). (This shall be retained in the log for the period of certification or until recertification).

**NOTE: In compliance with the Privacy Act, a signed and dated Stressor Sheet may be used in lieu of a copy of the physical exam.**

(a) The Work Center Supervisor or designated alternate shall retain copies of NDI Technician/Operator Log to verify that NDI technician or operators under his or her cognizance have maintained proficiency. All purged items shall be given to the individual.

(b) The NDI Technician/Operator Log shall accompany the NDI Technician/Operator during periods of TAD.

(c) Upon transfer, the individual carries the NDI Technician/Operator Log to their next activity and work center copies shall be given to the individual for personal retention.

k. NDI personnel and their responsibilities are identified as follows:

(1) NDI instructors are military or civilian personnel who have completed Instructional Delivery Continuum Journeyman Instructor Training course (Course A-012-0077) or equivalent. NDI instructors are authorized to provide refresher training, method-specific training, task-specific hands on training, and supervised work experience. NDI instructors shall be one of the following:

- (a) Naval Aircraft NDI school Instructor.
- (b) FRC NDI Instructor.
- (c) NATEC NDI Specialist.

(2) NDI specialists are military or civilian personnel and are authorized to provide refresher training, method specific training, task specific hands on training, supervised work experience, triennial (3 year) recertification of NDI technicians, and technical support in the research and implementation of developing or improving NDI technologies. NDI specialists are authorized to train, certify, and recertify NDI operators. Minimum qualifications for NDI specialists are as follows:

**NOTE: NDI specialists shall be designated by the ACC or TYCOM.**



- (a) Senior enlisted (E7 or above) or civil service (minimum WG-11/GS-09).
- (b) An NDI technician in all five basic NDI methods with at least two recertifications in all five basic NDI methods.
- (c) Fully developed in technical skills and knowledge with aircraft maintenance experience on multiple T/M/S.
- (d) Able to research, read, and interpret drawings, maintenance technical manuals, and directives.
- (e) Capable of developing techniques, interpreting specifications, standards, and specifying the inspection method or technique to be used.
- (f) Able to write with clarity and technical accuracy.
- (g) Possess a high level of maturity and demonstrate superior performance of assigned duties.
- (h) Be observant, alert, have an inquiring mind, and ability to work well with others.
- (i) Motivated, having a strong personal desire for increased responsibility and for developing greater technical knowledge in their specialty.

(3) NDI technicians are Navy aviation structural mechanics and Marine Corps structures mechanics, of grade E-4 and above, who have successfully completed the Naval Aircraft Non-Destructive Inspection Technician Class C1 course (C-603-3191). NDI technicians, normally attached to an IMA or FRC, are assigned NEC 7225 or MOS 6033 and may be certified to perform fluorescent, penetrant, magnetic particle, eddy current, ultrasonic, and radiographic NDI methods. Recertification of each NDI method is required every 3 years. Early recertification is authorized and encouraged to prevent expiration of certification(s) during tours of deployed duty. Current certification of NDI technicians regularly engaged in all NDI methods may be extended by the ACC or TYCOM for up to 1 year if circumstances warrant. An IMA or FRC shall request adjustments to NDI technician staffing levels to address long-term inabilities to meet NDI requirements placed upon the activity. When NDI instructor or NDI specialist support is not available or impractical to train and certify NDI operators, NDI technicians with 3 or more years of experience, and at least 1 recertification that perform NDI on a regular basis may be authorized by the ACC or TYCOM to train and certify NDI operators as follows:

**NOTE: ACC or TYCOM may waive the 3-year experience requirement if circumstances necessitate.**

(a) NDI technicians may be authorized to certify NDI operators in penetrant (Type I, Method C), magnetic particle, and eddy current NDI tasks applicable to the prospective NDI operator's T/M/S. Locally prepared course materials tailored to the specific NDI task may be authorized if training materials from NDI instructors cannot be acquired in a timely manner.

(b) Requests for authorization shall be addressed to the cognizant ACC or TYCOM via the Type Wing and shall include the NDI technician's current qualifications, experience history, and the specific TD or maintenance technical manuals directed NDI task(s) for which NDI operator training and certification is to be provided. If approved, a copy of the ACC or TYCOM authorization shall be attached to the NDI Technician's NDI Certification Record ([OPNAV 4790/139](#)). NDI operator training and certification authorization is restricted to the specific NDI task(s) for which the NDI Technician was approved and shall be reviewed annually by QA for continued need of the authorization. If the original extenuating circumstances are resolved, the cognizant ACC or TYCOM shall be contacted for direction. Authorization shall remain in effect only as long as NDI certification and proficiency are maintained.

(4) NDI operators are Navy and Marine Corps personnel, of grade E-4 and above, who have successfully completed required training and may be certified to perform limited NDI tasks. NDI operators, normally attached to O-level activities, shall only perform TD or maintenance technical manuals directed NDI tasks and evaluate the results on specific aeronautical parts, assemblies, or structural features. NDI operators can only be authorized to perform penetrant (Type I, Method C), magnetic particle, or eddy current NDI tasks. Authorization shall be specifically granted by the ACC or TYCOM via the Type Wing. Such authorization is normally granted only when activities must operate without IMA or FRC support due to operational locations and as a temporary solution to a short-term NDI technician shortage or workload surge. NDI operator task specific training, task specific hands on training, and supervised work experience is normally provided by NDI specialists. NDI operators shall seek technical assistance from IMA or FRC NDI technicians when necessary. Recertification of each NDI method for each NDI task is required annually. Additional NDI operator requirements are as follows:

(a) Written cognizant ISSC concurrence is required before any specific eddy current NDI procedure can be authorized to be performed by an NDI Operator. ISSC concurrence of the individual NDI Operator is not required.

(b) Method specific NDI training shall be provided to all NDI operators by NDI specialists or TYCOM authorized NDI technicians. This training is required in the following minimum amounts: PT = 4 hours, MT = 4 hours, and ET = 10 hours.

(c) Task specific hands on training shall be provided to all NDI operators by NDI specialists or TYCOM authorized NDI technicians. Task-specific hands on training shall include, as a minimum:

1. Familiarization with all required equipment.
2. Process control procedures.
3. Application of the specific inspection procedure per the applicable TD or maintenance technical manuals NDI task.
4. Task-specific training shall be provided in an amount that will vary with complexity of the TD or maintenance technical manuals directed NDI tasks, but shall not be less than 4 hours for the first aeronautical part, assembly, or structural feature listed.
5. Task-specific training for each additional aeronautical part, assembly, or structural feature listed shall be determined by the NDI Instructor or Specialist, but shall not be less than 2 hours.

(d) Supervised work experience shall be provided to all NDI operators by NDI specialists or NDI technicians. Supervised work experience, before the NDI Operator can perform inspections without direct supervision, shall include, as a minimum:

1. PT = 16 hours, MT = 16 hours, and ET = 40 hours for the first aeronautical part, assembly, or structural feature listed in the applicable TD or maintenance technical manuals directed NDI task and method.
2. Training for each additional aeronautical part, assembly, or structural feature listed in each task shall require supervised work experience in the following minimum amounts: PT = 4 hours, MT = 4 hours, and ET = 10 hours.

3. Additional supervised work experience may be required at the discretion of the NDI specialist or NDI technician.

(e) NDI operators shall be closely monitored by NDI technicians and by cognizant QARs or CDQARs. NDI operators are not authorized to operate ultrasonic or radiographic equipment. They may, however, assist NDI technicians operating this equipment.

l. NDI technicians and operators must maintain proficiency by performing the NDI method(s) for which they are certified at least twice each month, as evidenced by entries on their NDI Technician/Operator Work Record (OPNAV 4790/140) (Figure 3-15). This can be accomplished either through normal workload or by performing trial practice applications.

(1) NDI technicians shall maintain X-ray proficiency by performing radiographic image X-ray inspections at least twice each month. These inspections can be performed as open facility or vault operations. If normal workload does not facilitate meeting this requirement, proficiency shall be maintained by performing X-rays of two substantially different parts that are representative of typical aircraft-related X-ray requirements (kilovolt, geometric complexity, and orientation). The inspections may be performed in immediate succession, provided the NDI Technician or Operator Work Record (OPNAV 4790/140) (Figure 3-15) reflects each application.

(a) Every NDI technician shall complete at least one of the twice per month required X-ray inspections functioning as the radiographer-in-charge (lead radiographer). This requirement will refresh the NDI technician's radiation safety practices and the ability to produce high quality radiographs on short notice.

(b) For activities authorized to perform open facility X-ray, all NDI technicians shall participate in at least one open facility X-ray inspection (either through normal workload or to maintain proficiency) every 3 months. NDI technicians do not have to function as radiographer-in-charge to meet this proficiency requirement. Shipboard activities shall not activate the X-ray tube for the sole purpose of maintaining proficiency. In this case, NDI technicians shall participate in the full sequence of open facility X-ray operations without activating the control panel. Any participation in an open facility X-ray inspection shall satisfy the requirements in paragraph 3.2.2.3.

(c) NDI technicians stationed at IMA or FRC NDI laboratories without X-ray capabilities are encouraged to maintain their proficiency (if possible) by performing monthly applications at a nearby IMA or FRC activity. If not practical, an X-ray NDI method proficiency waiver shall be requested through COMNAVAIRFOR.

(2) NDI technicians failing to maintain monthly proficiency shall have their certification in that method suspended and may not perform any NDI in that method until proficiency is re-established. Proficiency shall be regained by performing a practice demonstration of the suspended certification method. An NDI technician/specialist shall verify and annotate proficiency completion in the remarks column of the NDI Technician/Operator Work Record (OPNAV 4790/140) (Figure 3-15).

(a) NDI technicians with proficiency lapses up to 12 consecutive months may regain their certification by making trial practice applications under the supervision of an NDI technician/specialist who shall annotate that proficiency has been sufficiently demonstrated in the remarks column of the NDI Technician/Operator Work Record (OPNAV 4790/140) (Figure 3-15).

(b) NDI technicians with proficiency lapses exceeding 12 consecutive months, but less than 3 years, require refresher training that must be administered by a FRC or NDI specialist to re-establish certification.

(c) NDI technicians, including those who currently possess an approved COMNAVAIRFOR X-ray NDI method deviation, who fail to maintain proficiency for 3 or more years, or fail to pass NDI specialist triennial NDI recertification, are required to attend the FRC NDI Recertification course (Course N-701-0005).

(3) NDI operators failing to maintain monthly proficiency shall have their certification suspended and may not perform any NDI in that method until proficiency is re-established.

(a) NDI operators with proficiency lapses up to 6 consecutive months may regain their certification by making trial practice applications under the supervision of an NDI Technician, who shall annotate that proficiency has been sufficiently demonstrated in the remarks column of the NDI Technician/Operator Work Record (OPNAV 4790/140) (Figure 3-15) upon determination of proficiency.

(b) NDI operators who fail to maintain proficiency for over 6 consecutive months shall have their certification revoked and documented on the NDI Technician/Operator Work Record (OPNAV 4790/140) (Figure 3-15) by the cognizant QA Officer.

(c) NDI operators with revoked certifications must repeat all initial training and certification requirements to regain certification.

**NOTE: Reinstatement of a revoked NDI certification is not authorized.**

m. Newly certified NDI technicians shall require at least 3 months of supervised work experience before assignment at an activity without any experienced NDI technicians. Whenever possible, newly certified NDI technicians shall be assigned to a fleet-concentrated IMA OR FRC where the new NDI Technician can acquire supervised work experience under at least one experienced NDI Technician. Requirements are as follows:

**NOTE: An experienced NDI Technician has 3 or more years NDI experience and at least 1 recertification.**

(1) If the newly certified NDI Technician cannot be assigned to an activity with an experienced NDI Technician, the newly certified NDI Technician shall be sent by the gaining activity to an IMA or FRC enroute to the activity for a minimum of 3 months to fulfill supervised work experience requirements. If the gaining activity cannot fulfill this requirement, a naval message must be sent to the ACC or TYCOM describing inability to comply, requesting assistance or relief from this requirement. This requirement may be tailored or waived by the ACC or TYCOM when the situation warrants.

(2) Activities providing supervised work experience shall use a mentoring program. This program shall be designed to team the new NDI Technician with an experienced NDI Technician(s). The experienced NDI Technician shall record the new NDI Technician's training using a job qualification requirement (JQR). The JQR, provided by the COMNAVAIRFOR NDI Program Manager, is designed to expose the new NDI Technician to all NDI methods, process controls, and specific applications that the new NDI Technician will need to perform after completing the mentoring program.

(3) Transferring activities shall be responsible for sending NDI technicians to an NDI recertification course if NDI certification in any method has already expired or will expire within 3 months of the NDI Technician's transfer date. This also applies to activities with no X-ray capabilities and the NDI Technician has a COMNAVAIRFOR X-ray NDI method proficiency waiver of 3 years or more.

n. With the exception of the Naval Aircraft NDI school, activities authorized to certify and recertify NDI technicians and operators shall administer COMNAVAIRFOR approved written theoretical and practical tests on the NDI methods involved. Personnel being certified or recertified shall also be

required to demonstrate the ability to perform NDI (as appropriate). The objective is to provide sufficient testing of the candidate to ensure the person is competent to conduct NDIs.

o. Prior to selecting candidates for NDI Technician or NDI Operator training, and annually thereafter, an eye examination by the medical department is required to ensure natural or corrected vision conforms to the following minimums:

- (1) At least one eye capable of passing Armed Forces vision tester 20/25 or Jaeger #2 at 12 inches.
- (2) Color perception - ability to pass Falant test.

p. Periodic inspections and maintenance of NDI equipment shall be performed per schedules and procedures within applicable Navy maintenance technical manuals (including operation and intermediate maintenance technical manuals, pre-operational checklists, and MRCs) and directives applicable to the assigned equipment. The following procedures apply:

(1) NDI equipment components (repairables and consumables) are stocked in the supply system. Activities may requisition items using standard military standard requisitioning and issue procedure (MILSTRIP) requisitioning procedures.

(2) Repair of NDI equipment not considered within the capability of the IMA or FRC will be per NAVAIRINST 13680.1. Rework facilities are available for repairs deemed beyond capability of maintenance (BCM) by the IMA or FRC. To request rework, an activity's IMRL manager (or equivalent) shall contact their Support Equipment Controlling Authority (SECA). The SECA will then pass the requirement to Support Equipment Facility (SEFAC) for scheduling.

(3) Maintenance, repair, and calibration of radiographic equipment will be per NAVSEA S0420-AA-RAD-010 and NAVSEA SE700-AA-MAN-100.

q. X-ray radiation, operating, and safety precautions are the responsibility of the CO. Refer to NAVSEA S0420-AA-RAD-010 for these responsibilities.

### **3.2.2.2 Explosives Handling Personnel Qualification and Certification Program**

a. Improper handling, loading, processing, disposal, demilitarization, or testing of explosive devices has resulted in many mishaps with injuries, loss of life, damage amounting to millions of dollars, and reduced operational effectiveness. The purpose of this program is to eliminate these mishaps through proper qualification and certification of personnel. OPNAVINST 8020.14 and OPNAVINST 8023.24 provide additional details.

b. All personnel handling cartridges, CADs, pyrotechnics, and PADs fall under the Explosives Handling Personnel Qualification and Certification Program. The CO or OINC will designate, in writing, the Ordnance Certification Board for PRs and AMEs. There is no requirement to have ordnance personnel on the board. The ALSS Division Officer will ensure handling, storage, and shipping of cartridges and sealed-in CADs are per general safety precautions contained in NAVSEA OP 4, OP 5 Vol. 1, NAVAIR 11-100-1.1-CD, NAVAIR 13-1-6.1-1, and NAVAIR 13-1-6.1-2. CADs or PADs turned into station weapons department or MALS shall be packed and labeled per current directives.

c. For information concerning Hazards of Electromagnetic Radiation to Ordnance refer to the following:

- (1) NAVSEA OP 3565.

(2) NAVSEAINST 8020.7.

### 3.2.2.3 Aircraft Confined Space Program (ASCP)

The ASCP is managed by the Quality Assurance Division per [paragraph 7.6.3](#).

### 3.2.2.4 Unmanned Aircraft Systems (UAS) Program

a. The UAS Program provides a unique application of reconnaissance and surveillance through the use of recoverable and highly versatile airborne systems. These systems operate in varied environments under the control of such diverse groups as infantry and special operation forces, naval surface combatants, and aviation operating forces in support of target acquisition, strike control, and battlefield awareness. UAS range in size from small tactical individually operated air vehicles to large multi-mission air vehicles which include ground control stations and launch and recovery equipment.

b. To better identify and manage the UAS Program, the Joint Unmanned Aircraft Systems (JUAS) Concept of Operations (CONOPS) separated systems into the following performance groups based on weight, normal operation altitude, and airspeed:

	<u>Maximum Gross Take-off Weight (lbs)</u>	<u>Normal Operating Altitude</u>	<u>Airspeed</u>
Group 1	0-20	< 1200	< 100 Kts
Group 2	21-55	< 3500	< 250 Kts
Group 3	< 1320	< 18000	< 250 Kts
Group 4	> 1320	< 18000	Any speed
Group 5	> 1320	> 18000	Any speed

c. Upon acquisition of a UAS, COMNAVAIRSYSCOM will formally assign the UAS to a specific group. UAS Groups 1 through 2 that operate with Commander, Naval Surface, Naval Expeditionary Combat Command will not be governed by this instruction. UAS Groups 3 through 5 that operate with COMNAVAIRFOR shall always be governed by this instruction similar to manned aircraft per the following applicability matrix:

Group 1	No NAMP Compliance
Group 2	No NAMP Compliance
Group 3	Fully NAMP Compliant (Except for ABO, ALSS, Egress, Compass Calibration programs)
Group 4	Fully NAMP Compliant (Except for ABO, ALSS, Egress, Compass Calibration programs)
Group 5	Fully NAMP Compliant (Except for ABO, ALSS, Egress, Compass Calibration programs)

### 3.2.2.5 Aircraft Battle Damage Repair (ABDR)

a. ABDR authorizes maintenance actions during combat conditions that may provide less than 100 percent restoration of an aircraft and its subsystems or components to original strength, mission capability, or configuration. ABDR actions are authorized only during wartime to maximize the availability of mission capable aircraft for combat. ABDR evaluates and restores sufficient structural strength and serviceability to permit aircraft to fly additional combat sorties or to make a one-time flight to a designated in-theater repair activity.

b. Authorization for activities to perform ABDR is the responsibility of the battle group commander, first flag, or general officer in the combat operations chain of command. ABDR authorization cannot be delegated.

c. ABDR procedures will be used only when authorized and the time and resources needed to effect standard repairs are not available. ABDR procedures and techniques SHALL NEVER be used to repair aircraft or aircraft components not engaged in combat operations.

d. ABDR will be accomplished per the procedures of ABDR publications and other applicable maintenance technical manuals.

**NOTE: ABDR repairs not specified in publications will only be performed when approved by the cognizant ISSC engineers.**

e. Damaged aircraft will be evaluated by squadron personnel assisted by a designated rework point (DRP) Planner and Estimator (P&E), as required. O-level activities may perform ABDR when the procedures and techniques are within O-level repair capability.

f. I-Level ABDR. I-level ABDR actions are not limited to off-equipment repairs. The supporting I-level activity will provide assistance for aircraft ABDR, when the repair is within I-level capability.

g. When depot assistance is required, the CVW, ACE, or MAG MO will request assistance per the procedures of [paragraph 3.2.2.24](#). When a depot ABDR team is aboard ship or located in the operational area, the CVW or MAG MO will assign the team's ABDR priorities.

h. The ISSC or FRCWP maintenance coordinator will provide ABDR engineering assistance.

i. ABDR will be documented through normal WO or MAF procedures and logged in the aircraft logbook's Miscellaneous History Record.

**NOTES: 1. When ABDR is completed, Maintenance Control will issue an "up" WO that will remain open until a conventional repair is completed.**

**2. Cumulative ABDR actions must be monitored, flight restrictions documented, and flight crews thoroughly briefed on any flight or system operating limitations incurred by the application of ABDR.**

j. Upon return to non-combat status, conventional repair will be performed for discrepancies corrected by ABDR procedures. Aircraft requiring conventional D-level repair will be inducted at the earliest possible date.

### **3.2.2.6 Aircraft Maintenance Material Readiness List (AMMRL) Program**

a. AMMRL Program is the title of the overall program which provides the data required for the effective management of SE at all levels of aircraft maintenance. The program also provides data for the management of automatic test equipment (ATE) related operational test program sets (OTPS). The program covers over 37,000 end items of aircraft maintenance SE and OTPS elements (IMRL items) used throughout the Navy and Marine Corps by aircraft maintenance activities. The program recognizes ship, MALS, base, FRC, and Marine Aviation Logistics Support Program (MALSP) loading combinations and the various requirements for numerous airframe configurations, power plants, and avionics systems. The procedures for allowance and inventory control are defined in NAVAIRINST 13650.1.

(1) Maintenance (including calibration), inventory control, and reporting of SE are integral parts of maintaining aircraft and airborne weapon systems. It is essential that procedures and assigned responsibilities published here be clearly understood and complied with to ensure maximum SE readiness and use are achieved. The definition of SE and the various categories of SE are in [Appendix A](#). This section applies primarily to those items of SE included in the AMMRL Program and in MFs. Many items excluded from the AMMRL are considered part of the basic facility (ship or station) and are governed by other directives. The objective of the NAMP, as it relates to SE, is to achieve and maintain maximum

material readiness, safety, and conservation of SE through command attention, policy direction, and appropriate administration by all activities responsible for such equipment. Included are:

(a) Maintenance (including calibration) and repair of SE at the level of maintenance which will ensure the best use of resources.

(b) Protection of SE from the elements by using active cleaning, corrosion control, preservation, and storage programs.

(c) Use of a perpetual asset inventory control system.

(d) Collection, analysis, and use of pertinent data to effectively improve SE material readiness, safety, and use while simultaneously increasing the efficient and economical management of personnel, monetary, and material resources.

(2) SE shall be maintained and repaired by reporting custodians and supporting activities under the classification of maintenance functions. Repair and calibration of the category of SE, termed Test, Measurement and Diagnostic Equipment (TMDE), shall be accomplished under either the COMNAVAIRSYSCOM Metrology and Calibration (METCAL) or Rework Program (as appropriate). Required rework of SE beyond the capability of the I-level shall be performed under the provisions of NAVAIRINST 13680.1 at the next level of maintenance, normally an FRC or commercial contractor. COs shall confirm all assigned items of SE are properly maintained. Calibration of SE, to include TMDE designated in NAVAIR 17-35MTL-1, is required and shall be performed at the lowest calibration level possessing the capability. D-level calibration program functions are described in NAVAIRINST 13640.1.

b. The objective of this program is to document technical and cataloging data and in-use asset information concerning the IMRL items which can be used by management to:

(1) Determine and establish allowance requirements for SE at activities performing O-level, I-level, or D-level maintenance.

(2) Provide standardized inventory control procedures.

(3) Assist in the redistribution of in use assets.

(4) Provide a base for budgeting requirements.

(5) Assist in measuring material readiness.

(6) Provide the flexibility Marine Corps aviation activities require to rapidly configure SE and associated logistics support to sustain the Aviation Combat Element (ACE) of any task organized Marine Air Ground Task Force (MAGTF).

c. Policies, procedures, and responsibilities contained here apply to all Navy and Marine Corps activities concerned with the operation, maintenance (including calibration), overhaul, control, and support of SE. Various commands are involved in the acquisition, logistic support, and maintenance of SE. CSE is managed by the Aviation SE Program Manager (PMA-260). PSE is managed by the appropriate Logistics Management Department (AIR-6.7.6) Aircraft/Weapon System Program Manager as part of the Aircraft/Weapon System Program. Tasks listed in [subparagraphs 3.2.2.6c\(1\)\(a\) through \(s\)](#) also apply to the management of PSE by the appropriate Aircraft/Weapon System Program Manager. The following provides an overview of the SE management system by identifying major activities and their responsibilities:

(1) COMNAVAIRSYSCOM (PMA-260) as the Aviation SE Program Manager shall:



(a) Design, develop, test, evaluate, acquire, and cause delivery of aircraft weapon systems and aeronautical CSE.

(b) Establish new or revised CSE requirements in Support Equipment Resources Management Information System (SERMIS).

(c) Plan, program, budget, manage, and execute CSE projects to ensure fleet requirements are met.

(d) Use established functional organizations, field activities, laboratories, other appropriate commands and agencies, as well as commercial contractors, in carrying out required plans and programs.

(e) Establish the requirements and procedures to ensure all tasks, efforts, and progress toward accomplishment of CSE program objectives are being conducted by the functional groups, field activities, laboratories, other commands and agencies, and commercial contractors.

(f) Use NAVAIRWARCENs and FRCs to execute CSE programs and projects.

(g) Establish plans and procedures for the development and acquisition of ILS for CSE.

(h) Prepare and execute CSE acquisition logistics support plan (ALSP) and user's logistics support summary (ULSS).

(i) Prepare end item CSE maintenance plans.

(j) Ensure ISSCs are established for all CSE programs.

(k) Provide funding for initial CSE installations.

(l) Plan for and provide technical documentation and training requirements to support CSE maintenance concepts, plans, and procedures.

(m) Provide primary COMNAVAIRSYSCOM headquarters contact for all CSE logistics in support of the fleet, Marine Corps, and field activities.

(n) Work with each aircraft/weapon system program manager to ensure demands and requirements for CSE are fulfilled in a satisfactory manner.

(o) Chair the CSE Configuration Change Control Board.

(p) Function as the centralized SE inventory management authority responsible for coordinating redistribution of in-use assets among the SECAs, prioritization of SE procurement, and distribution of new SE, as the PSECA.

(q) Manage and direct the AMMRL Program.

(r) Establish policies and procedures and direct the SE Retirement Program.

(s) Act as the focal point on SE policy matters, including ATE and related software.

(2) COMNAVAIRSYSCOM (AIR-6.7) shall manage and fund the METCAL, SE D-level Rework, and MF Programs.

(3) COMNAVAIRSYSCOM (AIR-5.0D) shall:

(a) Act as the liaison for COMNAVAIRSYSCOM activities regarding problems associated with maintenance, repair, and rework of SE.

(b) Perform SECA functions for SE assigned to COMNAVAIRSYSCOM activities.

(c) Manage and carry out AMMRL Program functions under NAVAIRINST 13650.1.

(4) SECAs shall:

(a) Schedule SE into DRPs.

(b) Issue and control the distribution of SE within commands. Where possible, minimize logistic support requirements by using base loading techniques, for example, placing like items of SE at a single site.

(c) Implement, coordinate, and control maintenance, inventory control, and MDS reporting programs for SE within their command.

(d) Manage the I-level METCAL Program and implement calibration policies within their command.

(e) Propose and process recommended changes and revisions to maintenance directives for SE.

(f) Propose and process recommendations for new SE.

(g) Schedule and maintain IMRLs for all applicable Navy and Marine Corps aircraft maintenance using guidance provided by COMNAVAIRSYSCOM (PMA-260).

(h) Propose and process recommendations for changes to SE allowances, and provide management coordination for proper execution of the AMMRL Program under NAVAIRINST 13650.1.

(i) Implement and monitor fleet SE training programs for operation and maintenance of SE.

(j) Review and validate all requisitions submitted by subordinate activities for IMRL reportable SE prior to submission to the Supply System.

(5) Naval Education and Training Command (NETC) shall:

(a) Develop required O-level and I-level SE maintenance training courses for user activities as approved by CNO (N98).

(b) Assist SECAs and other activities, through CENNAVAVNTECHTRA, implement training programs as funded by COMNAVAIRSYSCOM with CNO (N98) approval.

(c) Conduct SE maintenance, MDS, and AMMRL training in formal schools.

(6) The reporting custodians, including Commander, Naval Surface Forces Atlantic/Pacific activities, shall:

(a) Ensure all maintenance and calibration requirements are accomplished.

(b) Ensure utilization goals are achieved, if established.

- (c) Report MDS and SE transactions.
  - (d) Be responsible for material condition of SE, including adequate protection from the environment.
  - (e) Accomplish, record, and report TD compliance using the MDS.
  - (f) Establish and maintain SE inventory control reporting.
  - (g) Conduct physical IMRL inventories annually and as directed by the SECA. Ensure excess SE is reported to the SECA with a request for disposition instructions. Unless otherwise authorized by the SECA, ensure excess equipment is transferred to the supply system under NAVAIRINST 13650.1.
  - (h) Review the IMRL frequently, with emphasis on the evaluation of SE allowances to ensure these allowances remain consistent with the actual maintenance support requirement. Submit all reports concerning SE inventory, SE transactions, and proposed changes to SE allowances, following NAVAIRINST 13650.1 and SECA instructions.
  - (i) Ensure all requisitions for reportable IMRL SE, including those in excess of authorized allowance, or which is not listed in the activity's IMRL as an authorized item, are submitted via the SECA. The requisition must contain full justification of the requirement for such SE.
  - (j) Issue SE licenses.
  - (k) Subcustody SE to supported activities for their use.
  - (l) Review supported activities applicable operating and maintenance procedures for SE subcustodied to them.
  - (m) Perform maintenance and submit MDS reports on supported activities' IMRL SE.
  - (n) Conduct SE training to qualify operators under approved syllabi.
  - (o) Conduct SE personnel and facility requirements planning.
  - (p) Assume the responsibility for SE listed in their IMRLs.
- (7) D-level activities are responsible for rework, modification, and calibration of SE inducted per NAVAIRINST 13680.1 and NAVAIRINST 13640.1. The D-level shall:
- (a) Designate an SE coordinator.
  - (b) Act as ISSC for PSE for assigned weapon systems and equipment.
  - (c) Plan the rework capability, using milestone charts, to meet scheduled requirements, and obtain all publications, drawings, training, and skills required, when designated by the COMNAVAIRSYSCOM ALSP or ULSS as DRP for SE end items or components.
  - (d) Ensure examination and evaluation is performed on all SE upon arrival at the depot, all required material and outstanding changes and bulletins are ordered and complied with, and all applicable approved changes are scheduled for incorporation during rework.

(e) Document SE rework, modification, and calibration on the SE Custody and Maintenance History Record (OPNAV 4790/51) and issue a current record with each item of SE processed. A new SE Custody and Maintenance History Record (OPNAV 4790/51) shall be created whenever the record cannot be obtained from the previous reporting custodian.

(f) Ensure SE rework and calibration records are maintained and reports provided as required.

(8) SE Inventory Control Point (ICP) and Program Support Inventory Control Point (PSICP) are activities assigned material management responsibility for end items of SE. All ICPs are responsible for computing SE requirements and procuring assigned end items to fill requirements. Assignment of ICPs for SE may be found in NAVSUP Publication 485. The PSICPs are NAVSUP WSS-PHIL and NAVSUP WSS-MECH.

(a) NAVSUP WSSs shall:

1. Develop and implement policies and procedures relating to SE supply support, including supply support management plan (SSMP), allowance requirements register (ARR) criteria, interim and augmented support, and stock coordination.

2. Perform material management responsibilities for COMNAVAIRSYSCOM cognizance SE line items.

3. Ensure an adequate quantity of assigned SE is available for distribution under fleet and COMNAVAIRSYSCOM requirements and within available resources.

4. Initiate follow-on procurement for assigned SE.

5. Issue SE, based upon allowances established by COMNAVAIRSYSCOM, and maintain a record of all accountable items of SE released to miscellaneous activities, for example, contractor support programs, loaned, bailment, not assigned to a major operating command, or not under the cognizance of the AMMRL Program for reporting purposes.

(b) PSICPs shall:

1. Provision, procure, and distribute repair parts for assigned SE.

2. Maintain lists and provisioning codes for repair parts for assigned SE.

3. Ensure supply support requests for repair parts not managed by the PSICP are accepted by the assigned ICP.

4. Prepare SSMP and milestone charts for COMNAVAIRSYSCOM.

5. Prepare ARRs and equipment reference lists for interim spare part support of SE and aviation consolidated allowance lists.

(9) SE ISSCs are activities assigned responsibility by COMNAVAIRSYSCOM to perform specified maintenance engineering functions for SE. They provide maintenance engineering assistance, perform EIs, review and take action on beneficial suggestions, maintain out-of-production maintenance technical manuals, Product Quality Deficiency Reports (PQDR), Hazardous Material Reports (HMR), Navy Engineering and Technical Services (NETS) reports and suggestions, and develop Engineering Change Proposals (ECP).

(a) ISSCs for SE are:

1. NAVAIRWARCENACDIV Lakehurst, NJ, is the ISSC for most CSE, less calibration standards. In addition, NAVAIRWARCENACDIV Lakehurst, NJ, is the ISSC for common, non-IMRL equipment, such as drill presses, grinders, lathes, sewing machines, and welders used in support of aircraft, aircraft components, and SE. NAVAIRWARCENACDIV Lakehurst, NJ, shall coordinate test and measurement equipment space, power, and environmental requirements for all ships operating aircraft. In addition, NAVAIRWARCENACDIV Lakehurst, NJ, is responsible for the specified engineering, acquisition, and ILS tasks for SE.

2. The ISSC assigned ISEL responsibilities for the weapon system or equipment, for example, H-60, F/A-18, F-14, is also the ISSC for PSE, which supports the weapon system or equipment.

(b) Other supporting activities or field activities provide specialized support for SE similar to the support provided for aircraft. These activities include:

1. NATEC provides coordination of technical data distribution and field engineering assistance and instruction for the maintenance, repair, and operation of SE.

2. NAVAIRWARCENACDIV Lakehurst, NJ, Research and Engineering Group, Support Equipment and Aircraft Launch and Recovery Equipment Department, Evaluation and Verification Division (Code 4.8.12), conducts test and evaluations of SE including supportability evaluations.

3. NWADIV Corona, CA, under the management control of COMNAVSEASYSYSCOM provides technical guidance to the METCAL Program. Use of the NWADIV by COMNAVAIRSYSCOM has been coordinated with and authorized by COMNAVSEASYSYSCOM. NWADIV provides SE calibration procedures, technical guidance, and services as required.

4. Representatives for COMNAVAIRSYSCOM in provisioning and source coding repair parts for SE.

d. The following apply to the AMMRL Program and are defined in [Appendix A](#):

- (1) Accountable Item.
- (2) Prime Item.
- (3) Alternate Item.
- (4) Custody Codes.
- (5) Excess In-use Accountable SE.
- (6) IMRL.
- (7) OTPS.
- (8) SE.
- (9) PSECA.
- (10) SECA.

(11) SERMIS.

(12) LAMS.

(13) TPS.

e. An IMRL is constructed for all Navy and Marine Corps aviation maintenance activities by extracting applicable portions of the data from SERMIS. The on hand quantities listed in the IMRL are based on reports of IMRL item transactions and physical inventories. Data is compiled and maintained to determine material supportability for each IMRL activity. The data is also consolidated to produce Type Wing, MAW, SECA, and Navy wide listings. IMRLs identify material requirements and provide a basis for SE procurement. This information aids decisions regarding overall readiness posture, budget forecasts, equipment procurement, and redistribution of assets.

f. NAVAIRINST 13650.1 contains detailed IMRL information.

(1) Content and Format. IMRLs are presented in five sections, with a monthly supplement. These sections are employment data, change list, index, main body, and the activity inventory record.

(2) IMRL Supplement. At each monthly SERMIS source data update, the supplement is produced to provide an activity with a list of the changes to their IMRL that have occurred since the printing of the currently held IMRL or previous supplement. Correct use of the supplement makes it an informative and labor saving device, since only the items appearing on the list need to be reviewed. All other items on the basic IMRL remain the same. The change list only reflects changes from the last supplement to the printing of the new IMRL. All changes included in the IMRL supplements are reflections of updates to the SERMIS database.

(a) The changes included in the supplement are:

1. Additions, deletions, and changes to the prime NSN or PN.
2. Custody code.
3. Computed allowance.
4. Total authorized allowance (tailoring).
5. List codes.

(b) All changes included in the IMRL supplements are reflections of updates to the SERMIS database.

(c) Upon receipt of the current supplement, initiate the following action(s) for those new items listed and required, but not on hand:

1. Submit requirement request(s), via electronic mail, to the area commander or SECA (as applicable) for screening and possible redistribution of available excess IMRL SE prior to submitting requisitions to the supply department as follows:

- a. Order items with an even numbered cognizance symbol (other than 2V or 6R).
- b. Order, or include in the next budget submission, those items having an odd numbered cognizance symbol.

2. For 6R or 2V deficits for National Item Identification Numbers (NIIN) other than LL-PRE-XXXX NICNs (planned future procurements), add requirements to the activity's annual request for APN-7 candidates list when requested by SECA.

(d) Submit an IMRL Revision Request per existing instructions for all items added but are determined as "not required to perform assigned mission" or have been deleted but are required.

(e) Request disposition per existing instructions for those deleted on hand items which are not required.

(f) Local Asset Management System (LAMS) maintains inventory, utilization, and readiness data for SE and IMRL items. The IMRL Manager is responsible for all IMRL accounting. IMRL transaction conversations are designed to support the automated IMRL and to produce the reports associated with it. IMRL inventory gains and losses, reidentifications, inventory updates, subcustody information, and item requisitions and receipts are entered. LAMS provides: IMRL listings sorted by Work Center, Part Number, Support Equipment Transaction Report (TR) (OPNAV 4790/64), IMRL Subcustody Report, and Excess/Deficit Reports. TR data is passed to SERMIS and SERMIS is updated accordingly.

(3) IMRL Maintenance. The MO will appoint an IMRL Manager who is responsible to the Material Control Officer for the maintenance of the IMRL. The IMRL Manager shall:

(a) Report by TR to the SECA, all transactions, such as the receipt of new items, transfer of items on hand, surveys, or changes in on hand quantities.

(b) Conduct an annual physical inventory and submit the inventory report to the SECA via the chain of command.

(c) Ensure IMRL revision requests are submitted for all required changes, additions, or deletions.

(d) Submit letters through the chain of command requesting disposition instructions for excess SE.

**NOTE: SE listed in the IMRL will be on hand, on order, or certified not required for mission support by submission of a revision request.**

(e) Submit surveys.

(f) Maintain custody records for on hand assets.

(g) Attend the formal Support Equipment (SE) Asset Manager course (Course C-555-0026) before assignment as IMRL Manager.

**NOTE: For Marine Corps activities, the annual inventory will be validated with the SSD which shall maintain the master custody file for all supported squadrons.**

(4) IMRL Transaction Reporting. All items listed in the IMRL are subject to transaction reporting. All transactions concerning IMRL items should be reported at the time they occur. Complete, accurate, and timely transaction reporting is vital to effective budgeting, procurement, and overall readiness.

(a) Types of Transactions. The following are types of transactions reported by IMRL holders (refer to SECA instructions for procedures):

1. Additions/Increases. Includes all changes in on hand quantities due to receipt of new or additional items, gains by physical inventory, and reidentification.

2. Deletions. Includes decreases in on hand quantities due to transfer, loss, or reidentification.

3. Changes in Condition. Reported SE determined to be beyond economical repair will be surveyed and reported accordingly.

(b) Reports. The Support Equipment Transaction Report (OPNAV 4790/64) is used by IMRL activities for SE transaction reporting. Figures 3-17 and 3-18 show the TR card with an explanation of the various entries for the activity submitting the report.

(c) Reporting Procedures. Requirements for SE transaction reporting are similar for all SECAs; however, their instructions should be consulted for details.

(5) Annual Inventory. Although continuous management control of SE is maintained by timely submission of TRs, an annual inventory of SE must be conducted, records corrected, and a report submitted.

(a) Inventory. The annual physical inventory may be conducted any time during the calendar year at the discretion of the SECA. The inventory must be a wall-to-wall inventory conducted by a team composed of personnel who are knowledgeable in identification of all types of SE.

(b) Corrective Action. The results of the physical inventory will be matched against the activity's custody records. All discrepancies will be investigated and differences reported by TRs.

(c) Reports. Written reports are submitted to the SECA via the chain of command.

(6) IMRL Revision. SE allowances are normally the same for two activities supporting the same number and type of aircraft under similar conditions. However, the AMMRL Program provides procedures for tailoring these allowances, up or down, when conditions change or tailoring is otherwise warranted. The activity holding the IMRL for which a change is desired initiates tailoring action by submitting an IMRL Revision Request (NAVAIR 13650/1). The IMRL Revision Request is available in LAMS.

(7) Reporting Excess IMRL Assets. Although reporting transactions, taking inventory, and submitting change requests are important elements in the maintenance of an IMRL, the reporting of excess SE is just as important. These reports enable the SECAs to redistribute SE to other activities. When excess SE exists, activities should notify the cognizant SECA by letter or message, via the chain of command, requesting disposition instructions, or submit an IMRL Revision Request for increased authorized allowance. Inter-SECA redistribution actions may be taken without PSECA approval providing the concerned SECAs are in agreement. Conflicts concerning inter-SECA redistribution actions will be resolved by the PSECA.

(8) Surveys. Items which have been lost or are in a condition beyond economical repair, but not through normal use, should be surveyed. Procedures for initiating and processing surveys are in Chapter 5. Surveys for most IMRL items must be approved by the SECA. The IMRL manager should consult applicable SECA instructions for guidance in each case. After approval is obtained, surveyed items are reported via a TR and disposed of as directed.



### 3.2.2.7 Configuration Management (CM) Program

a. COMNAVAIRSYSCOM has management responsibility for the CM Program. It was established to permit achievement of required item performance, operational efficiency, logistic support, and readiness through effective management of item configuration requirements. NAVAIRINST 4130.1 establishes policy and procedures for configuration identification and management of necessary engineering changes with respect to content, cost, evaluation, timing of processing, and implementation. Implementation of approved configuration modifications is accomplished through the TD system and is monitored by the Technical Directive Reporting System (TDRS) Program. NAVAIR 00-500C will be the governing and primary screening tool for TD compliance of all aircraft and aircraft engines.

b. Specific TD system information is in MIL-D-81992B and NAVAIR 00-25-300.

(1) CM is a process for establishing and maintaining consistency of a product's performance and functional and physical attributes with its requirements, design, and operational information throughout its life. The CM effort includes identifying, documenting, and verifying the functional and physical characteristics of an item; recording the configuration of an item; and controlling changes to an item and its documentation. It shall provide a complete audit trail of decision and design modifications. CM includes three basic elements: configuration identification, configuration control, and configuration status accounting. CM policies/procedures, definitions, and basic elements are in NAVAIRINST 4130.1 and are applicable to SE.

(a) NAVAIR 00-500C will reflect all applicable TDs assigned to aircraft and aircraft engines. TD compliance shall be documented in the aircraft logbook, Aeronautical Equipment Service Record (AESR), Module Service Record (MSR), Assembly Service Record (ASR), Scheduled Removable Component (SRC), and Equipment History Record (HER) (as applicable). COMNAVAIRSYSCOM (AIR-6.1) APMLs and ISSCs will review and provide concurrence with COMNAVAIRSYSCOM (AIR-6.8.5) TDRS database for applicable NAVAIR 00-500C reports on a semiannual basis.

(b) The Technical Directive Compliance Program ([paragraph 10.10](#)) is an integral part of CM. An important component within the TD Program is TD compliance documentation, specifically the configuration status accounting element. It provides the controlling custodian and other management personnel with the information necessary to manage modification programs and to make SE distribution/redistribution decisions.

(c) Permission for local modification of SE must be obtained from the controlling custodian or COMNAVAIRSYSCOM. Procedures for obtaining permission are in [paragraph 3.2.2.7e](#).

(2) For AWSE items, TD compliance may be assigned to either the IMA or FRC or the Weapons Department. Additionally, TD compliance for AWSE may be assigned to the Weapons Department with an assist by AIMD. This information will be noted in the instructions contained in the TD. When assigned TD compliance, the Weapons Department will be responsible for only those items which are on subcustody to the Weapons Department. IMAs/FRCs will accomplish TD compliance for AWSE which is on subcustody to other departments, divisions, or supported activities.

c. TDs direct the modification or one-time inspection of all COMNAVAIRSYSCOM (including field activities) procured equipment, in either the contractor's, Navy's, or Marine Corps units, and they identify the documentation to be completed to show a TD was incorporated or accomplished.

(1) Requisition formal TDs by title and number using the DD 1348. Refer to NAVSUP Publication 485 for applicable procedures. Requisitions are submitted to the appropriate inventory control point listed in NAVICP Publication 2003.

(2) NAVAIR 00-25-300 and [paragraph 10.10](#) provide detailed TD Compliance Program information.

d. The TDRS Program is used for recording, by specific aircraft, engine, and equipment, the applicability and incorporated or not incorporated data for all TDs requiring logbook/records or CM ALS records update.

(1) Application of these lists to the logbook or CM ALS records applies to all aircraft designated by COMNAVAIRSYSCOM. This application continues in effect for each designated aircraft, until the specific aircraft is removed from the inventory of naval aircraft.

(2) All TDs state specifically where compliance will be recorded in the applicable aircraft logbook/records, TD Requirements Lists, and Technical Directives (OPNAV 4790/24A) page. Activities with NTCSS Optimized OMA NALCOMIS shall use the CM ALS TD records.

**NOTE: Lists Nos. 02 and 04 may replace the Technical Directives page for aircraft only. All other Lists Nos. 02 and 04 are provided for use as a management tool only. For aircraft, care must be taken before destroying Technical Directives pages. Production equivalents performed on the aircraft by the manufacturer are not presently covered by the TDRS Program and will not appear on the Lists Nos. 02 and 04, therefore, any Technical Directives page with production equivalent entries must be maintained for historical reasons.**

(3) The TDRS Program consists of:

(a) List No. 01, Applicability List. A list of effective TDs which provides specific applicability information.

(b) List No. 02, Technical Directive Requirements Not Incorporated (NINC) Listing. A list of effective TDs, applicable to a specific BUNO/SERNO but not incorporated. It is distributed quarterly to the reporting custodian.

(c) List No. 03, Technical Directives Status Accounting INC/NINC Summary Matrix. This summary report lists BUNO, TDs, and incorporation status. This report also allows the Type Wing to easily monitor configuration of assigned aircraft and is distributed quarterly to the Type Wing.

(d) List No. 04, Technical Directives Requirements Incorporated (INC) Listing. A list of effective TDs applicable to a specific BUNO/SERNO and reported as incorporated. It is distributed quarterly to the reporting custodian.

(e) List No. 04H, History File. This file is maintained by COMNAVAIRSYSCOM (AIR-6.8.5) to reduce active file volume and operating cost. The List No. 04H is produced and distributed annually to reporting custodians and marked "Historical Inc., Retain for Permanent Record".

(f) NTCSS Optimized OMA NALCOMIS activities shall use the data elements ALS TD records. CM ALS records will have combined lists Nos. 02 and 04 into one electronic record.

**NOTES: 1. Care must be taken when removing List No. 04 each quarter to ensure List No. 04H is not mistakenly removed. Not all aircraft have a history baseline, therefore, not all aircraft have List No. 04H available. Contact the appropriate TDRS Program Manager if a question develops.**

**2. This does not apply to NTCSS Optimized OMA NALCOMIS activities with electronic TD records.**

(4) The TDRS Program Manager at COMNAVAIRSYSCOM shall comply with the following:

(a) Develop and maintain computer programs required to store, process, and retrieve information from the TDRS database.

(b) Receive notices of errors in the published Lists Nos. 02 and 04 from reporting custodians. Errors are reported by the custodian by annotating List No. 02. Within 1 week after List No. 02 is received at COMNAVAIRSYSCOM, the TDRS Program Manager will correct the file and mail on the next mailing cycle.

(c) Review the preliminary copy of the TD during verification to ensure those data elements affecting the TDRS Program are accurate and trackable.

(d) Insert XRAY messages when received and ensure the PED has been updated when equipment is inducted for rework. Update engine inventory using monthly Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) data, and ensure the TDRS database correctly identifies latest engine status and module assignment.

(e) Review and correct aviation 3M transaction and error reports when received. Notify the cognizant controlling custodian or Type Wing of excessive error reporting.

(f) Add new equipment to the database as required.

(g) Maintain close liaison with users of the TDRS Program and provide technical information as requested.

(h) Print and distribute the following TDRS reports:

1. Copies of Lists Nos. 02 and 04 to the reporting custodian quarterly.
2. A copy of List No. 04H to the reporting custodian annually.
3. A copy of List No. 01 to the Type Wing and reporting custodian semiannually.
4. Copies of List Nos. 02 and 04 to the contractor (as applicable) when the aircraft is scheduled for off-site standard rework or modification directed by the T/M/S Program Manager.
5. Copies of List No. 03 to the Type Wing quarterly.
6. Specified reports as requested.

(5) Reporting custodians shall:

(a) Prior to inserting new Lists Nos. 02 and 04 in the TD section of the logbook, verify the lists with the previous lists. The replaced lists may be destroyed. Any errors or omissions from the lists will be reported to the TDRS Program Manager within 30 days of receipt of the quarterly lists. Any inaccuracies will be annotated on List No. 02, using the appropriate status code. Lists Nos. 02 and 04 status codes are: P-previously incorporated, C-complied with, or D-does not apply. TDs appearing on List No. 04 as INC, but are actually NINC, should be lined out and written in on List No. 02 using the appropriate status code. The annotated List No. 02 is forwarded to: COMMANDER, ATTN AIR-6.8, NAVAL AIR SYSTEMS COMMAND, 47060 MCLEOD ROAD BLDG 447, PATUXENT RIVER MD 20670-1626.

**NOTE: Use of Status Code D must be verified by a QAR.**

(b) Report the incorporation of TDs on all equipment in their custody through the aviation 3M System [Chapters 15](#) and [16](#). Activities with NTCSS Optimized OMA NALCOMIS shall report incorporation of TDs via WO data replication or CM.

(c) Annually, verify and insert the new List No. 04H in the logbook. After removing and verifying with the new List No. 04H, destroy the old List No. 04H; however, the Lists Nos. 04 and 04H will indicate the INC status of all applicable TDs.

**NOTES: 1. Compliance with above procedures does not negate the reporting custodian's responsibility for making appropriate entries in other sections of the aircraft logbooks, CM ALS, AIR, or weight and balance (W&B) record.**

**2. This does not apply to NTCSS Optimized OMA NALCOMIS activities with electronic TD records.**

(6) At any given time, the annotated List No. 02 and current List No. 04 will reflect the TD status of aircraft. For the types and categories of TDs and supply data refer to [Chapter 5](#).

e. This instruction specifies COMNAVAIRSYSCOM is the only authority to modify or withhold modification of aeronautical equipment. The CNO and COMNAVAIRFOR does not desire to prevent or discourage operating activities from using their foresight or initiative in performing work of an experimental nature to correct or overcome quality deficiencies in aeronautical equipment. However, modification of more than one aircraft or unit prior to COMNAVAIRSYSCOM approval is not authorized. Authorization must be obtained from the ACC or TYCOM prior to any modification. Particular attention will be directed to the following:

- (1) Logistic material requirements.
- (2) Use of space reserved for approved changes.
- (3) Crew confusion upon transfer of aircraft and equipment.
- (4) Expenditure of additional unplanned man-hours and material.
- (5) Configuration to provide the optimum conditions of safety, operational, and material readiness.
- (6) Performance characteristics being adversely affected.
- (7) Impact on weight and center of gravity with respect to the associated limits.

f. ACC or TYCOM approval

(1) Operating activities shall inform the ACC or TYCOM of the desire to prototype a modification. They shall provide justification and a description of the change to be made and the unit/system involved.

(2) The ACC or TYCOM shall inform the requesting activity whether or not the action is approved, deferred, or cancelled, after ensuring:

- (a) The equipment is not removed to support other operational requirements.
- (b) The equipment does not require special tools and procedures.
- (c) The change proposed has not been previously approved.

(d) The change has not been or is not currently being prototyped by another activity.

(e) Appropriate flight clearances are obtained from COMNAVAIRSYSCOM (AIR-4.0P) per OPNAVINST 3710.7.

(3) The operating activity shall modify the data in the aircraft W&B Handbook to reflect the W&B impact of the modification. Specifically, the new basic weight and moment of the aircraft shall be derived and recorded in Chart C, any new items of removable equipment shall be added to Chart A, and any revisions to the loading data shall be incorporated into Chart E. The new basic weight and moment can be derived by calculation, using the best data available for the component elements of the modification, but for extensive modifications the aircraft shall be weighed after completion of the modification.

g. Upon satisfactory completion and evaluation of the prototype, the originating activity will submit a rough draft TD per NAVAIR 00-25-300 format. Such submission is made via the chain of command to the ACC or TYCOM. After ACC or TYCOM concurrence, the rough draft TD will be routed per NAVAIR 00-25-300 for review and approval. The TD will be prepared and published (as applicable).

### 3.2.2.8 Weight and Balance (W&B) Program

a. The W&B Program directs procedures to verify aircraft weight and center of gravity are within established limits. COMNAVAIRSYSCOM (AIR-4.1.7) is the engineering authority for the W&B Program. NAVAIR 01-1B-50 (Organizational, Intermediate and Depot Maintenance Aircraft Weight and Balance) is the authoritative source for determining when an aircraft must be weighed, weighing procedures, and record keeping requirements.

b. W&B technical data and the following forms may be obtained from the Navy Data Distribution System (NDDS) at Web site (<https://ndds.navair.navy.mil>) or by contacting NAVAIRSYSCOM AIR-4.1.7 by email ([weight\\_balance.GM.fct@navy.mil](mailto:weight_balance.GM.fct@navy.mil)).

(1) T/M/S specific Chart A and E.

(2) AWBS Auto Limits Files.

(3) Electronic Form F Generators (if applicable) and their associated user manual and authorization letter.

**NOTE: T/M/S specific Chart E, Form F Generators, and Auto limits Envelope files can be downloaded from NDDS or requested by email ([weight&balance@navy.mil](mailto:weight&balance@navy.mil)).**

c. DD 365 series manual forms are available for download in a fillable .pdf document from the DOD Forms Management Web site (<http://www.dtic.mil/whs/directives/forms/>).

d. New aircraft are typically delivered with Charts A, C, and E and other required forms. Chart C contains the delivery basic weight and moment.

e. D-level activities, major flight test activities, and major overseas aviation rework establishments must maintain aircraft weighing capability to include equipment (scales or load cells), certified weighing personnel, and mobile weighing services for aircraft that need to be weighed at remote sites.

f. Custodians of weighing equipment are responsible for having weighing scales calibrated in accordance with Navy METCAL requirements, processes, and procedures.

g. Personnel assigned responsibility for weighing aircraft must maintain qualifications per NAVAIR 01-1B-50 paragraph 8.2.4c(2).

h. W&B Officer

(1) Aircraft Reporting Custodians must designate the Maintenance Material Control Officer or equivalent as the Weight and Balance Officer. Additional qualified personnel may be designated as Weight and Balance Technicians, if required to assist the Weight and Balance Officer in accomplishing program requirements. Commands that deploy detachments must designate a Weight and Balance Officer for each detachment. Designations will be in writing via the Monthly Maintenance Plan (MMP).

(2) Qualifications. Prior to designation, the Weight & Balance Officer and Weight and Balance Technicians must successfully complete one of the following courses:

- (a) Naval Aviation Maintenance Program Indoctrination course (Course C-4D-2012).
- (b) Naval Aviation Maintenance Program Management course (Course C-4D-2013).
- (c) Aircraft Weight and Balance course (Course C-516-0001).

(3) Responsibilities. The Weight and Balance Officer must:

(a) Verify W&B Handbooks have all required forms, and are current and in the correct format per NAVAIR 01-1B-50 section 8.2.2c(1).

(b) Verify compliance with W&B flight clearance procedures per section 4 of OPNAVINST 3710.7.

(c) Record W&B impacts of changes to aircraft configuration, including incorporation of TDs, in the W&B Handbooks of affected aircraft and verify the basic weight and moment values in Chart C of each W&B Handbook are correct. If the Weight and Balance data of a TD is suspected to be in error, immediately contact the Type Wing or MAW for resolution. If the Type Wing or MAW concurs there is an error, they will notify NAVAIRSYSCOM AIR-4.1.7 via email ([weight\\_balance.GM.fct@navy.mil](mailto:weight_balance.GM.fct@navy.mil)) for concurrence and submit a TPDR (category dependent on the severity) via JDRS Web site (<https://jdrs.mil>). NAVAIR 01-1B-50 provides additional guidance.

**NOTE: COMNAVAIRSYSCOM (AIR-4.1.7) is the W&B Configuration Management authority for revision of Chart A or Chart E. COMNAVAIRSYSCOM (AIR-4.1.7) will determine when changes to the basic aircraft configuration, either singular or cumulative, necessitate a complete revision of Chart A or Chart E.**

(d) Comply with aircraft weighing requirements of NAVAIR 01-1B-50, Section 8.2.8.

**NOTE: Commands using NTCSS Optimized OMA NALCOMIS must ensure the Basic Weight for each aircraft is accurately calculated and reflected in all flight records.**

(e) If ABDR is performed, verify the weight and location of materials used in the repair did not cause unacceptable aircraft W&B. An entry must be made in the Miscellaneous History section of the aircraft logbook to document W&B Officer certification.

(f) Utilize the most current release of Automatic Weight and Balance System (AWBS).

(g) Maintain an account on the AWBS Web site in order to receive notifications on AWBS updates, access to AWBS issue resolutions, and access to the AWBS Central Server.

(h) Retain Historical DD365 forms to enable authenticating current W&B data as computed on the AWBS. Compare new inventory with the last completed inventory, and note any changes in the items or quantities of equipment installed in the aircraft. Historical records may be discarded after the aircraft is reweighed, information is posted to the Chart C, and a new Form B is entered in the W&B Handbook per NA 01-1B-50 [chapter 4.3.6.1](#).

(i) Perform an inventory and update electronic W&B data when aircraft are received and prior to transfer. Insert printed copies in the Weight and Balance Handbook per NAVAIR 01-1B-50 section 8.2.2c.

**NOTES: 1. F-35 aircraft electronic inventory is an acceptable alternative to performing a visual inventory of installed components.**

**2. AWBS does not relieve reporting custodians of the requirement to maintain a hard copy record of the Weight and Balance handbook unless authorized by NAVAIRSYSCOM (AIR-4.1.7). For example, the F-35 aircraft Weight and Balance Handbook is entirely electronic and not required to be maintained in hard copy.**

(j) Maintain an electronic master back-up file of all AWBS data for each aircraft. Use of the USN Central Server is the preferred method for storage, transfer, and back-up of AWBS files. If the Central Server is utilized, no other back-up method is required. The Central Server can be located at (<https://awbs.hill.af.mil>). If removable media (CD-ROM or other approved media) is used for back-up, it must be labeled with the following: "AWBS Back-up", aircraft BUNO, security classification, and date the back-up was performed, per NAVAIR 01-1B-50.

i. D-level responsibilities for W&B Handbooks:

(1) Upon induction, perform a complete inventory of items listed in Chart A.

(2) Upon completion of modifications, equipment changes, or maintenance actions for which weighing of the aircraft is not required, update the W&B Handbook, including the basic weight and moment using the information provided in TDs, and verify the basic weight and moment in Chart C reflects the delivery configuration of the aircraft.

(3) Maintain the basic weight and moment records at time of weighing and at time of delivery for all aircraft weighed. At the end of each calendar year, send COMNAVAIRSYSCOM (AIR-4.1.7) a copy of the basic weight and moment record, plus a copy of Chart A, Form B, and Chart C for a representative aircraft of each T/M/S weighed during the year.

### **3.2.2.9 Gas Turbine Engine Maintenance Program**

a. The objective of this program is to provide the policy and procedures whereby maintenance activities can effectively accomplish their assigned engine maintenance responsibilities. Specific IMA OR FRC gas turbine engine three-degree assignments are in NAVAIR NOTE 4700. Engines not included in NAVAIR NOTE 4700 will receive support per applicable Weapons System Planning Document (WSPD). The Gas Turbine Engine Maintenance Program was issued under the three-degree concept. Under this concept, each engine intermediate maintenance technical manual defines specific engine maintenance actions as either first-, second-, or third-degree functions. These functions are determined largely by degree of difficulty and recurring frequency. Selected IMAs or FRCs are assigned to provide a specific degree of support for specific engines. This assignment is based primarily on the types of engines to be supported both on their station and within the general geographical area. However, an IMA or FRC may be required by higher authority to provide repair support for engines shipped from outside the area when this action supports the goal of repair with the least expenditure of material, manpower, and money. The degree of repair capability for an IMA or FRC can be adjusted, at any time, to accommodate

anticipated changes in required support; however, expansion of capability without a reduction elsewhere may not be possible because of SE shortages.

b. Functions given in the definitions below represent broad generalities. Refer to the engine intermediate maintenance technical manuals maintenance allocation tables to determine the degree assignment of specific repair functions as these vary from engine to engine. Terminology used in relation to this program, in addition to standard definitions, are amplified as follows:

(1) Gas Turbine Engines. All gas turbine engines and their accessories and components, whether used for powering flight, providing auxiliary power, or starting purposes (airborne or ground units).

(2) First-Degree Repair. The repair of a damaged or nonoperating gas turbine engine, its accessories, or components to an acceptable operating condition when the repair includes compressor rotor replacement or disassembly to the extent the compressor rotor could be removed. Additionally, any repair beyond that authorized for a second-degree activity, but not to the extent required to be performed at D-level, will be defined as a first degree repair.

(3) Second-Degree Repair. The repair of a damaged or nonoperating gas turbine engine, its accessories, or components to an acceptable operating condition. Second-degree repairs will normally include: the repair or replacement of turbine rotors and combustion sections, including afterburners; the replacement of externally damaged, deteriorated, or time limited components, gearboxes, or accessories; and minor repairs to the compressor section. Further, the repair or replacement of reduction gearboxes and torque shafts of turboshaft engines and compressor fans of turbofan engines, which are considered repairable within the limits of the applicable intermediate maintenance technical manuals, shall be accomplished by second-degree activities.

(4) Third-Degree Repair. This repair encompasses major engine inspections and the same gas turbine engine repair capability as second-degree except certain functions which require high maintenance man-hours and are of a low incidence rate are excluded.

c. Due to the high cost of establishing and supporting engine repair facilities, many factors must be taken into consideration before a decision can be made to support a new effort. Among these are:

- (1) Equipment requirements.
- (2) Facility requirements.
- (3) Engine test facility requirements.
- (4) Personnel requirements and associated technical training.
- (5) Proximity of other facilities to provide like support.
- (6) Productivity and capacity.

d. COMNAVAIRSYSCOM (AIR-6.6.4), with TYCOM concurrence, shall determine the degree of engine repair capability of each facility. When there is a need to establish a repair facility, the requesting activity shall submit a letter to COMNAVAIRSYSCOM via the ACC or TYCOM under the procedures in [Chapter 5](#).

e. Naval aviation maintenance is dedicated to the application of RCM to in-service and future aircraft, engines aircrew systems, weapon systems, aircraft launch and recovery equipment, and SE. RCM is a disciplined logic which establishes required failure management strategies, for example,



periodic maintenance tasks, to enable equipment to perform with a specific probability of success at the lowest possible total expenditure of resources for system operation and support over the life cycle. RCM is a continuous process, with initial periodic maintenance tasks being possibly refined through application of AE. AE collects additional information reflecting actual operating experience. Data collected through AE, such as using threshold and opportunity-sampling programs, is used to refine the engine RCM Program.

(1) IMAs and FRCs will accomplish and document engine, engine accessory, and component teardown inspections per requirements established by the ISSC. The efforts will not be of a continuing nature nor will they be a requirement on all engines, engine accessories, and components received for processing. The ISSC will determine the frequency and hardware candidates based on the degree of knowledge available and magnitude of the problems specific hardware is causing. It is important that any activity involved in operation, maintenance, or transportation of gas turbine engines ensures the AESR for those gas turbine engines, required by this instruction, is maintained in proper order. Life limited parts should have sufficient time remaining to permit engine operation until the next scheduled major inspection.

(2) IMAs and FRCs with an NTCSS Optimized OMA NALCOMIS terminal will maintain the Configuration Management Auto Log-set (CM ALS) records for gas turbine engines as required by this instruction.

f. Screening procedures for non-ready for issue (NRFI) engines, auxiliary power units (APUs), and support equipment gas turbine engines (SEGTE) are depicted in [Figure 3-19](#).

(1) Engines, Aeronautical Equipment Service Records (AESR), and CM ALS AESR records will be thoroughly screened by second and third-degree I-level activities to determine if the required maintenance action is within their repair capability.

(a) Screening will be completed within 10 days of receipt.

(b) If the required maintenance is within the receiving I-level activities repair capability, the engine should be inducted into the repair cycle within 30 days of receipt. Refer to [Appendix E](#) for a list of Action Taken Codes.

**NOTE: If the ACC elects to have the engine repaired by another facility, Action Taken Code 8 (BCM 8 - Administrative) will be used on the MAF.**

(c) If the I-level activity determines the required maintenance action is beyond their authorized repair capability, the I-level activity will attempt to determine the degree of capability required to return the engine to an RFI condition. The I-level activity is responsible for contacting the ACC for disposition instructions and coordinating with the supporting supply activity to ship the engine to the designated repair activity (NAVAIR NOTE 4700).

**NOTE: Action Taken Code 7 (BCM 7 – Beyond Authorized Repair Depth) will be documented on the MAF when the depth of repair for engines, engine accessories, and components is beyond the activities authorized repair level per T/M/S technical manuals.**

(2) First Degree IMA or FRC. The first degree gas turbine engine repair facility exists to provide fleet support in the areas of major engine repair and updating. Engines will be screened and inducted within the time limits as outlined above.

(3) Containerized Engines. When a containerized engine has been dropped and inspection by local O-level and I-level activities determines the engine was probably not subjected to damage, the engine shall be given a thorough QA inspection after removal from the container. The inspection shall be

visual and include the following: compressor and gas turbine area by bore scope or fiber optic methods (when accessible); accessible compressor and turbine rotors to ensure free movement; and seals or bearings for damage. If no physical damage is noted, the engine shall undergo a thorough test cell run (including a vibration test and JOAP sample) and be reinspected and certified by an I-level QAR prior to installation in an aircraft.

(4) The only engines considered beyond IMA or FRC capabilities (BCM-1, repair not authorized) are engines in one or more of the following categories:

(a) Engines with excessive damage due to fires or subjected to firefighting chemicals internal to the engine.

(b) Crash damaged engines (after release by the safety board).

(c) Engines subjected to extreme mishandling, such as being dropped.

(d) Engines subjected to salt water immersion.

(e) Engines exhibiting excessive or extensive corrosion.

(f) Engines exhibiting massive oil contamination.

(g) Engines recommended for removal by an oil analysis laboratory when the specific cause of the impending failure cannot be positively determined and corrected.

(h) Engines with total gas path FOD of an extremely destructive nature requiring extensive parts replacement and high man-hour consumption.

(i) Engines requiring time compliance PPCs to parts that cannot be removed by the I-level.

(j) Engines requiring life limited part(s) removal that cannot be removed by the I-level.

(5) Second and third-degree IMA OR FRC responsibilities include the following:

(a) When repair capability is unavailable locally, the engine is preserved and turned in to the supporting supply activity for shipment to the nearest authorized repair activity directed by the ACC or TYCOM.

(b) In cases of engine failure(s) where an EI is requested, shipment of the engine(s) to the D-level repair facility will be expedited. Engines or accessories are not preserved if such action would destroy or conceal the evidence required by such inspection. In these cases, proper AESR or CM ALS AESR records entries must be made to indicate the reasons for not preserving the engine. The procedures in [Chapter 10, paragraph 10.9](#), must be used when requesting an EI.

(c) Accurate records must be maintained. The required SRC cards, EHRs, MSRs, and ASRs must be included with each engine AESR. If an engine is BCM, an entry must be made in the engine AESR stating the reason for BCM action, identifying all known discrepancies. IMAs/FRCs with CM ALS records for engines will ensure that tracked serialized components are accurately reflected and that all maintenance has been properly documented to correctly update the CM ALS. In the event of a BCM, ensure entry is made and all known discrepancies noted in CM ALS.

(d) All engines and modules forwarded to other activities will have a full inventory of repairable and nonrepairable components, accessories, and appropriate reports. Additionally, all reportable components will be accompanied by the appropriate reports. NRFI components and

accessories installed as a result of cannibalization will be clearly tagged and an appropriate AESR or CM ALS AESR entry made (refer to [Chapter 15](#) for engine cannibalization documentation). When directed by the ACC or TYCOM to ship an incomplete engine, repairable components which have been removed, BCM'd, and placed on order will have a copy of the DOD Single Line Item Release Receipt Document (DD 1348-1) placed in the AESR to indicate shipment of retrograde (not applicable for CM ALS). In addition, enter the component retrograde document number in the Miscellaneous/History (OPNAV 4790/25A) record or CM ALS AESR miscellaneous history record.

**NOTE: Engines must be shipped with all supporting components in place. It is possible for engine components to be damaged during shipment when all components that contribute to their structural support are not included.**

(e) Engines requiring repair within the capability of the IMA or FRC are processed using the applicable maintenance technical manuals. IMAs and FRCs shall comply with all PPBs and PPCs within the scope of their assigned maintenance level, concurrently with repair, if the extent of engine disassembly permits compliance. PPC parts and kits designed for compliance at O-level maintenance will be obtained from the operating activities if such parts and kits were previously furnished but not incorporated.

(f) Upon completion of repair, the engine is returned to service and entries are made in the Repair/Rework Record (OPNAV 4790/23A) of the AESR or CM ALS AESR. Indicate the degree of repair performed in the Description of Work block. In the Reference block identify the maintenance technical manuals or directives describing the action taken.

(6) First-degree repair activity responsibilities include the following:

**NOTE: When Marine Corps activities having first-degree repair capability are transferred, reassignment of the first-degree function will be requested from COMNAVAIRSYSCOM via the cognizant ACC or TYCOM.**

(a) All activities having first degree capabilities will, upon receipt of an engine, screen the engine and AESR or CM ALS AESR to determine if the engine is to be repaired or forwarded to a D-level repair facility. The engine will be forwarded to the depot if required repair falls into one of the IMA OR FRC BCM-1 categories.

(b) If an engine requires D-level repair, it is inspected for preservation, represerved if required, and turned in to the supporting supply activity for shipment to the designated depot. An appropriate AESR or CM ALS AESR entry is made stating the reason the engine is recommended for D-level repair and listing all known discrepancies.

(c) Engines forwarded to D-level or other repair activities will have a full inventory of components and accessories. Non-RFI components and accessories installed as a result of cannibalization will be clearly tagged and an appropriate AESR or CM ALS AESR entry will be made (refer to [Chapter 15](#) for engine cannibalization documentation). When directed by the ACC or TYCOM to ship an incomplete engine, repairable components which have been removed, BCM'd, and placed on order, will have a copy of the DOD Single Line Item Release Receipt Document (DD 1348-1) shipping document placed in the AESR (not applicable for CM ALS AESR) to indicate shipment of retrograde. In addition, enter the component retrograde document number on the Miscellaneous/History (OPNAV 4790/25A) or CM ALS AESR Miscellaneous/History record.

(d) Engines requiring repair within the capability of the IMA OR FRC are processed using instructions set forth in the applicable MIM.

(e) IMAs and FRCs shall comply with all PPBs and PPCs concurrently with performing a repair if the extent of engine disassembly permits compliance. PPC parts and kits designed for incorporation at the O-level will be obtained from operating activities if such parts and kits were previously furnished but not incorporated.

(f) Upon completion of a repair, the engine is returned to service and an entry is made in the Repair/Rework Record (OPNAV 4790/23A) of the AESR or CM ALS AESR Indicate degree of repair performed in the Description of Work block. In the Reference block identify the MRCs, instructions, or directives describing the action taken.

(g) ACCs or TYCOMs, controlling agents for the Three-degree Gas Turbine Repair Program, shall:

1. Ensure fleet maintenance activities follow the screening sequence procedures for non-RFI engines.
2. Nominate IMAs and FRCs to perform a selected degree of maintenance for specific engines.
3. Annually, review the status and requirements of repair activities and forward any recommended changes to COMNAVAIRSYSCOM.
4. Implement and direct engine RCM procedures as they apply to IMAs/FRCs within their command responsibility.

#### **3.2.2.10 Auxiliary Power Unit (APU) Management and Support Equipment Gas Turbine Engine (SEGTE) Management**

a. The objective of this program is to provide the policy and procedures for maintenance of APUs and SEGTEs under the three-degree repair concept per NAVAIR NOTE 4700. Under this concept, each APU and SEGTE I-level MIM identifies specific maintenance actions as either first-, second-, or third-degree functions. These functions are determined largely by degree of difficulty and recurring frequency. Selected IMAs and FRCs are assigned to provide a specific degree of support for specific APUs and SEGTEs. IMA or FRC assignments are in NAVAIR NOTE 4700.

b. The Maintenance Plan will designate three-degree I-level repair functions for removed APUs and SEGTEs. APUs and SEGTEs assigned a three-degree repair function will be maintained in APU SEGTE (Work Center 412). Installed SEGTEs will undergo O-level maintenance plus preservation or depreservation in the SE Gas Turbine Repair Shop (Work Center 91A).

(1) APU and SEGTE inspections are accomplished under the applicable MRCs upon expiration of the established interval. A major APU or SEGTE inspection is a comprehensive inspection performed to determine the material condition of the APU or SEGTE. This inspection is often performed with the APU or SEGTE removed from the enclosure, but may be accomplished on certain installed APUs and SEGTEs using a bore scope or other inspection aids as directed in the MRCs. Major APU or SEGTE inspections are performed by the supporting IMA OR FRC, unless directed otherwise by the ACC. APU and SEGTE inspections are accomplished during first degree repair. Therefore, APUs and SEGTEs installed following first degree repair are zero timed for inspection purposes. MRCs prepared to the latest specifications are aligned with the level of maintenance performing the inspections. All tasks performed on installed APUs and SEGTEs by IMAs/FRCs are in the phase, daily, or servicing special MRCs. APU and SEGTE MRCs are provided for IMA OR FRC use.

(2) The IMA OR FRC shall screen AESRs or CM ALS AESRs and perform appropriate inspections on all removed APUs and SEGTEs requiring unscheduled I-level repair. IMAs/FRCs with CM ALS for APUs or SEGTEs will ensure that tracked serialized components are accurately reflected in the CM ALS and that all maintenance has been properly documented in CM maintenance task to correctly update the ALS.

(3) APUs and SEGTEs not installed in an aircraft or enclosure do not accumulate time for inspection purposes.

(4) APU and SEGTE screening sequence procedures are given in [Figure 3-19](#).

(5) RFI APUs and SEGTEs received from supply shall have AESRs or CM ALS AESRs screened to determine which inspections, if any, have been performed and when the next inspection is due.

(6) APU and SEGTE documentation procedures. The enclosure is considered the end item when work is performed on SEGTEs at an I-level activity (Work Center 91A). Therefore, APUs and SEGTEs sent to I-level activity (Work Center 412) for inspection or repair must have a MAF turn-in document initiated.

**NOTE: All documents, forms, and maintenance records for the Air Start Unit (MSU-200NAV) will be maintained in the SE Custody and Maintenance History Record (OPNAV 4790/51). There is no requirement for an AESR.**

### **3.2.2.11 Inter-Service Support Program**

Inter-Service Support Program is rework of repairable components performed by one Service for another. Specific program responsibilities are in OPNAVINST 4790.14.

### **3.2.2.12 Fleet Air Introduction Liaison Survival Aircrew Flight Equipment (FAILSAFE) Program**

The FAILSAFE Program is intended to ensure proper fleet introduction of new or modified ALSS. FAILSAFE is sponsored by COMNAVAIRSYSCOM (AIR-4.6) and implemented by the aviation physiology training units to supplement formal training.

### **3.2.2.13 Naval Ordnance Management Policy (NOMP)**

a. OPNAV M-8000.16 issues the policies, procedures, and responsibilities for activities supporting or performing ordnance maintenance. It encompasses all Navy and Marine Corps activities concerned with the use, maintenance, overhaul, production, and support of naval ordnance weapons and associated equipment. In addition to specifying maintenance processes, OPNAV M-8000.16 addresses interactive programs including maintenance management, maintenance engineering, fleet support, inventory management, asset and fiscal resources and associated reporting, and MIS. The ordnance weapons and equipment addressed in OPNAV M-8000.16 include, but are not limited to, air launched missiles, airborne ordnance, and ammunition, AWSE, AAS, UAS, targets, weapons handling procedures, and the Airborne Weapons Performance Evaluation and Reporting Program.

b. NTCSS Optimized OMA NALCOMIS provides the fleet an improved capability to manage AAE, aircraft guns maintenance, configuration, and tracking usage information for NOMP equipment that have CM ALS AESRs, SRCs, Tracked Component Record (TCR), and EHRs. O-level and I-level activities that have NTCSS Optimized OMA NALCOMIS for AAS have the capability to share maintenance and configuration data up-line in near real-time and receive automated maintenance planning data updates. CM will:

- (1) Provide accurate listings of all components on the AAS that are considered tracked items.
- (2) Track usage for life limited components.
- (3) Maintain configuration history for tracked items.
- (4) Forecast scheduled maintenance.

c. IMAs/FRCs with CM ALS records for AAS shall ensure that the tracked serialized components are accurately reflected in the CM ALS and all maintenance tasks have been properly documented to correctly update CM ALS SRCs and CM ALS EHRs for AAS.

**NOTE: Full scale aircraft targets will be reported.**

#### **3.2.2.14 Laser Hazard Control Program**

The widespread use of lasers has increased the probability of exposure to or injury from laser radiation. Activities operating and maintaining laser equipment shall establish a Laser Hazard Control Program per OPNAVINST 5100.27/MCO 5104.1.

#### **3.2.2.15 Warranty Program**

a. Section 2403 to 10 of the U.S.C requires DOD to obtain warranties in contracts awarded after 1 January 1985 for the acquisition of weapon systems equipment. Each contract must contain warranties covering design and manufacturing requirements, defects in materials and workmanship, and essential performance requirements. These warranties will provide ample time, after delivery of the weapon system equipment, for the government to assess achievement of specification requirements and ensure the equipment is free from defects in materials and workmanship. The Program Manager Air (PMA) shall examine the value of warranties on major systems and pursue such warranties when appropriate and cost-effective. When appropriate, the PMA shall incorporate warranty requirements into major systems contracts per FAR 46.7. If a warranty is cost effective and approved by the chief of the contracting office, each contract must contain warranties covering design and manufacturing requirements, defects in materials and workmanship, and essential performance requirements. The contract shall include a requirement to identify the warranty administration process. These warranties are to provide ample time, after delivery of the weapon systems equipment, for the government to assess achievement of specification requirements and ensure the equipment is free from defects in materials and workmanship.

**NOTE: Section 847 of the FY98 Defense Authorization Act repealed the 10 USC2403 requirements for weapon system warranties.**

b. Warranted items will be repaired at the maintenance level which would normally repair such items as determined by the logistics support analysis process if they were not under warranty. From a fleet maintenance perspective, warranty procedures will:

(1) Allow repairs of warranted items to be accomplished in the same manner as repairs to nonwarranted items, with only minor changes to MAF documentation procedures. For example, normal repair of warranted items will be documented on MAFs using special indicators to identify repair of a warranted item was accomplished.

(2) Allow expeditious repair of warranty items to occur in the same manner as nonwarranted items.

(3) Reserve the use of PQDRs at the O-level and I-level for their intended purpose, for example, to document apparent deficiencies in construction or manufacture of repairables and consumables, instead of documenting failures of items simply because they were under warranty.

(4) Require the determination of any payback to the Navy to be the result of contractual liaison between COMNAVAIRSYSCOM, NAVSUP WSS, other Navy field activities, and applicable manufacturer personnel. Such determination will be based on MDS data supplied by COMNAVAIRSYSCOM (AIR-6.8.5) and will be made after the fact, for example, after fleet maintenance personnel have made repairs.

c. The ability of the maintenance activity to identify warranted equipment will generally depend upon whether the equipment is considered contractor furnished equipment (CFE) or government furnished equipment (GFE). Aircraft and engine warranties cover the basic aircraft or engine, and the CFE. Warranty markings and information are documented in the Miscellaneous/History section of the aircraft logbook or engine AESR. For components that are tracked in NTCSS Optimized NALCOMIS, the CM ALS shall perform this function. GFE will have a distinct and separate warranty and will have the warranty information marked on the equipment and on any associated record cards or CM ALS. GFE will usually have a WUC of 51000 or higher. [Chapters 15](#) (O-level) and [16](#) (I-level) contain information on documenting warranty information on the MAF.

### 3.2.2.16 Mobile Facility (MF) Program

a. Mobile Facilities (MF) are relocatable tactical shelters used onboard ship and ashore for aviation weapon system maintenance and SE maintenance functions. MFs are also used for aviation operational and tactical functions, such as aerial photographic processing, automated data processing, and metrological functions. NAVAIRINST 13670.1 assigns management responsibility of the MF Program.

b. MCO 13670.1 contains the allowances for Marine Corps MF equipment items. The Mobile Facility page on the Weapons System Planning Document (WSPD) contains the allowance for Navy MFs.

c. Accountability records for aviation MFs and major related equipment are the Mobile Facility Logbook and Inventory Record (LIR), Support Equipment (SE) Custody and Maintenance History Record (OPNAV 4790/51), and the Mobile Facility Tool (MFTOOL) database. The LIR is a two-part record, maintained on each MF. Part I contains the Table of Contents ([OPNAV 4790/63](#)) and the SE Custody and Maintenance History Record (OPNAV 4790/51). Part II contains the Inventory Record section, which consists of the Inventory Equipment List Separator (OPNAV 4790/74) ([Figure 3-20](#)), Mobile Facility Inventory Record - Equipment List (OPNAV 4790/74A) ([Figure 3-21](#)), Record of Shortages Separator (OPNAV 4790/75) ([Figure 3-28](#)), and Mobile Facility Record of Shortages (OPNAV 4790/75A) ([Figure 3-22](#)). At a minimum, the records will be maintained for each Mobile Facility (MF), Environment Control Unit (ECU), and Power Distribution Box (PDB).

**NOTE: An SE Custody and Maintenance History Record (OPNAV 4790/51) will be maintained on Complexing/Decomplexing Tools (CDTs), load banks, static mobile frequency converters, and tactical quiet generators per the SE procedures of [Chapter 10, paragraph 10.17](#).**

d. The LIR is initiated when a MF is internally configured by the industrial activity. The LIR is maintained under the General Instructions Separator (OPNAV 4790/62) by the activity in custody and accompanies the MF at all times. Full identification data and SERNO are inserted on each page of the LIR to ensure the forms are not lost when the record is removed from the logbook. The LIR contains the following separators and forms that must be maintained as a permanent part of the record.

**Note: Exceptions: OPNAV 4790/51, OPNAV 4790/74A, OPNAV 4790/75A do not need to be maintained as a permanent part of the record.**

(1) Mobile Facility Logbook and Inventory Record - Table of Contents (OPNAV 4790/61) ([Figure 3-24](#)). Lists required forms and separators contained in the LIR.

(2) Mobile Facility Logbook and Inventory Record - General Instructions (OPNAV 4790/62) (Figure 3-23). Provides instructions concerning the origination, custody, maintenance, and disposition of the LIR.

(3) Mobile Facility Major Related Equipment Records - Table of Contents (OPNAV 4790/63) (Figure 3-25, page 1). Outlines the forms and documentation required in Part I.

(4) Mobile Facility Logbook and Inventory Records, Part I Instructions (OPNAV 4790/63) (Figure 3-25, page 2). Provides instructions concerning the maintenance forms and documentation.

(5) SE Custody and Maintenance History Record (OPNAV 4790/51) (Chapter 10, paragraph 10.17). This form is maintained for the MF shell, running gear, air conditioners, frequency converters, and generators.

(6) Mobile Facility Logbook and Inventory Record - Table of Contents (OPNAV 4790/73) (Figure 3-26). This separator is maintained as a permanent part of the record and provides a list of separators and forms used in Part II of the LIR.

(7) Mobile Facility Logbook and Inventory Record - Equipment List Part II Instructions (OPNAV 4790/73A) (Figure 3-27). Outlines inventory responsibilities and details how to address MF inventory shortages.

(8) Mobile Facility Inventory Record - Equipment List Separator, Part II (OPNAV 4790/74) (Figure 3-20).

(9) Mobile Facility Inventory Record - Equipment List (OPNAV 4790/74A) (Figure 3-21). Provides an inventory record of equipment installed or in use and a list of inventory reports.

(10) Inventory Record of Shortages Separator (OPNAV 4790/75) (Figure 3-28). Record of Shortages Separator (OPNAV 4790/75A) and applicable documentation authorizing an inventory shortage.

(11) Inventory Record of Shortages Form (OPNAV 4790/75A) (Figure 3-22). Provides a record of shortages authorized by the appropriate ACC or TYCOM/MARFOR prior to transfer or receipt.

e. Physical custodians must perform inventory reporting of in use annual inventory reports consolidated by the ACCs/TYCOMs/MARFORs and forwarded to COMNAVAIRSYSCOM. Physical custodians will report all transfers and receipts of MFs and major related equipment by naval message. MFs with inventory shortages will not be transferred without approval of the responsible ACCs/TYCOMs/MARFORs. NAVAIRINST 13670.1 provides detailed instructions on policy, responsibility for management, and required reports for inventory receipt and transfer.

f. Activities must perform an Acceptance/Transfer Inspection for MF, ECU, and PDB per the MF Program Acceptance/Transfer Checklist (Figures 3-39 and 3-40). MF ancillary equipment will utilize the SE Acceptance/Transfer Inspection Checklist (Figures 10.17-1 and 10.17-2) for SE in Chapter 10, paragraph 10.17.

### 3.2.2.17 Fleet Readiness Center (FRC) Customer Liaison Program

a. The program for the scheduled calibration of TMDE is not considered a part of customer service within the meaning of this instruction. However, calibration of equipment on an unscheduled basis, to preclude NMCS or PMCS and work stoppage condition, may be authorized by ACC or TYCOM per Chapter 6.



b. The policies here apply to all operation, maintenance, or material support of aeronautical material and equipment. Customer service required for other than aviation type work will be accomplished by the D-level activity provided funds are made available to cover the cost of such service and manpower is available without jeopardizing aviation type workload.

c. The responsibility for the repair of aeronautical components and equipment to various maintenance activities within the Navy and Marine Corps is assigned in [paragraph 3.1.1](#). Particular emphasis is placed upon the repair support responsibilities of IMAs/FRCs. These activities must perform all assigned repair functions within their capability. Emphasis must also be placed on developing the necessary repair capability within the IMAs and FRCs. Customer service is intended to supplement, not replace, existing supply and I-level support. To avoid duplication of effort in supply and maintenance activities, requests will be submitted or accepted only from IMAs or FRCs. Further, each request will certify the required function is beyond the capability of the supporting IMA and a replacement could not be readily obtained.

d. As circumstances warrant, assistance will be provided through customer service for these requirements. Minor repair will include only the correction of specific discrepancies or replacement of minor malfunctioning parts requiring special tools, test equipment, or facilities not available at IMAs or FRCs. Material submitted for customer service, requiring only limited processing or check and test, shall not be processed beyond the depth stated on the work request or that necessary to return the component to RFI condition.

(1) The program for the scheduled calibration of PME is not considered a part of customer service within the meaning of this instruction. However, calibration of equipment on an unscheduled basis to preclude NMCS/PMCS and work stoppage condition may be authorized by ACC or TYCOM per [Chapter 6](#).

(2) Requests from an IMA OR FRC for customer service shall be limited to the services not involving repairs within the capability of the requesting IMA OR FRC. Specifically, these services will be as follows:

- (a) Engineering and consultation services.
- (b) Plating, magnetic particle inspection, heat treatment, and machinist services.
- (c) Chemical, physical, and metallurgical laboratory testing.
- (d) Check and test of equipment and components.

(3) Assistance required by the IMA may be requested from COMFRC activities to complete components delayed in process due to lack of facilities for check and test, or for processing not normally required, for example, heat treatment, plating, magnetic particle inspection, and machine shop. Such assistance may be requested by the IMA from FRC activity through the use of a Work Request Customer Service (OPNAV 4790/36A) ([Figure 3-29](#)). All other customer service requests originated within the IMA OR FRC will be transacted through the ASD.

(4) Materials beyond the repair capability of the IMA, including the manufacture of parts, shall be referred to the ASD for further action. ASD shall determine the system availability for NMCS, PMCS, and work stoppage items prior to submitting requests for FRC customer service. If it is determined customer service support is required, the ASD shall notify the IMA to prepare a Work Request Customer Service (OPNAV 4790/36A) ([Figure 3-29](#)) describing the specific work to be accomplished. ASD is responsible for transportation of customer service work between the IMA and FRC activity. It is also

ASDs responsibility to accumulate and maintain statistics, such as end item usage, and supply data required to ensure continued fleet support.

(5) Extensive Repairs and Overhaul. Aircraft components and SE requiring extensive repairs or overhaul, including items causing NMCS, PMCS, or work stoppage conditions, shall not normally be processed by customer service. However, when situations warrant, and the item on which customer service is requested is not on the BO-8, or Hi-Burner, COMNAVAIRSYSCOM (AIR-6.0), in coordination with the cognizant Type Wing, may authorize customer service on these items to preclude NMCS, PMCS, or work stoppage conditions.

e. Engineering Drawings and Associated Data. Engineering drawings and reference documents made by the designers of weapon systems and equipment are procured from those designers and distributed to D-level maintenance activities. They are used for maintenance and repair, making parts not stocked in the supply system, emergency fabrication, engineering analysis and investigation, and for in-house redesign. The technical manual system, the spare parts provisioning system, and the entire logistic support system work on the principal that copies of engineering drawings will be available at D-level activities. They are normally available on microfilm. When individual drawings are required to support maintenance at the I-level, they can be obtained from either the nearest FRC or NATEC. Technical manuals, not drawings, are the normal source of information necessary for O-level and I-level maintenance. Specific instructions for ordering copies of drawings are in NAVAIRINST 5600.15. Many of these drawings are also available at activities identified under the Rapid Acquisition of Manufactured Parts Program.

### **3.2.2.18 Reliability Centered Maintenance (RCM) Program**

a. COMNAVAIRSYSCOM has directed the application of RCM to all in-service and future aircraft, engines, aircrew systems, weapon systems, aircraft launch and recovery equipment, and SE, from technology development through disposal, per NAVAIR 00-25-403 and NAVAIRINST 4790.20. RCM, an analytical process, shall be used to identify failure management strategies to enable equipment to perform with a specific probability of success at the lowest possible total expenditure of resources for system operation and support over the entire life cycle. These failure management strategies include scheduled inspections to determine if the equipment is, and will remain in, satisfactory condition until the next scheduled inspection; scheduled removal of items which will exceed life limits; failure finding, or operational checks; and engineering designed servicing and lubrication tasks. It is critical that accurate fleet operational and failure data is documented in naval maintenance management systems in order for RCM to identify, refine, safe operational and economical effective failure management strategies.

b. Naval aviation maintenance is dedicated to the application of RCM to in-service and future aircraft, engines, aircrew systems, weapon systems, aircraft launch and recovery equipment, and SE. RCM is a disciplined logic which establishes required failure management strategies, for example, periodic maintenance tasks, to enable equipment to perform with a specific probability of success at the lowest possible total expenditure of resources for system operation and support over the life cycle. RCM is a continuous process, with initial periodic maintenance tasks being possibly refined through application of AE. AE collects additional information reflecting actual operating experience. Data collected through AE, such as using threshold and opportunity-sampling programs, is used to refine the engine RCM Program.

### **3.2.2.19 Service Life Management Programs**

a. ASPA Program. The ASPA Program established a process to evaluate the material condition of fleet aircraft. This information is used to more effectively plan D-level maintenance programs. The objective was satisfied during implementation, resulting in rework of virtually all requirements generated by the CNO ASPA predictor model. Condition evaluations provide the data used by the ASPA predictor

model to generate the FRC requirement statement. Analysis of evaluation data improves awareness of the relationship between general material condition, readiness, and restoration cost. This analysis leads to improved rework selection criteria and improved ability to estimate and manage the cost and readiness impact of deferring aircraft rework. OPNAVINST 3110.11 and this instruction contain additional details and documentation procedures on this program.

**NOTE: Other aircraft T/M/S have developed special programs to address their specific standard rework needs. IMC/P, PDM, EPM, and MCI replace ASPA/SDLM and related program specifics by T/M/S.**

(1) ASPA evaluation is a D-level evaluation of aircraft general material condition. The evaluation is performed by a certified ASPA evaluator and consists of record and logbooks analysis and a physical aircraft examination. The ASPA evaluator applies a local engineering specifications (LES) prepared by the ISSC to conduct this evaluation. The LES has been developed considering all factors known to affect the material readiness of the aircraft beyond O-level access or maintenance capability. The LES establishes criteria upon which the ASPA evaluator bases their recommendation that the aircraft:

(a) Period End Date (PED) and Operating Service Month (OSM) is adjusted 12 months (or equivalent flight hours) beyond the current PED or eighteen OSM from date of ASPA inspection, whichever is less.

(b) Be inducted for rework or preservation not later than 90 days after the current PED.

(c) Be inducted into rework immediately and the service tour be terminated.

(2) The ASPA evaluation is supported by the reporting custodian. This support requirement is normally documented on an ASPA conditional MRC and is not intended to exceed the requirements for the Mobilization Material Condition Inspection. OPNAVINST 3110.11 requires an ASPA evaluation between 6 months prior to and 3 months after PED of each ASPA aircraft to determine its general material condition relative to established induction criteria. The 3-month window after PED can only be allowed when no D-level structural life limited item will expire during the period. This determination can be made by screening the aircraft logbook or by contacting the ISSC if information is not available locally. The criteria are based on general material condition and are applicable throughout aircraft service life without regard to duration of service tour. Any aircraft that receives an initial ASPA PED revision shall require additional ASPA inspections as a minimum for any further PED revision. As a general guideline, no more than 18 months should elapse between the ASPA inspection and the resulting adjusted PED.

(3) Aircraft will not normally undergo an ASPA evaluation while embarked on a ship. Requests for exception authority shall be directed to CNO (N98) via the ACC or TYCOM. The reporting custodian must consider resource and readiness impacts of ASPA in executing these procedures. Total impact could include: maintenance man-hours required to support the evaluation; facility and equipment requirements of the ASPA evaluator; facilities and equipment needed to correct defects classified as Critical; availability of essential materials and aircraft out-of-service time for examination and repair. Emphasis shall be given to minimizing these impacts in development of the evaluation schedule. Reporting custodians should attempt to schedule the ASPA evaluation to coincide with scheduled maintenance action(s) having disassembly requirements similar to ASPA. ACCs or TYCOMs should establish procedures to coordinate the greatest practicable number of evaluations of similar aircraft at a site or region during an evaluator visit. However, not more than one aircraft should normally be scheduled per reporting activity in the event a depot critical defect is discovered and extensive maintenance is required. Those activities with complements of more than 30 aircraft may schedule up to 10 percent of total complement simultaneously for ASPA evaluation.

(4) Repair of ASPA Defects

(a) The ASPA evaluator shall provide the reporting custodian a signed copy of the ASPA Evaluation Record. This record includes all discrepancies discovered during the evaluation, classified by assessed defect and maintenance level. An authorized representative of the reporting custodian signifies concurrence with these findings by signature. As part of the exit brief, the reporting custodian shall provide the ASPA evaluator with the JCN assigned to the ASPA support MAF or WO and the ASPA preparation man-hours expended. The reporting custodian shall initiate MAFs or WOs (When Discovered (WD) Code: "U") to correct all O-level or I-level discrepancies. All Critical defects require correction prior to release for flight, regardless of assessed maintenance level or general material condition. The ASPA evaluator shall act as critical repair coordinator until relieved by the leader of the depot repair team.

(b) The ACC or TYCOM shall direct and control procedures for requesting D-level emergency field repair consistent with FRC management procedures established by COMNAVAIRSYSCOM (AIR-6.0). This may include repair of D-level Major defects on aircraft not recommended for SDLM/PDM induction. The ACC or TYCOM may decline a recommendation for PED/OSM adjustment considering operational and readiness impacts inherent in repair of identified defects. OPNAVINST 3110.11 requires rework induction not later than 90 days after the current PED when the ASPA evaluation determines the aircraft general material condition satisfies rework induction criteria.

(5) The following ASPA discrepancy definitions are considered to be a subclass of the more general DEFECT definitions contained in [Appendix A](#).

(a) DEFECT, CRITICAL - A defect that constitutes a hazard to airworthiness. The condition is such that corrective action is required prior to release of the aircraft for flight. Coordination with ISSC Engineering is required to establish restricted flight conditions and operating limitations which would permit safe flight of the aircraft to a depot facility.

(b) DEFECT, MAJOR - A defect that materially reduces the use of the unit or part for its intended purpose. Aircraft is safely flyable but requires major repair within a specified time frame.

(c) DEFECT, MINOR - A defect that does not materially reduce the use of the unit or part for its intended purpose. Deferral of corrective action until the next depot examination is not likely to impose an unequal economic penalty.

**NOTE: Aircraft acceptance inspections and transfer inspections require an aircraft logbook and AESR entry on the inspection page titled "Conditional". Activities with NTCSS Optimized NALCOMIS will enter acceptance/transfer and ASPA inspections in the CM ALS Inspection Record of the aircraft and AESR. Authority is this instruction or applicable MRCs. Acceptance and transfer inspections for equipment requiring AESRs not installed as part of the aircraft logbook or CM ALS are not required. Hydraulic fluid sampling results require a logbook entry on the Miscellaneous/History page or CM ALS Miscellaneous/History record.**

b. The Conversion In Lieu Of Procurement Program includes aircraft conversion, service life extension, update, expansion or change of mission capability, and improvement of combat capability. The primary purpose of the program is to provide an acceptable alternative to procurement of new aircraft, while meeting or maintaining force levels. OPNAVINST 3110.11 contains additional details on this program.

c. The Modification, Corrosion and Paint Program (MCAPP) Program includes incorporation of D-level technical directives, inspection of aircraft for corrosion damage and repair as required, and

evaluation of the material condition of the aircraft paint system. Other repairs will be made when beyond the capability of O-level or I-level maintenance or when safety of flight is a consideration. This program is sponsored by CNO (N980L).

d. The Reclamation in lieu of Procurement (RILOP) Program is the removal of installed equipment from a stricken or damaged aircraft or engine prior to disposal. Equipment to be removed is determined by a NAVSUP WSS master save list. [Chapter 8](#) provides additional information. CM ALS tracked items will have an entry made stating removed for RILOP. Upon disposition of the removed components the CM ALS will be transferred to the designated site.

e. The Service Life Extension Program (SLEP) Program is the restoration or replacement of primary aircraft structures that have reached fatigue life limits. SLEP is performed for the express purpose of establishing an extended service life beyond the original design. COMNAVAIRSYSCOM determines the duration of the service life extension resulting from the accomplishment of SLEP. OPNAVINST 3110.11 contains additional details on this program.

f. The Structural Appraisal of Fatigue Effects (SAFE) Program provides for accurate fatigue life tracking of individual aircraft component service life limits specified as fatigue indexes rather than flight hour limits. Tracking fatigue indexes is predicated on the submission of flight loads, launch, and landing data per NAVAIRINST 13920.1 and will permit use of time compliances for component modification, rework, and replacement to accommodate individual aircraft usage rates and eliminate schedule inflexibility or conservatism associated with specifying life limits in terms of flight hours. Consequently, a more accurate analysis of fleet aircraft will result in better planning with a more timely induction for structural rework. The SAFE Program Reports are published quarterly by COMNAVAIRSYSCOM (AIR-4.3) and available at [CNAP Share portal](#).

g. The Structural Life Limits Program provides policy and assigns responsibilities to assure continuing structural safety of fixed and rotary wing aircraft throughout their assigned service life. All levels of maintenance are responsible for ensuring structural life limited items and components do not exceed the specified limits per NAVAIRINST 13120.1 for fixed wing and NAVAIRINST 13130.1 for rotary wing aircraft. Structural modification or alteration of life limited items and components may be changed by applicable TDs but not without determining the effect on aircraft assigned service life and approval by COMNAVAIRSYSCOM (AIR-4.0).

h. The Phase Depot Maintenance (PDM) Program replaces ASPA/SDLM for a specific T/M/S aircraft. PDM divides a larger SDLM specification or work package into smaller, and more frequent, phases for Depot scheduling and completion to decrease periods of aircraft unavailability. Upon FID, the aircraft will be inducted into scheduled D-level maintenance (Phase 1, Phase 2, etc.) within a window as detailed in OPNAVINST 3110.11.

i. The IMC/P Program replaces ASPA/SDLM and MCAPP for a specific T/M/S aircraft. This scheduled D-level maintenance emphasizes a FID and may segregate the service tour length (OSP) into smaller periods of POI and PMI. The goal is to ensure that the appropriate level of maintenance performs these tasks at the right location and interval that will produce results in the highest degree of availability and readiness at the lowest overall life cycle cost. Activities shall ensure IMC/P is performed per NAVAIRINST 4790.33 and [Chapter 5](#).

j. Material Condition Inspection (MCI) replaces ASPA and SDLM for a specific T/M/S aircraft that have been designated by OPNAV N980L as nearing the end of their service life. These aircraft are no longer funded for standard rework. The purpose of MCI is not a PED adjustment, but to ensure airworthiness for an additional operational flying period specified by OPNAV. Upon review and recommendation by the NAVAIR-managed Airframes Management Board, a PED-based standard rework

plan is replaced by an annual D-level inspection to ensure airworthiness and satisfactory material condition.

k. Life Limited Repair (LLR) Program. Aircraft and components having life limits with reoccurring inspections (by BUNO) not listed in the Service Life Bulletins or MRC decks will be identified as LLR components, via naval message, due to the lack of a structural maintenance technical manuals. Every structure discrepancy requires engineering analysis and disposition, which in some cases results in a life limiting message. OOMA baseline managers are authorized to use LLR naval messages in the same manner as the MRC deck to facilitate the initiation of reoccurring inspections into OOMA.

l. The Enhanced Phase Maintenance (EPM) Program allows for the performance requirements of SDLM at fleet facilities. A depot field team performs inspections and repairs with O-level assistance during periodic phase inspections. Structural and systems tasks are performed at RCM justified intervals and comply with all approved TDs. Activities shall ensure EPM is performed per NAVAIRINST 4790.33 and [Chapter 5](#). EPM identifies and corrects material deficiencies allowing aircraft to be maintained at the O-level with assurance of a high level of availability.

### 3.2.2.20 Aircraft Taxi and Aircraft Engine/Auxiliary Power Unit (APU) Turn-up Licensing Program

a. Aircraft Taxi Licensing. COs may issue Aircraft Taxi License (OPNAV 4790/191) ([Figure 3-30](#)) to civilian maintenance personnel under the following conditions:

- (1) When recommended by the MO and approved by the CO.
- (2) Upon completion of a comprehensive training program using the applicable Naval Air Training and Operating Procedures Standardization (NATOPS) manual.
- (3) Prior to initial certification, and annually thereafter, personnel shall pass a written and operational test developed by a T/M/S NATOPS Officer and administered by a T/M/S Pilot NATOPS instructor. QARs may administer written examinations.
- (4) Licensed Aircraft Taxi personnel shall perform a taxi evolution every 90 days for the T/M/S aircraft for which they are certified.

**WARNING: DUE TO THE INHERENT DANGERS ASSOCIATED WITH TAXIING OPERATIONS, AIRCRAFT SHOULD ONLY BE TAXIED TO FACILITATE MAINTENANCE, IF NO OTHER MEANS ARE AVAILABLE TO POSITION AIRCRAFT.**

**NOTES: 1. For military personnel, only NATOPS qualified naval aviators are authorized to taxi manned aircraft.**

**2. The CO may not delegate the authority to sign an Aircraft Taxi License.**

**3. Only individuals authorized to fly helicopters shall be permitted to taxi helicopters (OPNAVINST 3710.7).**

**4. Only individuals authorized to fly tilt rotor aircraft shall be permitted to taxi tilt rotor (OPNAVINST 3710.7).**

**5. UAS: Only NATOPS qualified UA naval aviators or ground personnel designated by the CO as a UA Taxi Operator may taxi UA.**

b. Aircraft Engine (low/full power)/APU Turn-up Licensing. COs may issue an Aircraft Engine or APU Turn-up License (OPNAV 4790/162) (Figure 3-30) for either function to enlisted personnel under the following conditions:

**WARNINGS: 1. ALL T/M/S AIRCRAFT SHALL BE PROPERLY SECURED PER T/M/S MAINTENANCE TECHNICAL MANUALS/NATOPS PRIOR TO ANY MAINTENANCE TURNS.**

**2. ONLY NATOPS QUALIFIED NAVAL AVIATORS AND DEPOT FRC CO AUTHORIZED PERSONNEL ARE AUTHORIZED TO ENGAGE HELICOPTER ROTORS DURING ENGINE TURNS.**

- (1) When recommended by the MO.
- (2) Upon completion of a comprehensive training program using the applicable NATOPS manual.

(3) Prior to initial certification, and annually thereafter, personnel shall pass 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 FCF pilot. QARs may administer written examinations. For activities that have flight engineer/crew chiefs, the flight engineer/crew chief NATOPS evaluator/instructor, under the direction of the NATOPS Officer, may administer the written and operational examinations. NATOPS qualified flight engineers/crew chiefs must complete the written and operational examination to be certified by the CO to turn-up aircraft.

**NOTES: 1. Depot FRC COs may designate qualified Aircraft Systems Inspector (ASI) in T/M/S to administer specific written and operational examinations to Engine/APU turn-up nominees. Prior to designation, ASIs shall satisfactorily pass T/M/S specific written and operational examinations administered by a T/M/S Pilot NATOPS instructor or qualified Functional Check Flight (FCF) pilot. Only one ASI per T/M/S will be recommended for designation as ASI Engine/APU turn-up instructor and allowed to administer the written and operational examinations.**

**2. ASI Engine/APU turn-up licenses are valid only for engine/APU operation at the issuing FRC activity.**

**3. Depot FRC COs may authorize personnel to start engines and engage rotors or props for ground system checks (OPNAVINST 3710.7).**

**4. The CO may not delegate the authority to sign an Aircraft Engine/APU Turn-up License.**

**5. Activities operating Aircraft Mounted Gas Turbine Starters shall comply with APU turn-up qualification and licensing requirements.**

### 3.2.2.21 Aeronautical Equipment Welders Program

a. Aeronautical welders shall only weld on equipment, components, and items manufactured from the group(s) of metal(s) for which they are currently certified for and for which weld repairs are authorized by applicable maintenance technical manuals or directives. Group(s) of metal(s) that require separate and distinct certification are specified in NAVAIR 01-1A-34. Separate certification is also required for oxyfuel brazing process.

b. Initial certification is attained by:

- (1) Satisfactory completion of Navy training course(s):

- (a) Aircraft/Support Equipment Basic Welding Certification course (Course N-701-0007).
- (b) Oxyfuel/Shielded Metal Arc Welder Certification course (Course N-701-0009).

(2) Documented satisfactory completion of equivalent non-Navy training per NAVAIR 01-1A-34 and satisfactory completion of recertification testing.

c. Certified welders shall complete the minimum required OJT per NAVAIR 01-1A-34 prior to being allowed to weld on aeronautical components. The Work Center Supervisor, QAR, and the MO shall review/approve the new welder's OJT package.

d. Recertification is normally accomplished by locally producing acceptable test welds and submitting those test welds to the nearest authorized welding examination and evaluation facility. Examination and evaluation facilities shall complete required testing of test weld specimens and provide test results and recertification documentation (as appropriate) to the welder's command within 30 days of test weld(s) receipt. Detailed procedures for obtaining required test weld plates/tubes, production and submission of test welds, and documentation are in NAVAIR 01-1A-34. The recertification interval for I-level aeronautical welders is 1 year for both military and civilian personnel. Recertification can be accomplished by either:

(1) Sending all required test plates/tubes to the nearest FRC Materials Laboratory for evaluation.

(2) Sending the individual to the nearest welding school recertification class.

e. Proficiency demonstration and sustained certification requires Welder's Log documentation from the Work Center Supervisor or a QAR that the welder has welded at least 1 ferrous and 1 non-ferrous item every 30 days in any process. Additional requirements are specified in NAVAIR 01-1A-34. Failure to maintain proficiency for 90 days requires the welder to recertify per NAVAIR 01-1A-34. ACC or TYCOMs may extend certification of welders for a maximum of 90 days in cases where test welds have been submitted but results and recertification documentation have not been received from the cognizant examination and evaluation facility.

f. Welders whose test specimens fail to meet minimum requirements are allowed one retest. Retest requires submission of a double set of test welds of the failed group(s) of metal(s) to the same welding examination and evaluation facility that failed the first test weld(s). Welding examination and evaluation facilities shall forward double sets of test plates to the failed welder's command concurrently with notification of failure. Retest welds must be submitted within 30 days of receiving notification of failure of first test weld(s). Failure of any test welds to meet the minimum requirements will require the welder to satisfactorily complete the following course(s) (as applicable) to recertify:

(1) Aircraft/Support Equipment Basic Welding Recertification course (Course N-701-0008).

(2) Oxyfuel/Shielded Metal Arc Welder Recertification course (Course N-701-0010).

g. NAVAIR 01-1A-34 contains additional information and guidance relative to qualification, certification, recertification, and employment of aeronautical welders. However, it is a general series technical manual intended to be used in conjunction with this instruction and with specific maintenance, repair, overhaul manuals, and engineering documents. In cases of conflict between NAVAIR 01-1A-34 and this instruction regarding certification or recertification policy, this instruction shall take precedence.



### 3.2.2.22 Vibration Analysis Program

a. Vibration analysis provides the capability to detect faults and degradation in aircraft, dynamic components, and engines by the analysis of trends in vibration characteristics. The objectives are to reduce vibration related material failures, reduce crew fatigue, and improve safety, reliability, and readiness.

b. The provisions of this program apply to all aircraft that require vibration analysis. Applicable aircraft maintenance technical manuals contain requirements and procedures for troubleshooting, performing vibration analysis, documenting and reporting the results, training, and record keeping requirements.

c. I-level and D-level maintenance activities are responsible for performing vibration testing on aircraft engines and dynamic components undergoing repair, as specified in applicable maintenance technical manuals.

d. Refer to [Paragraph 7.6.4](#) for additional requirements for O-level vibration analysis.

### 3.2.2.23 Expeditionary Airfield (EAF) Program

EAF is a shore-based, Aviation Weapons Support System that permits deployment of landing force aircraft within effective range of ground forces. The goal of the EAF is to provide the task MAGTF with a flexible capability to rapidly deploy and establish survivable, self-sustaining airfields in support of the Aviation Combat Element for employment in an Expeditionary Operation. The EAF subsystems include an airfield surface system, aircraft recovery system, airfield terminal guidance system, and airfield lighting and marking systems. The maintenance program for EAF follows the guidelines of this instruction. EAF serves as a single functional program with multiple internal functional areas. Program management resides in COMNAVAIRSYSCOM (PMA-251).

### 3.2.2.24 Planner and Estimator (P&E) Services Program

a. The P&E Program provides specific guidance for requesting P&E services for aircraft damaged or deteriorated beyond the capability of O-level and I-level maintenance to restore the aircraft to service.

b. Type Wing Commanders, Commanding General, Marine Air Wing (CGMAW), Commanding General, Marine Brigade (CGMARBDE), and Air Wing Commanders will coordinate and monitor P&E services requests from subordinate commands.

**NOTE: Repairs in excess of 250 hours require TYCOM Class Desk approval.**

c. Reporting Custodians, when practical, must obtain concurrence from the supporting I-level and Type Wing that D-level services are required, prior to submission of a P&E services request. When requesting ASPA/MCI, I-level concurrence is not required.

d. P&E requests shall be submitted to the nearest DRP via the JDRS Web site (<https://jdrs.mil>) and include copies of all supporting documents. A unique Report Control Number (RCN) shall be used for each P&E request and will be documented via the RCN log per [Chapter 10, paragraph 10.9.3.2](#). The nearest DRP will determine if they have the necessary repair capability.

**NOTES: 1. ASPA/MCI inspection must be requested by naval message (Figure 3-16). Naval message to request P&E services for repairs (including repairs required due to ASPA/MCI) are only authorized if JDRS connectivity is not available.**

**2. FRCWP ATSUGI JA is responsible for providing P&E support to Navy and Marine Corps forces permanently sited in or deployed to Pacific Command, European Command, and Central Command areas of responsibility.**

e. Reporting Custodians must:

- (1) Prepare aircraft for ground maintenance per applicable maintenance technical manuals.
- (2) Remove spare and loose gear.
- (3) Preserve aircraft per existing regulations.
- (4) Report aircraft status changes per [Chapter 5](#) and [Appendix E](#).
- (5) Provide appropriate assistance to the P&E inspector and D-level repair team to expedite repair or restoration of damaged or defective aircraft.
- (6) Remove all classified equipment.
- (7) Update the JDRS P&E Preliminary Damage Aircraft Condition Disposition (DACD) tool with required part/material (requisition number, requisition status, and date received) fields as annotated by the DMA activity.
- (8) Send a JDRS Technical Dialog to the servicing depot activity when all parts or materials have been annotated “received” within the JDRS P&E Preliminary DACD tool.
- (9) Retain physical custody of aircraft safety, security, reporting, and maintenance.
- (10) Provide, connect, and service ground equipment. Accomplish positioning, jacking, or servicing of the aircraft. Remove and reinstall aircraft parts and components within O-level capability or level of maintenance for access to accomplish the D-level repair.
- (11) Accomplish operational test/leakage checks.
- (12) Prepare aircraft for flight and accomplish post maintenance check flight (if required).

**NOTE: If depot induction is required, up-to-date engine logbooks and associated records must be delivered with the aircraft.**

f. Depot activities must:

- (1) Acknowledge JDRS P&E Requests within 1 working day of submission.
- (2) Import into JDRS, P&E requests submitted outside the Web site.

**3.2.2.25 Aircraft Survivability Equipment (ASE) Program**

a. The objective of the ASE Program is to establish policy, responsibilities, and requirements for monitoring equipment conditions in an effort to sustain a satisfactory level of aircraft survivability equipment/systems readiness. For the purpose of this instruction, ASE is defined as:

- (1) Infra-Red Countermeasures.
- (2) Missile Warning Systems.
- (3) Countermeasure Dispense Systems.

- (4) Radar Warning Receivers.
- (5) Integrated Defensive Electronic Countermeasures.

b. The ASE Program provides Navy and Marine Corps aviation activities the guidance necessary to achieve required performance, readiness, and logistic support by establishing policy for ASE system and equipment management. All aspects of the ASE Program are critical for organizations to conduct assigned missions in places of hostile aircraft threats and for effective management of ASE systems installations. Given the complexity of airborne weapons systems, it is necessary to provide thorough maintenance and training for maintenance and aircrew personnel.

c. Responsibilities

(1) COMNAVAIRSYSCOM (PEO(T)) has overall cognizance of the ASE Program and is responsible for program management.

(2) The ACC or TYCOM shall monitor the ASE Program for activities under their cognizance.

(3) Wings/MALS:

(a) Designate, in writing, an ASE Program Manager.

(b) Maintain an accurate inventory of ASE equipment for assigned aircraft per ACC or TYCOM direction.

(c) Provide guidance and oversight to sustain satisfactory ASE system and equipment availability and readiness for all assigned aircraft activities.

d. Responsibilities; O-level and I-level activities

(1) MO:

(a) Designate, in writing via the MMP/SME listing, the ASE Program Manager.

(b) Ensure personnel are properly trained prior to performing ASE equipment and system maintenance/checks.

(2) Program Manager:

(a) Be knowledgeable of applicable instructions and maintenance technical manuals.

(b) Establish and maintain a training program for verification during Type Wing and ACC or TYCOM audits and provide supervised work experience to new ASE technicians.

(c) Maintain a current inventory of all ASE equipment and forward the inventory not later than the 15th of every month to the ACC or TYCOM via appropriate Wing/MALS.

(d) Maintain an account with the Naval Data Distribution System Web site (<https://ndds.navair.navy.mil/>).

(e) Ensure platform ASE system software loads are current with Naval Data Distribution System Web site (<https://ndds.navair.navy.mil/>) and forward software inventory not later than the 15th of every month to ACC or TYCOM via appropriate Wing/MALS.

- (f) Screen monthly ASE inventories for completeness and accuracy.
  - (g) Assist in preparing NAMDRP reports.
  - (h) Ensure periodic maintenance is accomplished per applicable maintenance technical manual.
- (3) Work Center Supervisor:
- (a) Ensure required maintenance actions are completed at designated intervals.
  - (b) Ensure ASE Program training is provided to required personnel. All personnel performing maintenance on ASE systems shall have a thorough knowledge of system operation and verification of software loads.
  - (c) Ensure applicable IMRL and tools are available in ready for use condition.
  - (d) Ensure NAMDRP reports are submitted when warranted.

### 3.2.2.26 AIRSpeed

The AIRSpeed Program is an enterprise-wide approach to enhancing the effectiveness and efficiency of naval aviation by implementing AIRSpeed Continuous Process Improvement (CPI) methods to improve quality, productivity, and cost.

a. AIRSpeed CPI Methods. The primary AIRSpeed CPI methods are lean, six sigma, and the theory of constraints (TOC). Lean focuses on achieving reduced cycle time by reducing or eliminating waste in products and services. Six sigma focuses on reducing variation and increasing quality through information management and statistical analysis of processes. TOC is a management philosophy to identify and manage constraints that inhibit organizations from achieving their goals.

b. AIRSpeed CPI Training. Navy I-level activities and Marine Corps MAGs shall develop and sustain a sufficient number of trained CPI personnel with the knowledge, skills, and abilities required to successfully execute CPI projects. CPI training begins with an introduction to CPI concepts and terminology. As training progresses, individuals are assigned to take advanced courses and lead CPI projects and events. Fundamental AIRSpeed CPI training courses:

(1) NAE CPI Awareness Training (On-Line) - Computer Based Training (CBT) available through Navy Knowledge Online (NKO) at (<https://www.nko.navy.mil>). Course provides an introduction to CPI concepts and tools and requires four hours of self-study. Required for all personnel.

(2) Yellow Belt Training - One or two day classroom training conducted by certified Yellow Belt instructors. Course provides an overview of CPI concepts and tools using simulations to teach and reinforce these ideas. Course may be delivered as Just-In-Time (JIT) training to provide the pre-requisite skills required to participate as team members on Green Belt or Black Belt projects and events. Required for Navy and Marine Corps E-6 and below, personnel that have not completed Champion/Project Sponsor or Green Belt training.

(3) Champion/Project Sponsor Training - One day classroom training for leaders and managers designated as Deployment Champions or Project Sponsors of CPI events. Champion/Project Sponsor training provides the tools required for identifying strategic priorities, developing project portfolios and managing the execution of an effective CPI deployment plan. The course covers specific roles and responsibilities of CPI implementation including, project charter development, tollgate reviews, and other

topics required to successfully manage CPI projects and sustain the resulting gains into the future are covered. Required for E-7 and above that have not completed Green Belt training.

(4) Logistics Chain Management Initial (LCMI) (On-Line) - LCMI is a CBT training class available through Navy Knowledge Online (NKO) at (<https://wwwa.nko.navy.mil>). Course requires four to six hours of self-study and provides TOC and Lean Six Sigma awareness training to personnel new to CPI methodologies. Course is divided into six units, with each unit further sub-divided into Learning Objectives that are downloadable for use by Belts and CPI providers in JIT training.

**NOTE: LCMI is a prerequisite for the Logistics Chain Improvement Practitioner Course (LCIP).**

(5) Green Belt Training - Five day (40 hours) classroom training conducted by certified Green Belt instructors using the DON Green Belt body of knowledge. Course provides a practitioner's level understanding and application of lean, six sigma and TOC performance improvement methods and is required for Green Belt certification. Upon successful completion of the training, students will be prepared to conduct Rapid Improvement Events and provide support for projects and performance improvement initiatives within their organization. This course or the LCIP course is required for AIRSpeed CPI Work Center personnel and two personnel from each IMA Division and the Aviation Supply Division.

**NOTE: Green Belt training is a prerequisite for the LCIP course.**

(6) Logistics Chain Improvement Practitioner (LCIP) course - Course develops the skills required for LCIP to apply Theory of Constraints (TOC), Lean and Six Sigma methodologies to improve performance through the use of the Prep, Design, Deploy and Sustain (PDDS) model. Instructors are within the regional AIRSpeed Offices at COMFRC, CNAF, and ASL. This course or the Green Belt course is required for all AIRSpeed CPI Work Center personnel and two personnel from each I-level Maintenance and Aviation Supply Division.

(7) Black Belt Training - Black Belt training consists of a minimum of 160 hours of classroom training spread over several months. Training is conducted by Certified Black Belt instructors using DoN approved Black Belt body of knowledge. Training provides advanced CPI instruction and prepares participants for leading Define, Measure, Analyze, Improve and Control (DMAIC) projects using the full complement of CPI principles and tools.

c. AIRSpeed CPI Certification.

(1) Certified Green and Black Belts are key resources within the NAE. The AIRSpeed CPI certification process prepares practitioners to understand and apply increasingly advanced CPI tools and to progressively accomplish more sophisticated analysis. Hands-on training is used to build on the knowledge gained during basic CPI training in order to provide Green and Black Belts with the skills required to execute CPI projects.

(2) The certification process is documented and monitored using NAE JQR forms (Navy) and Practitioner Capability Progression forms (Marine Corps) available on the COMNAVAIRPAC AIRSpeed SharePoint site and in the NAE CPI Guidebook. Forms can also be obtained from the COMNAVAIRPAC AIRSpeed Office.

**NOTE: The Enterprise AIRSpeed's Web site provides additional information, training, courses and forms related to the AIRSpeed Program.**

(3) AIRSpeed CPI governing documents include DOD Directive 5010.42, DODINST 5010.43, DOD CPI LSS Guidebook, NAE CPI Guidebook, USMC CPI Guidebook, and Buffer Management Tool (BMT) Users Guide.

### 3.2.2.27 Fleet Engineering Disposition (FED) Program

a. The FED Program authorizes repair procedures to be performed by I-level activities for aircraft and components damaged beyond documented I-level repairable limits and provides the following:

(1) Permits a one-time deviation from documented procedures for specific repairs on an individual basis.

(2) Provides repair instructions that will restore the full strength of the damaged component or sufficient strength and service life to allow for a one-time ferry flight to another repair facility.

(3) Authorizes repairs that can be performed on any ship or shore-based I-level repair activity with the capability and the required certified personnel.

**NOTES: 1. Specific implementation of the FED Program varies depending on the platform. The FED Program may be known by other names, such as Damage Engineering Disposition (DED) for FA-18 and EA-18G, Technical Assist Request (TAR) for V-22, or Fleet Technical Instruction (FTI) for H-60. The IMA shall contact the cognizant ISSC for coordination.**

**2. The FED Program cannot be used to provide standing authorizations or repairs that apply to more than one site or component.**

b. Implementation.

(1) I-level. When a component is damaged beyond allowable I-level repair limits in the applicable repair manual, the IMA may submit a FED request to the cognizant ISSC engineering authority. The FED Program is most well-suited to structural repairs, specifically; composite control surfaces, panels, and doors. FED requests shall include all pertinent component and damage information.

**NOTE: I-level repair activities are not required to submit FED requests prior to BCM. Requests should be submitted at the IMAs discretion if, in their estimation, the component is repairable on-site using existing methods and capabilities. It is the responsibility of the IMA to determine if a FED request is appropriate.**

(2) ISSC Engineering. The ISSC shall provide specific damage reporting instructions and training to I-level activities. The ISSC shall designate a point of contact to manage and support the FED Program. The cognizant ISSC engineering authority will receive incoming FED requests and shall provide repair or BCM disposition. The ISSC shall include instructions for any required logbook or SRC card entries with the disposition. ISSC Engineering shall evaluate incoming requests and repair possibilities based on the following:

- (a) Component criticality.
- (b) Severity and type of damage.
- (c) Strength requirements for repair.
- (d) Complexity of repair method.
- (e) Level of certifications for on-site repair personnel.
- (f) Facilities, equipment, and materials available on site.

(3) QA. For repair dispositions containing processes that require a D-level artisan, the ISSC engineering authority shall note these requirements and route through the cognizant D-level FRC QAS for approval prior to releasing the disposition to the IMA per [Chapter 7](#).

c. Application. FED damage reporting and requesting procedures shall be accomplished per instruction provided by the applicable ISSC engineering authority. FED requests shall be submitted electronically using method(s) approved by the cognizant ISSC. FED repair procedures shall be accomplished per disposition provided by engineering and all references.

d. Documentation. FED shall be documented on a MAF/WO and logged in the component SRC card or aircraft log book as required. The ISSC engineering designated FED POC shall assign unique tracking numbers to all incoming FED requests and maintain indefinitely. A FED tracking number shall be provided to IMA upon receipt of the FED request and maintained in NALCOMIS upon completion of the repair.

### 3.2.3 Non-NAMPSOP Maintenance Processes

Non-NAMPSOP maintenance processes addressed in this chapter are intended to be implemented using this instruction and specific program related technical manuals, which are identified within the text. Generation of supplemental instructions below ACC or TYCOM/Wing level to augment these policy management documents is not authorized. All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

#### 3.2.3.1 Aircraft and Support Equipment (SE) Painting

a. The primary objective of any paint system is to protect exposed surfaces and components against corrosion and other forms of deterioration. Maintenance and repair of paint finishes are extremely important, beginning with aircraft weapon systems development and continuing with constant surveillance throughout the service life of the systems.

b. The coating systems used on naval aircraft and the colors selected have been developed to provide maximum tactical advantage and protection of critical surface material. Touch-up painting shall be restricted to only that amount required to repair damage during the corrosion repair process. Repainting of aircraft or entire sections of the aircraft at O-level and I-level maintenance is specifically prohibited, except when authorized in writing by the TYCOM.

(1) The standard paint system for all naval aircraft and SE is an aliphatic polyurethane resin. Polyurethane provides maximum flexibility, weatherability, and resistance to all aircraft fluids.

(2) The epoxy polyamide topcoat is an alternate authorized for touch-up of polyurethane at O-level and I-level, only when polyurethane is not available, or when prohibited by specific directives. Epoxy has an excellent chemical resistance; however, it has low temperature flexibility and exhibits poor weatherability when exposed to direct sunlight for extended periods.

c. The environmental protection agency, as well as certain local and state air pollution control districts, have implemented rules which limit the Volatile Organic Compound (VOC) content or solvent content of paints applied to aircraft and SE. Manufacturer's thinning instructions must be followed to ensure VOC limits are not exceeded. The Station Safety Officer, Environmental Officer, or Industrial Hygienist (IH) should be consulted to determine if coating conforms to local environmental regulations ([Chapter 10, paragraph 10.19](#)).

d. Material technology and environmental regulations change rapidly. Therefore, as required, COMNAVAIRSYCOM (AIR-4.9.7) or the ACC or TYCOM shall promulgate changes to the list of authorized materials. These changes will be in official correspondence via naval message, letter, or publication changes. Authorization to deviate from approved material/processes must be requested and

approved in writing by the ACC or TYCOM prior to use. Copies of changes to the authorized material list shall be provided to the host safety office and the cognizant Navy IH.

e. Application and maintenance of the coating used on aviation SE is similar to that required for aircraft. Aliphatic polyurethane and epoxy polyamide are commonly used. However, environmental regulations in some geographic areas further restrict the VOC content of paint and primer formulations for SE. NAVAIR 17-1-125 contains detailed instructions for SE and coating maintenance. COMNAVAIRSYCOM (AIR-4.9.7) must approve all material and processes used in the maintenance of aeronautical equipment. The use of any non-approved process is strictly prohibited. Because state and local governmental agencies are empowered to restrict the use of maintenance chemicals, paints, and processes, all activities are responsible to be knowledgeable of and comply with these regulations. Maintenance managers must meet both COMNAVAIRSYCOM (AIR-4.9.7) engineering requirements and state and local environmental requirements. Close coordination with the host base Environmental Office and the ACC or TYCOM are required to keep abreast of constantly changing requirements.

f. Protection standards limit work place unprotected exposure of Hexamethylene Diisocyanates or Toluene Diisocyanate to a concentration of 0.005 PPM averaged over an 8-hour period. Additionally, unprotected workers may not be exposed to Toluene Diisocyanate concentrations exceeding 0.02 PPM for any 15-minute period. These standards apply to military and civilian workers. Half-face organic vapor (charcoal) air purifying respirators used to protect workers against Toluene Diisocyanate or Hexamethylene Diisocyanates cannot be used when the concentration of these contaminants exceed 0.005 PPM. Isocyanate substances are also problematic: They cannot be detected by smell or taste should the respirator cartridge fail or become ineffective due to overloading.

g. All NAE activities:

- (1) Coordinate and monitor compliance with this instruction.
- (2) Notify the ACC or TYCOM of any difficulties encountered with this instruction.
- (3) Assess subordinate activities' compliance with this instruction during inspections conducted per [Chapter 2](#).

h. Aircraft reporting custodians and IMAs or FRCs (afloat and ashore) shall ensure:

(1) The industrial hygiene survey includes an assessment of paint touch-up operation of aeronautical equipment per NAVAIR 01-1A-509, OPNAVINST 5100.23, and OPNAVINST 5100.19. The evaluation shall include, at a minimum:

- (a) Process descriptions.
- (b) Process assessments.
- (c) Process locations.
- (d) Contaminant control methodologies.
- (e) Medical surveillance requirements.
- (f) PPE requirements.

(2) The cognizant IH is notified of any permanent changes to the process or its components that may affect the workplace.



**NOTE: This requirement is not restricted to material containing isocyanates.**

(3) Only supplied-air respirators are used for touch-up operations requiring a quantity of paint greater than 8 ounces per 8-hour period for paints that contain isocyanates. Unless recommended otherwise by the cognizant IH, half-face or full-face organic vapor air purifying respirators may be used for short-term touch-up operations using 8 ounces or less of paint containing isocyanates. Aircraft reporting custodians will also ensure:

- (a) Paint VOC content does not exceed local environmental restrictions.
- (b) Personnel conducting touch-up processes are medically qualified and have received appropriate training.
- (c) Non respiratory factors, such as skin exposure are taken into account.
- (d) An effective change schedule is established and implemented for organic vapor cartridges.

(4) Personnel assigned duties involving the opening, mixing, or application of coating materials receive the necessary training, pre placement, periodic medical surveillance evaluations, and respirator fit testing/use recommended by the servicing Navy IH.

(5) Personnel assigned duties involving exposure to potentially harmful dusts, mists, or vapors wear/use personal protective clothing and equipment required by NAVAIR 17-1-125, NAVAIR 01-1A-509 (series), NAVAIR 01-1A-75, OPNAVINST 5100.19, OPNAVINST 5100.23, and NAVAIR A1-NOSH-SAF-000/P-5100-1 as specified in the Industrial Hygiene Survey Report.

(6) Unprotected personnel are restricted from areas where exposure to potentially harmful dusts, mists, or vapors exist.

(7) Unprotected personnel are restricted from areas where polyurethane or other potentially hazardous coatings are used including opening, mixing, and application. Refer to Material Safety Data Sheets and Industrial Hygiene survey for the specific coating/maintenance material to determine hazards.

(8) Complete repainting of SE and ancillary/components is an authorized I-level maintenance function. Whenever possible, painting shall be done in a paint booth. When performed ashore, inspection and approval by the host Occupational Safety and Health Office or Fire Department is required per OPNAVINST 5100.23. When painting in standard maintenance hangars and spaces afloat, approval of the Safety Officer or IH is required. Painting procedures shall comply with personnel safety and health requirements.

(9) Aircraft paint schemes shall be maintained as delineated in MIL-STD 2161C(AS) and as follows:

- (a) Squadron logo or insignia is restricted to aircraft tail(s) only.
- (b) Squadron logo or insignia on Tactical Paint Scheme (TPS) aircraft shall use only the low contrast shade of TPS gray against gray background and camouflage painted aircraft shall use black (color number 37038) against land camouflage background.
- (c) Aircraft side numbers and squadron identifier may be painted in flat black or TPS gray.
- (d) Aircrew, plane captain, and ship name may be added with letters not exceeding two inches in size in flat black or TPS gray.

(e) Navy Type Wing Commander and Marine Corps Air Wing Commanders are responsible for the uniformity of all aircraft under their cognizance. Additional markings and color schemes are strictly prohibited.

**NOTES: 1. Low observant aircraft shall not be authorized to be painted with the squadron/air wing colors.**

**2. One aircraft per squadron (two aircraft for FRS) is authorized to be painted with the squadron or air wing colors. Areas authorized to deviate from TPS include: the tails, alphanumeric characters, national star insignias, and no more than 25 percent of the aircraft fuselage. For example, aircraft side and BUNO numbering and pilot and plane captain names may be painted in squadron colors to include a shadowing effect (if desired). Squadron colors and logos, such as striping, may be painted on the fuselage. TPS and camouflage integrity must be restored prior to deployment. Non-deploying squadrons transferring aircraft to a deploying squadron must return non-compliant aircraft to TPS prior to transferring the aircraft.**

**3. Force Protection paint scheme shall be used for all utility aircraft per MIL-STD 2161C(AS).**

i. Deviations from authorized paint scheme will only be considered for tactical reasons, for example, to evaluate an alternate paint scheme.

### 3.2.3.2 Preservation

#### a. Aircraft Preservation

(1) Prevention of deterioration is one of the more important requirements of the NAMP. Corrosion damage and other forms of deterioration can seriously impair mission readiness and the conservation of reserve stocks of aircraft.

(2) Deterioration damage is greatest when aircraft are dirty, inactive, or being shipped. Mission readiness depends on the effectiveness of maintenance and protection programs. If the work of repairing deterioration damage is added to the normal workload, maintenance becomes very difficult, time consuming, and costly.

(3) NAVAIR 15-01-500 provides instructions for initial preservation treatment, preservation maintenance procedures, and necessary depreservation steps.

(4) Special maintenance technical manuals have been or are being prepared for each T/M/S aircraft to specify preservation/maintenance requirements for temporarily inactive, flyable and nonflyable, aircraft for periods up to six months. These special maintenance technical manuals include sensitive maintenance actions required to prevent deterioration of all systems and equipment during periods of inactivity. Reporting custodians having aircraft not covered by preservation maintenance technical manuals shall comply with the requirements of NAVAIR 15-01-500. The T/M/S Baseline Manager will ensure requirements of NAVAIR 15-01-500 are built into the baseline for aircraft not covered by preservation maintenance technical manuals.

#### b. Component Preservation Packaging, and Handling.

(1) All aeronautical material, regardless of 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 T/M/S Baseline Manager will ensure requirements of NAVAIR 15-01-500 are built into CM baseline for components (engines, prop assemblies, APUs, AAS, etc.) not covered by preservation maintenance technical manuals. The P700-CNP Web site

(<https://tarp.navsisa.navy.mil/p700.nsf>) provides preservation and packaging requirements for specific repairable components.

(2) In no case shall NRFI material be casually and carelessly handled, merely because it is intended to undergo repair. Particular care shall be given to the movement, staging, and transportation of repairables to be forwarded to a repair activity, to prevent further damage that could require additional time and money to repair.

(3) The processing work center is responsible for internal and external preservation, prior to packing, of all components. The AMSU will ensure the component is adequately protected for local routing to the supply or FRC packing and preservation section. For the Marine Corps, this is the function of the Supply Shipping Branch of the RMD. The packing and preservation section is responsible for final packing and preservation of components, less engines, prior to storage or shipment. Engines are packed and preserved by the IMAs or FRCs.

(4) When it is determined a component is to be turned in to salvage, an I-level work center will disassemble the component so all repairable subassemblies can be handled separately. Tag each subassembly as NRFI and annotate the tag with the words "salvaged from condemned repairable components". The subassemblies are then delivered to the CCS of the ASD without further documentation. The stripped carcass is processed in the normal manner for condemned material. For tracked CM components, IMA OR FRC shall make an electronic entry stating the component has been salvaged and transfer the CM ALS records to the OOMA Electronic Repository at COMNAVAIRSYSCOM (AIR-6.8).

### 3.2.3.3 Recovery and Reclamation of Crash Damaged Aircraft

a. General procedures and basic policies for the recovery, reclamation, and transfer of crash damaged aircraft are in [Chapter 5](#).

b. When an aircraft crashes within the land area of a naval district in CONUS and the reporting custodian requests recovery assistance from the cognizant Type Wing or CGMAW, the nearest Navy or Marine Corps air station, facility, or activity designated by the cognizant Type Wing or CGMAW is responsible for recovering the damaged aircraft. The reporting custodian will provide officers and enlisted personnel to assist in the recovery, as requested.

**NOTE: If a damaged aircraft is suitable for repair/rework, it should be inspected at the scene of the mishap using D-level P&E, if possible.**

c. When an aircraft crashes outside CONUS, the reporting custodian notifies the cognizant COMFAIR/CGMAW who makes the necessary arrangements for disposition and, if necessary, reclamation of the aircraft. The cognizant COMFAIR also designates the station, facility, or unit to recover and accept physical custody of the damaged aircraft. The cognizant COMFAIR/CGMAW arranges for qualified personnel to determine the suitability of aircraft damaged outside CONUS for rework, repair, or other disposition.

d. Disposition and salvage procedures for stricken aircraft are addressed as follows:

(1) When a damaged aircraft is determined to be beyond rework, the aircraft shall be reported as a category one strike, per [Chapter 5](#) and [Appendix E](#). In this case, the aircraft may be transferred to the nearest CONUS naval air activity for return to COMNAVAIRSYSCOM FS custody and final disposition.

(2) When it is impractical to return the aircraft to COMNAVAIRSYSCOM Fleet Support (FS) custody, the reporting custodian shall physically transport the aircraft to the supporting supply activity designated by the ACC or TYCOM. The stricken aircraft will be reported to COMNAVAIRSYSCOM

for processing per current instructions for the SARDIP. No one, other than the IMA OR FRC reclamation team, is allowed access to stricken aircraft.

(3) Requests for stricken aircraft, components, or assemblies will be directed to the CO of the salvaging activity, marked "Attention Supply Officer."

(4) NTCSS Optimized OMA NALCOMIS activities with stricken aircraft, components, or assemblies that have CM ALS records shall make entries stating they are stricken and transfer the record to COMNAVAIRSYSCOM Wholesale Foundation Tier.

#### 3.2.3.4 Emergency Reclamation

a. Aircraft reporting custodians and I-level activities must:

(1) Publish LCPs per [Appendix D](#) with emergency reclamation processing procedures tailored to the T/M/S aircraft, equipment, components, and SE under their control. LCPs must include emergency reclamation requirements per [paragraph 10.13.3.7](#) and decontamination procedures of NAVAIR 01-0A 509 for aircraft, equipment, components, or SE exposed to nuclear, biological, and chemical (NBC) agents.

(2) Verify the emergency reclamation material and equipment specified in NAVAIR 01-1A-509-2 is readily available.

b. I-level activities will assist O-level activities by providing emergency reclamation expertise and equipment not authorized for O-level maintenance.

c. D-level activities must comply with the emergency reclamation requirements per [paragraph 10.13](#).

#### 3.2.3.5 Management Information Systems (MIS)

a. CMIS Component Tracking System for Aircraft tracks the operating time/cycle counts of selected aircraft components. They are primarily life limited components and the system can supply reports which specify the operating time/cycle counts remaining on each tracked component before it must be inspected or removed and replaced. Using usage rates derived from experiments and tests, workloads for maintenance and rework facilities can be forecast for 5 years. In addition, long range requirements for new and newly reworked components can be developed. The ISSC, or in some cases the APML, for each aircraft in the system is responsible for maintaining and updating the database for the aircraft. Each ISSC can provide management information on the following rotary wing aircraft: H-1, H-60, H-53, and H-46. Fleet units and others may also obtain such information directly. For further information concerning development of this direct data access capability, contact COMNAVAIRSYSCOM (AIR-6.8.4).

b. CMIS Component Tracking System for Engines tracks the operating time/cycle counts or Life Usage Index (LUI) of selected engine components. They are primarily life limited engine components. The systems can supply reports which specify the time/cycle counts or LUIs remaining on each tracked component before it must be inspected or removed and replaced. Using usage rates derived from experiments and tests, workloads for maintenance and rework facilities can be forecast for 5 years. In addition, long range requirements for new and reworked components can be developed. The ISSC, or in some cases the Assistant Program Manager for Logistics (APML), for each engine in the system is responsible for maintaining and updating the database for each engine. Each ISSC can provide management information on J85, T700, TF34, J52, T64, T76, T58, T56, and T400 engines. Fleet units and others may also obtain such data directly. For further information concerning development of this direct data access capability contact COMNAVAIRSYSCOM (AIR-6.8.4).

c. The DECKPLATE tracks location and status (installed, uninstalled, RFI, and NRFI) of engines, propulsion systems, and modules worldwide, and provides reasons for any changes. The system also tracks both RFI and NRFI spare engines, propulsion systems, and modules which are in transit, awaiting repair or rework, or actually in repair or rework. The system is used extensively by controlling custodians and other managers to effect the most efficient distribution of engine assets. Refer to NAVAIRINST 13700.15 and ACC instructions for detailed procedures.

d. The Depot Maintenance Data Systems (DMDS) is a module of the NAVAIR Depot Maintenance Systems (NDMS) and is designed to gather all basic information generated by maintenance personnel through documentation procedures, data automation and storage techniques, and common data retrieval routines. The information will be gathered from mechanics, technicians, inspectors, and supervisory personnel in all of the basic organic D-level endeavors.

e. The Flight Information Recording and Monitoring System monitors and records data critical to the determination of the life limits of aircraft and engine components. The data is collected for download to a ground station for diagnostics and to update life usage indexes when coupled with MAFs, WOs, NAVFLIRS, and Naval Flight Documents, this non-tactical data provides a database for detailed analysis of engine performance, engine life limited items, material usage and life remaining, and in-flight airframe structural loading. Additionally, the data can be used in support of the SAFE Program. The Maintenance Signal Data Recording System data storage unit must be removed from the aircraft and processed for generation of reports as required.

f. LAMS is an automated management information system which provides for standardized local management of IMRL assets.

g. Master Component Rework Control System is a system to provide a consolidated, comprehensive on-line database of component and SE stock number catalog, designated overhaul point assignment and capability data, production history, and financial performance and obligation data.

h. MEASURE is a system for the recall and reporting of test equipment by means of automatic data processing techniques. This system maintains records of calibration and automatically recalls test equipment when due for calibration.

i. NALCOMIS provides O-level, I-level, and ASD activities with a modern, real time, responsive, computer based MIS. The three objectives of NALCOMIS are to increase aircraft readiness by providing local maintenance and supply managers with timely and accurate information required in their day-to-day management and decision making process, reduce the administrative burden on the fleet, and improve the quality of upline reported data.

j. NTCSS Optimized NALCOMIS provides O-level, I-level, and D-level activities with an improved capability to manage aircraft maintenance and configuration. It also provides the capability to track maintenance resources and document aircrew flight time and system usage information. NTCSS Optimized NALCOMIS has the capability to provide maintenance and configuration data up-line in near real-time and receive automated maintenance planning data updates. The CM portion of NTCSS Optimized NALCOMIS offers a full range of capabilities to manage aircraft and component configuration. It provides accurate listings of all aircraft components that are considered tracked items, tracks usage indicators for life limited components, maintain configuration items history records, and forecasts scheduled maintenance.

(1) CM provides the basis toward achieving a completely automated maintenance environment, which streamlines the entire maintenance process. It provides the ability for the automation of data entry from aircraft flight recorders (memory unit (MU), health and usage monitoring system (HUMS), self-monitoring and reporting technology (SMART) card), the automatic accumulation and tracking of usage.

The NTCSS Optimized OMA NALCOMIS requirement is to create a system by which individual platforms may independently develop application modules such as pilot and maintenance debrief, on-line diagnostics, structural life prognostics, IETM, and PEDD, which can operate in conjunction with the core functions. The CM module will interface with various platform specific software application modules that address specific maintenance functions. It is COMNAVAIRSYSCOM policy that the CM module will support and enhance the maintenance plans developed and maintained by the designated APLM/LM.

(2) The Integrated maintenance process of the CM module encompasses three major areas:

(a) Equipment. To validate the ongoing disassembly and rebuilding of equipment, an equipment configuration baseline is required. Once this baseline is put in place, the actual configurations of the equipment can be tracked.

(b) Usage. As aircraft become more sophisticated with various sensors, maintenance will be, and is today, driven with advanced LUIs, such as fatigue cycles and thermal cycles. Prior to defining any maintenance based on these parameters, there must be a usage baseline established to define the usage data available for each equipment type in the equipment baseline. Once this is in place, the usage can be correctly tracked and accumulated against the right equipment.

(c) Maintenance. Once the equipment configuration baseline and usage baselines have been defined, the maintenance baseline can be assembled defining all scheduled preventive maintenance (PMIC, MRCs, TDs, and other service bulletins) as well as the potential corrective repairs that are anticipated (conditional or unscheduled maintenance). The maintenance baseline becomes integrally linked with the equipment configuration baseline and the usage baseline. Maintenance entries can be validated using the maintenance baseline to ensure the proper maintenance tasks and usage at the time of maintenance is being recorded against the proper equipment types. By applying a scheduler to the maintenance entries, and by associating the actual equipment configurations and actual usage, the system is then able to schedule all periodic maintenance.

k. NALDA is the Navy's major logistics information system used in support of the COMNAVAIRSYSCOM Life Cycle Logistics System. It provides remote hardware, telecommunications, central computing, and a database management system for fleet support operations.

l. SERMIS is a collection of technical and cataloging data identifying SE end items required for O-level, I-level, and D-level aircraft maintenance. SERMIS provides on line visibility of source, allowance, inventory, and rework data to aid in inventory control and is the repository of master data for printing IMRLs.

m. SESS is a microcomputer based asset control system for SE.

n. NDMS is a production control system used by the FRC to schedule, induct, and control D-level workload.

o. VFS CADPAD, TRACE CADPAD and TRACE LIFE SUPPORT Modules, an internet based system, provides a standardized method to manage, report and generate hard copy history records on ALSS components and installed explosive devices.

p. Military Flight Operations Quality Assurance (MFOQA) is an MIS based on the collection, download, analysis, and visualization of available aircraft systems data to provide quantifiable and actionable information that can be used to enhance naval aviation readiness through improved maintenance, operational, safety, and training efficiencies. The MFOQA concept is in response to goals set by the SECDEF for reducing mishap rates and the costs associated with mishaps. MFOQA has been mandated within the DOD for all Services (OSD Memo 11 Oct 2005), and is implemented within DON

for select aircraft using existing onboard flight and health monitoring data collection systems, for example, integrated vehicle health management (IVHM), integrated mechanical diagnostics – health and usage management system (IMD-HUMS), and VSLED. MFOQA is an off-aircraft, software only system which provides aircrew and maintenance personnel the ability to review flight data and analytical results immediately after a flight, squadron leadership with information to facilitate informed decision making, and upper echelon commands with aggregate, quantifiable information for oversight of fleet-wide aviation readiness. MFOQA also provides data-based information that can be used to objectively assess aircraft system malfunctions and performance trends to determine if changes in maintenance procedures, system design/scheduled component replacement are warranted, and if so, determine the specific changes required. It provides the means to assess the impact of any systems/ procedural changes made, and determine if further changes are warranted. The MFOQA process provides tools that can be used to measure the effectiveness of ORM intervention strategies, supports the implementation of condition based maintenance, and continually evolves as more advanced automated analytical capabilities are developed.

(1) MFOQA does not replace or supersede existing COMNAVAIRSYSCOM-approved aircraft maintenance and troubleshooting procedures or NATOPS procedures. Instead, it provides quantified aircraft data to assist the maintenance and operational decision making process, and is designed to supplement other aircraft related MIS.

(a) At the squadron level, MFOQA enables a decentralized post-flight debrief process that provides automated detection and reporting of predefined aircraft systems related events. It also provides a user-friendly interface to conduct queries of and visualize available data to facilitate more efficient troubleshooting of aircraft system malfunctions. MFOQA provides the ability to animate relevant flight segments to provide maintenance personnel with quantifiable information regarding overall aircraft systems performance when malfunctions actually occur. It also enables more thorough and objective aircrew maintenance debriefs. MFOQA provides a post-mission aircrew debrief function in a dynamic multi-dimensional animation with strip charts, cockpit instrumentation, and flight parameter values.

(b) At the squadron, Type Wing/MAG, TYCOM/MAW, and other Naval Aviation Enterprise command levels, MFOQA provides automated analysis, trending, and reporting of aggregate aircraft systems data, for example, MSP/MMP/BIT codes and predefined system operating threshold exceedances, and the ability to conduct ad hoc aggregate data queries and analyses. It also provides a robust centralized top-tier repository for historical and a cross-platform enterprise-wide analysis capabilities.

(2) COMNAVAIRSYSCOM (PMA-209) is responsible for the development and acquisition of the MFOQA system infrastructure and related support; COMNAVAIRFOR (N422) is responsible for the fleet-wide implementation of the MFOQA system. Further guidance on MFOQA processes and related responsibilities will be promulgated by COMNAVAIRFOR (N422).

### **3.2.3.6 Management of Permitted Radioactive Commodities on Naval Aircraft**

Several naval aircraft are identified to contain radioactive materials that, if not properly controlled, handled, stored, or disposed of, increase the probability of injury to personnel resulting from exposure. COMNAVAIRFOR, NAVSUP WSS, and COMNAVAIRSYSCOM are responsible for proper acquisition, storage, transport, control, inventory and disposal of naval aircraft systems containing radioactive materials or by-products under special license or permit from the Navy Master Material License issued by the Nuclear Regulatory Commission. As such, those activities shall establish specific management and accountability programs per OPNAVINST 6470.3, NAVSUPINST 4000.34, MCO 5104.3, NAVSEA A0420-AA-RAD-10, and NAVAIRINST 5104.1.

### 3.2.3.7 Automated Trending and Analysis

a. The objective of Automated Trending and Analysis is to provide a standardized and methodical process supported by a variety of tool sets for the capability of rapidly identifying and remedying aircraft/system discrepancies and personnel deficiencies such as:

- (1) Low reliability end items or systems:
  - (a) SRAs.
  - (b) WRAs.
  - (c) Aircraft/aircraft subsystems.
- (2) Integration deficiencies between ATE and the UUT, for example, SRA or WRA, and aircraft.
- (3) Training deficiencies.

b. A variety of tool sets exist that are capable of supporting basic automated trending and analysis requirements including data mining and pattern recognition. These tool sets are in a near constant state of development and as they evolve, will provide expanded capabilities for fleet and NAE engineering and logistics analysis.

c. Where implemented, automated trending and analysis systems and their tool sets, for example, comprehensive automated maintenance environment optimized (CAMEO), F/A-18 automated maintenance environment (FAME), IVHM, or IMD-HUMS, shall be used to provide Maintenance Department personnel with near real-time aircraft/equipment trending and analysis results based upon data recorded onboard their aircraft health monitoring system(s) and COMNAVAIRSYSCOM engineering/logistics databases. Maintenance Control personnel shall review the data and verify appropriate action per T/M/S instructions is taken prior to certification of aircraft Safe for Flight. Trending and Analysis System Reports shall be generated as delineated in T/M/S instructions for Maintenance Control and be reviewed by QA to identify potential lower performance reliability aircraft systems/sub-systems within the squadron by trending the number of Built-in-Test System Codes (system health) per aircraft and per flight (for a selected time domain) both individually and across the squadron's population of aircraft.

#### d. Responsibilities

(1) TYCOMs shall ensure the development and execution of relevant T/M/S specific CSECs, instructions, and SOPs governing this process.

(2) ISSC/FSTs shall review T/M/S fleet level maintenance data (available through NALCOMIS, Deckplate and T/M/S specific data warehouses) to identify potential lower performance reliability aircraft and system/subsystem trends across the total population of T/M/S inventory. Additionally, ISSCs/FSTs shall provide their findings to TYCOM/Type Wing/I-level activities to identify low reliability aircraft and end items for appropriate repair actions.

(3) The MO shall ensure trending and analysis policies and procedures are executed within the maintenance activity per T/M/S instructions.

**NOTE: FRCs shall address Automated Trending and Analysis per local command procedures, SECNAVINST 5215.1, and use local MIS for systems trend analysis per [paragraph 3.2.3.5](#).**



(4) QA:

(a) Review trending and analysis reports and correlate to NALCOMIS MAFs/WOs per T/M/S instructions.

(b) Coordinate results of trending and analysis reports and review with Maintenance Control Safe for Flight certified personnel per T/M/S instructions.

(c) Initiate appropriate NAMDRP action (as required).

(d) Ensure compliance with appropriate work centers per T/M/S instructions.

(e) Maintain copies of trending and analysis reports per T/M/S instructions.

(5) The O-level Maintenance Master Chief Petty Officer (MMCPO)/Maintenance Chief (Marine Corps) shall:

(a) Ensure Maintenance Control Safe for Flight certified personnel review squadron aircraft and BUNO specific trending and analysis data and verify appropriate action taken prior to certification of aircraft Safe for Flight per T/M/S instructions.

(b) Ensure trending and analysis is incorporated into the Safe for Flight Qualification Program.

(c) Coordinate trending and analysis follow-on training to ensure all Safe for Flight designated personnel are up-to-date on the latest procedures per T/M/S instructions.

(6) The SA/A shall provide trending and analysis reports for Maintenance Department use and per T/M/S instructions.

### **3.3 Maintenance Department, Division, and Unit Organization**

#### **3.3.1 Objectives of Standard Organization**

3.3.1.1 The NAMP provides for standard organizations having explicit responsibilities assigned. Standardization shall ensure effective management within a framework of authority, functions, and relationships necessary to achieve improvements in performance, economy of operation, and quality of work. Such objectives are not attainable by a manual of organizational structure alone. They are more readily attainable by the intelligent and dedicated efforts of all personnel engaged in maintenance, completely integrated by the management control processes used in an effective, standard organization. A standard organization for maintenance and support activities, properly implemented, will improve:

- a. Performance and training of personnel.
- b. Aircraft, equipment, and system readiness.
- c. Maintenance integrity and effectiveness for all material.
- d. Safety.
- e. Usage of maintenance manpower and materials.
- f. Planning and scheduling of maintenance work.

- g. Management and evaluation of work performance.
- h. Quality of the end product.
- i. Attainment and retention of combat readiness.
- j. Continuity when aircraft or personnel are transferred between commands.
- k. Environmental compliance.

3.3.1.2 Organizational Structure. The structures per this Chapter are based on the principles and concepts of modern management. These structures incorporate the basic span of control, proper alignment of functions, division of work, uniformity of assignments, and the delegation of authority commensurate with the assignment of responsibility.

3.3.1.3 Responsibilities of Line and Staff. A line relationship is a relationship, which exists between senior personnel and their subordinates. This relationship may be identified as a direct supervisory relationship, involving work assignment to subordinates and appraisal of performance. The staff relationship, on the other hand, is the relationship, which exists between an advisory staff supervisor and a production line supervisor. Staff elements are designed to be integral elements of the organization, wholly concerned with the exercise of servicing and supporting production elements.

a. [Figure 3-31](#) shows the relationship between line and staff functions within naval activities assigned O-level maintenance responsibilities.

b. [Figure 3-32](#) shows the relationship between line and staff functions within Marine Corps activities assigned O-level maintenance responsibilities.

c. [Figure 3-33](#) shows the relationship between line and staff functions within the autonomous maintenance unit concept authorized for large readiness and training squadrons. This organization concept may also be adapted for use by carrier air wing composite beach detachments.

d. [Figure 3-34](#) shows the relationship between line and staff functions within OMDs and certain other activities or detachments with four or less aircraft.

e. [Figure 3-35](#) shows the relationship between line and staff functions within the O-level Maintenance Department Organization (EAF).

f. The relationship between line and staff functions within AMCM Systems Maintenance Departments in Helicopter Mine Countermeasures (HM) Squadrons is shown in [Chapter 8](#).

3.3.1.4 Use of Terms. Department, as used throughout this instruction, is a general term, which applies fully to all maintenance activities having a department head. In cases of maintenance activities assigned as divisions to other departments, division will be used in place of department; branch will be used in place of division; and section in place of branch.

3.3.1.5 Organization Policy. Work centers are designated functional areas to which maintenance personnel are assigned. Typical work centers are Airframe Shops, Power Plants Shops, and Maintenance/Material Control. A work center will be established for each functional area to which maintenance personnel may be permanently assigned in an organization. The quantity and designation of work centers will be based upon required support functions, numbers of personnel, span of control, workload schedules, and specific locations. Work centers will be established as specified in [Chapter 6](#) for the lowest practicable level of supervision desired.

**NOTE: Any branch or division may be deleted whenever responsibilities relative to that branch or division are nonexistent or not extensive.**

### **3.3.2 Organization, Responsibilities, and Functions of Intermediate Maintenance Activities (IMAs)**

3.3.2.1 An IMA or FRC comprises all departmental and organizational units responsible for providing I-level maintenance support ashore and afloat. Normally, an IMA or FRC consists of the Aircraft Maintenance Department or Detachment, the Supply Department, and the Weapons Department. The IMA or FRC is responsible for performing I-level maintenance functions on the aircraft and aeronautical equipment located at the ship or station supported. [Figures 3-35, 3-36, 3-37, and 3-38](#) describe the standard organization for those activities assigned the responsibility for providing I-level maintenance support ashore and afloat.

3.3.2.2 Weapons Department organization and maintenance responsibilities appear in OPNAV M-8000.16.

### **3.3.3 Functions for Intermediate Maintenance Activities (IMAs) (Afloat)**

3.3.3.1 Afloat AIMDs shall accomplish those management, staff, and production functions applicable to shore activities even though the organizational structure is changed.

3.3.3.2 In addition to those responsibilities listed in OPNAVINST 3120.32, the AIMDs (afloat) will:

- a. Ensure the existence and proper preparation of maintenance facilities to support the embarked air wing/group.
- b. Update facility plans to accommodate new deck loads as directed by applicable instructions.
- c. Review outstanding ship alterations and submit recommendations on those concerning the AIMDs.
- d. Coordinate personnel requirements with the air wing/squadron MO.
- e. Coordinate the assignment of O-level maintenance spaces with the air wing/squadron MO.
- f. Assume responsibility for upkeep and security of O-level maintenance spaces while the air wing/squadron is debarked.
- g. Perform O-level and I-level maintenance for aircraft assigned to the ship.
- h. Provide I-level maintenance support to the Weapons Department for maintenance beyond the established capability of the Weapons Department.
- i. Receive, manage, and return spare ALSS assemblies to support the deployed air wing/squadron.
- j. Provide Production Control and brokering of Battle Force Intermediate Maintenance Activity (BFIMA) repair or maintenance requests for CV, LHA, and LHD in the battle force. Repair or maintenance support is provided as resourced by the BFIMA Repair Coordinator and as defined by the Battle Group Commander. Repair/maintenance resourcing is provided by the ACC or TYCOM for only those units assigned to the battle force group. BFIMA repair/maintenance actions will be documented in NALCOMIS.

### 3.3.4 Planning Maintenance

#### 3.3.4.1 MMP

The purpose of the MMP is to provide scheduled control of the predictable maintenance workload, for example, inspections, transfer or receipt of aircraft, and compliance with TDs. By scheduling predictable maintenance, the capability for accomplishing unscheduled work can be determined. In addition, requirements for SE, material, manpower, and other factors affecting the maintenance operation can be determined in advance of actual need.

a. The O-level MMP shall contain the following minimum information:

(1) Projected known operational commitments, including number of flights, flight hours, and aircraft requirements obtained from the Operations Department.

(2) Aircraft scheduled inspection due dates.

(3) Schedule of phase or PMI inspection planning meetings.

(4) Dates of scheduled receipts or transfers of aircraft and Unmanned Aircraft Systems (as applicable), and required maintenance actions.

(5) TMDE calibration requirements include lists of TMDE due for calibration and TMDE not yet returned from calibration. MEASURE format 800, if verified as accurate, may be used to determine these requirements, but publication of both TMDE lists shall be included in the MMP.

(6) Schedule of technical training. (A separate Monthly Maintenance Training Plan may be prepared and distributed with the MMP as an alternative ([paragraph 10.1](#))).

(7) Forced removal items, such as, high time components.

(8) TD compliance requirements.

(9) Current list of QA personnel; QARs, CDQARs, and CDIs.

(10) List of QA audited programs as well as program managers and monitors.

(11) Schedule of personnel due Egress/Explosive Systems Checkout. The schedule shall include all personnel assigned TAD to duties outside the command and the date TAD commenced.

(12) SE scheduled inspection due dates.

(13) Scheduled NDI requirements.

(14) Current designated plane captains.

(15) A narrative or visual assessment metric from service unique maintenance personnel, which demonstrates the organization's ability to perform expected maintenance with the current level of qualified personnel.

(16) Current designated Ground Maintenance Vehicle Operators (GMVOs) and UAS squadrons only.

(17) A listing of all JDRS DR Submitters (Approve and Submit Web site DRs Message Release Authority) and JDRS DR Drafters (draft only).

**NOTE: These minimum information requirements may be enclosures produced by current information technology reports. Current information technology databases are also optional. In such a case, the database locator sheet shall be included in the MMP. If this option is used, strict security safeguards shall be enforced for appropriate administrator and read-only access levels.**

b. The I-level MMP shall contain the following minimum information:

(1) Projected schedule of items to be inducted for check and test from supported squadrons, weapons departments, air departments, and supply activities (as applicable).

(2) Projected NDI requirements.

(3) Anticipated changes in the workload due to operational commitments of supported activities.

(4) Schedule of technical training. (A separate Monthly Maintenance Training Plan may be prepared and distributed with the MMP as an alternative ([paragraph 10.1](#))).

(5) Schedule of maintenance requirements for shop installed SE, for example, NF 27T-10, tire breakdown equipment, and engine test cells, whether requirements are by COMNAVAIRSYSCOM or local MRCs.

(6) TD compliance requirements.

(7) Current list of QA personnel; QARs, CDQARs, and CDIs.

(8) Forced removal items, for example, high time.

(9) Listing of QA audited programs and program managers/monitors.

(10) Other known or anticipated factors affecting the production effort.

(11) A listing of all JDRS DR Submitters (Approve and Submit Web site DRs Message Release Authority) and JDRS DR Drafters (draft only).

**NOTE: These minimum information requirements may be enclosures produced by current information technology reports. Current information technology databases are also optional. In such a case, the database locator sheet shall be included in the MMP. If this option is used, strict security safeguards shall be enforced for appropriate administrator and read-only access levels.**

c. MMP shall be distributed to key maintenance personnel within the activity.

(1) The O-level MMP shall be distributed by the 25th of the month prior to the month to which it applies, for example, the MMP for April would be published by the 25th of March. The supporting I-level shall be in the distribution.

(2) The I-level/MALS MMP shall be distributed by the last day of the month prior to the month to which it applies.

**NOTE: Distribution may be accomplished by current information technologies. For example, e-mail attachment, server-based, and web-based. If this option is used, strict security safeguards shall be enforced for appropriate administrator and read-only access levels.**

### **3.3.4.2 Monthly Planning Meeting**

A monthly maintenance planning meeting will be convened by the I-level MO to coordinate and improve the overall maintenance program. Maintenance and Supply Representatives from all supported activities on board including weapons departments shall attend.

### **3.3.4.3 Work Center Workload Report**

The Work Center Workload Report provides a listing of all outstanding MAFs/WOs. The work center supervisor shall maintain the most current workload report in the work center. The notes and job status codes shall be kept updated to keep track of the work center maintenance/production workload.

### **3.3.5 Organization, Responsibilities, and Functions of Navy and Marine Corps Air Reserve Activities**

3.3.5.1 Organizational activities, such as Navy and Marine Corps air reserve squadrons, are considered covered by the standard organizations and procedures.

3.3.5.2 Reserve air stations are responsible for providing combined I-level and O-level maintenance support for aircraft assigned to the air station and for providing I-level support to naval air reserve force squadrons and tenant activities when assigned.

## **3.4 Aviation Officers Responsibilities**

### **3.4.1 Commanding Officer (CO)**

3.4.1.1 The CO has the overall responsibility for the accomplishment of the command's mission and is responsible for the inspection, quality, and readiness of aircraft, equipment, and material under their cognizance.

3.4.1.2 COs are responsible for training their personnel. Final responsibility for personnel readiness and safety is vested in the CO. Command attention to and supervision of training can substantially improve the quality of maintenance and reduce the risk of personnel injury and equipment damage. Under the COs direction, unit training will include appropriate training in NAVOSH requirements contained in OPNAVINST 5100.19 and OPNAVINST 5100.23, as applicable to command operations.

3.4.1.3 COs must review all active NAMP deviations upon assuming command.

3.4.1.4 Consistent with HMC&M directives, COs will coordinate and cooperate with federal, state, interstate, and local pollution control agencies and adhere to applicable standards for the control and abatement of environmental pollution. Commanders at all levels of maintenance should consult with counsel on environmental issues. Refer to, [paragraph 10.19](#), OPNAVINST 5090.1, OPNAVINST 5100.19, OPNAVINST 5100.23, and the Judge Advocate General Manual for further information on HMC&M.

3.4.1.5 Specific requirements for CO signature/designation are specified throughout the NAMP and include:

- a. Prescribe controls for custody and issue of flight packets.
- b. Sign aircraft taxi licenses and engine or APU turn-up licenses.
- c. Designate personnel authorized to certify aircraft Safe for Flight.

- d. Designate QARs, CDQARs, and CDIs per [Chapter 7](#).
- e. Designate the HMC&M Officer per [paragraph 10.19](#).
- f. Designate the W&B Officer.
- g. Designate ordnance certification board members.
- h. Designate Aviation Confined Space Entry Authorities (EAs) and technicians.
- i. Designate Plane Captains.

**NOTES: 1. For those squadron Maintenance Departments that employ contractors, the Contractor Site Manager, when assigned, will perform the duties listed above for contractor personnel. The Contractor Site Manager will not delegate the authority to perform these duties.**

**2. OINCs of permanently established units are authorized to sign all maintenance qualifications, designations, and correspondence required per this instruction.**

3.4.1.6 COs will assign officers to billets based on their experience in consideration of the billet workload, span of control, and specific needs of the activity. All maintenance management and division billets specified in the NAMP will be filled before assigning assistants or branch heads. An aviation ground officer must be assigned as MO, AMO, or MMCO for O-level activities. If the MO is an aviation ground officer, then the AMO, if assigned, MMCO, or QA Officer must be a pilot or NFO assigned to duty in a flying status. Officers assigned to the MO and the MMCO billets will remain in these billets for a minimum of 1 year. For deploying squadrons, period of MO and MMCO assignment will include the full work up and deployment cycle.

**Note: The above assignment policy does not apply to OMDs or detachments with four or less aircraft where manning documents or tables of organization do not authorize ground officer billets.**

3.4.1.7 For Marine Corps, the IMA officer is referred to as the MALS MO whose responsibilities are contained in [Chapter 4](#).

3.4.1.8 Supply Corps Officers assigned to duty in deployable squadrons will be assigned as Material Control Officers. Additional related duties may be assigned as determined by the CO.

3.4.1.9 COs of CVN and L-Class ships, I-level FRCs, and MALS serve as the primary enabler for AIRSpeed CPI. These COs will:

- a. Oversee the development of an AIRSpeed CPI strategic plan to identify, align, prioritize, and implement CPI projects that support organizational goals.
- b. Develop and sustain personnel with the skills to apply AIRSpeed CPI methods.
- c. Chair semi-annual Executive Planning Sessions to:
  - (1) Review the command's AIRSpeed CPI Strategic Plan.
  - (2) Assess progress in achieving goals.
  - (3) Review the status of current CPI projects.
  - (4) Assist in the removal of barriers to achieving improvement.

- (5) Prioritize proposed CPI projects.

### 3.4.2 Qualifications for Aviation Maintenance Officer Duties

3.4.2.1 The depth of knowledge, skills, and experience an officer must have to effectively manage aviation maintenance varies based on the billet assigned and the scope and scale of work performed by the activity. Expertise in any functional area can only be gained through training and experience. Basic knowledge and skill is acquired through formal and informal training. Aviation Maintenance Officer School is viewed as the basic qualifications course for officers with a career specialty of aviation maintenance. In addition, formal courses cover areas such as aviation supply fundamentals, management principles and techniques, MIS and principles of MIS design, NTCSS Optimized NALCOMIS, mid-tier data replication, Aviation Data Warehouse (ADW) data management, and fundamentals of industrial management.

3.4.2.2 Core knowledge, skills, and abilities to effectively manage aviation maintenance at all levels are:

- a. A general familiarity with the principles of management and motivation theory, which encompass a basic understanding of the principles of management (planning, organizing, staffing, directing, and controlling).

- b. A familiarity with the concepts relating to the planning for and management of change; knowledge of the concepts relating to responsibility, effective two-way communication, and the delegation of authority.

- c. A knowledge of the NAMP in sufficient depth to ensure understanding of the Navy Department organization and the relationships relating thereto; the determination and assignment of maintenance responsibility, and the organizational functions of a typical fleet aviation maintenance organization.

- d. A basic understanding of MIS and MIS design with emphasis on the Aviation 3M System, NTCSS Optimized NALCOMIS, and the BMT that encompasses the following:

- (1) Knowledge of aviation 3M and NTCSS Optimized OMA NALCOMIS documentation procedures and controls including of the foundation tier, mid-tier, and top tier information technology applications.

- (2) An understanding of the basic principles of management system design, to include methods of determining management requirements, system flow charting, and input and output analysis techniques as related to cost trade off considerations.

- (3) An understanding of Aviation 3M Reports pertinent to O-level/I-level maintenance operations and ad hoc capabilities pertinent to NTCSS Optimized OMA NALCOMIS.

- (4) An understanding of BMT functionality and reports pertinent to maintenance and supply operations when assigned to an I-level Maintenance Department.

- e. A basic working knowledge of manpower administration policies and procedures. Familiarity with the following is considered essential:

- (1) NEC or MOS assignment policy and procedures.

- (2) Enlisted evaluation and advancement in rate/rank (Marine Corps) requirements.

- (3) AMD and Manpower Authorization Request (OPNAV 1000/4A). (Not applicable to Marine Corps.)



- (4) Naval Officer Billet Coding and P codes. (Not applicable to Marine Corps.)
  - (5) Officer fitness reports, preference cards, officer assignment policy, and career rotation patterns.
  - (6) Education and training documents setting forth requirements for, and availability of, various courses of instruction.
- f. A working knowledge of aviation maintenance administration policies and procedures. General areas are:
- (1) Navy directive system.
  - (2) Naval correspondence format and procedures as related to aviation maintenance.
  - (3) Handling of classified material including correspondence and equipment systems.
  - (4) Various types of reports, format, and frequency of submission.
  - (5) Aviation maintenance publications and directives, aircraft and equipment manuals, related material publications and various other documents, instructions, and notices.
  - (6) Naval Aviation Safety Program with specific emphasis on command responsibilities and relationships, procedures for handling mishap claims, submission of mishap reports, and composition and function of aircraft mishap boards.
  - (7) Knowledge of aircraft logbooks, AESR, MSRs, ASRs, EHRs, SRCs, CM ALS, W&B logbooks, and AIRs necessary for the transfer and receipt of aircraft.
- g. An understanding of aircraft and equipment servicing, maintenance, safety, and operating procedures, ashore and afloat. Included, in general terms are:
- (1) Safe, efficient servicing and maintenance of aircraft and equipment.
  - (2) Proper positioning, security, and operation of SE.
  - (3) Hangar deck utilization and safety precautions.
  - (4) Ordnance handling and safety precautions.
  - (5) Aircraft and equipment tie-down requirements for all weather conditions.
  - (6) Aircraft high-power turn-up requirements and procedures.
  - (7) HMC&M procedures including the application and requirements of local policies and procedures as they pertain to maintenance.
- h. A general understanding of aircraft systems and equipment in sufficient depth to provide the basis for more specialized concentration in avionics, armament, airframes, ALSS, power plants, and SE as related to type of aircraft.
- i. A general understanding of the types of aircraft and equipment corrosion identification and inspection procedures, corrosion prevention measures, and corrective actions when required.

j. A working knowledge of Maintenance/Production Control and Material Control policies and procedures including:

- (1) Supply and maintenance relationships and coordination requirements.
- (2) Material requirement and reporting procedures.
- (3) Classification and identification of aeronautical material.
- (4) Financial management and flying hour cost reporting.
- (5) Custody and control of material.
- (6) SE management.

k. An in-depth knowledge of aviation supply as related to the aviation maintenance function. An understanding of the following is considered essential:

(1) Navy supply system fundamentals, including terms in use, basic supply instructions and documents, function of ICPs, NSNs, PN assignment policy and procedures, requisition document flow, open purchase process, surveys, custody and subcustody procedures, and other related requirements.

(2) Aviation supply system fundamentals, which include a basic understanding of weapon systems acquisition, fleet introduction process, supply distribution system, repairables pipeline, allowance lists, logistic management codes, cross-reference lists, weapon equipment lists, IPBs for aircraft, engines, and various other publications.

(3) Aviation funding and financial management with emphasis on use and control of flight operational funds, Aviation Fleet Maintenance (AFM) funds, Aviation Consolidated Allowance List (AVCAL) funds, the resources management system, and aviation DLRs.

(4) Method of compiling the AVCAL and procedures for adjustment and replenishment, material receipt, control, and inventory, and procedures under the Shipboard Uniform Automated Data Processing System (SUADPS).

(5) Local aviation supply support policies including fleet level support procedures and departmental relationships, NMCS, PMCS expediting, material management policies relating to the Local Repair Cycle Asset (LRCA), Pre-expanded bins (PEB), IMRL review and revision, and methods of measuring performance.

l. An understanding of HAZMAT and HAZWASTE procedures including the application and requirements of local policies and procedures as they pertain to aviation supply.

m. An understanding of AIRSpeed CPI methods, concepts, and analysis tools gained through the completion of the Logistics Chain Management Initial Training Course (NAVAIR-LCM-0001.3) (<https://wwwa.nko.navy.mil>) and Champion/Project Sponsor training.

### **3.4.3 Maintenance Officer (MO)**

3.4.3.1 The MO manages the maintenance department and is responsible to the CO for the accomplishment of the maintenance department's mission.

- a. Administers the operation of the Maintenance Department per the NAMP.

- b. Ensures redundancy of component repair capabilities within an IMA is avoided wherever possible by employing sound management practices in the handling of personnel, facilities, material, and in work flow methods. To prevent redundancy of repair capabilities, consideration should be given to established IMA repair capabilities when establishing an ICRL for SE components.
- c. Define and assign responsibilities, functions, and operations per existing directives.
- d. Designate in writing via the MMP, the MMCO as the Maintenance/Production Control Program Manager and the MMCPO (Aircraft Maintenance Chief for Marine Corps) as the Maintenance/Production Control Program Coordinator.
- e. Organize the department and initiate requests for, and make recommendations relative to, changes concerning personnel, facilities, and equipment required to accomplish assigned tasks.
- f. Ensure the accomplishment of training for permanently and temporarily assigned personnel. Monitor completion of type wing developed PQS or JQR for the training certification of maintenance control and Safe for Flight personnel.
- g. Analyze the mission accomplishment and capabilities of the department and ensure timely planning is conducted and a statement of requirements to meet future needs is initiated, using reports provided by the MDS or NTCSS Optimized NALCOMIS on a continuous and progressive basis.
- h. Ensure full and effective employment of assigned personnel.
- i. Ensure the production output of the department is of proper quantity and quality per applicable specifications and directives.
- j. Maintain liaison with other department heads, representatives of higher authority, and other maintenance organizations. Liaison will include attendance at monthly IMA and Supply Department interface meetings.
- k. Publish and ensure internal compliance with maintenance, safety, and security procedures to ensure optimum performance is achieved.
- l. Schedule and hold periodic planning and informational meetings.
- m. Ensure the auditing of all maintenance programs and processes per [Chapter 10](#).
- n. Provide aviation 3M Summaries to show use of manpower, equipment, and facilities to the CO and other superiors in the chain of command, when requested.
- o. Ensure the IMRL is frequently reviewed and necessary changes submitted, accurate equipage records are maintained and required reports are submitted.
- p. Ensure the NMCS/PMCS status listing is validated, certified, and returned to supply on a daily basis. Each validated NMCS/PMCS requirement shall positively reflect an item or component, which is absent, defective, or nonfunctional in the aircraft.
- q. Ensure the efficient operation of the MDS or NTCSS Optimized NALCOMIS and BMT (I-level).
- r. Ensure applicable publications and directives are disseminated throughout the Maintenance Department.
- s. Recommend qualified candidates for Engine/APU turn-up authorization licenses.

- t. Chair the Plane Captain Selection and Examining Board.
- u. Ensure local instructions and procedures are compatible with the MDS or NTCSS Optimized NALCOMIS.
- v. (O-Level) Conduct a monthly review of the Aircraft/Equipment Workload Report (Figure 15-9) to verify the Equipment Operational Capability (EOC) and up, down or partial aircraft status are correctly coded. Conduct a monthly review of the Aircraft Inventory and Readiness Reporting System (AIRRS) to ensure the In Reporting and Out of Reporting status listed in the "Latest Aircraft Daily Info" database for all BUNOs assigned are accurate. The MO shall sign a hardcopy of these reports and annotate them with any direction they have for corrective action.

**NOTE: The MMCO and SA/A will assist the MO in the monthly Aircraft or Equipment Workload Report and AIRRS reviews by providing trend charts covering at least 12-months of data, root cause analysis of errors, and recommendations for improvement, such as additional training. The MMCO shall retain a minimum of 12 consecutive months of the signed hardcopy reports.**

- w. Ensure supervisory and QA personnel are thoroughly familiar with compass calibration requirements per MIL-STD-765A.
- x. Use maintenance management teams, as required, in support of efficient maintenance material practices by the Maintenance Department.
- y. Use the on-site COMNAVAIRSYSCOM or NATEC field service representatives (as required) to effect liaison and support for the NAMP.
- z. Schedule and conduct a monthly maintenance and material planning meeting (I-level officer only).
- aa. Ensure qualification and recertification is accomplished for personnel performing special processes, for example, welding and NDI.
- ab. Ensure establishment and implementation of an effective program for NDI of critical aircraft components and structures.
- ac. Be responsible for the overall management of NALCOMIS.
- ad. Coordinate with Selective Reserve Program Manager for drilling reservists to augment the O-level or I-level activity's manning when in an active status with valid NECs.
- ae. Develop an AIRSpeed CPI strategic plan aligned with CNO, NAE, and organizational priorities and goals (I-level).
- af. (I-level only) Designate an AIRSpeed Officer, a BMT Administrator, and a CPIMS Administrator. These designations may be combined as deemed most efficient to accomplish the activity's AIRSpeed responsibilities.

**NOTE: BMT and CPIMS Administrator training are provided by the AIRSpeed CPI Office.**

- ag. (I-level only) Establish an AIRSpeed CPI Work Center with four full time personnel to include an AIRSpeed Officer and a Supply Representative. AIRSpeed CPI Work Center personnel shall be Green Belt/LCIP certified within 12 months of assignment. Personnel assigned to the AIRSpeed CPI Work Center should be assigned for a minimum of 18 months.

ah. (I-level only) Maintain a core competency of two Green Belt or LCIP trained personnel in addition to the AIRSpeed CPI team that shall be composed of two personnel from each Maintenance Division. Training shall be completed within 6 months of assignment to the core competency.

**NOTE: IMAs with less than 80 personnel shall maintain a minimum of one Green Belt or LCIP certified person assigned to the AIRSpeed CPI Work Center.**

ai. (I-level only) Implement AIRSpeed CPI initiatives and report progress at semi-annual Executive Planning Sessions.

aj. Facilitate the removal of intra-departmental barriers that prevent successful completion of AIRSpeed CPI projects and events (I-level).

ak. Attend all tollgate reviews for CPI projects conducted within the Maintenance Department (I-level).

al. Execute the FED Program in conjunction with applicable ISSC (I-level).

3.4.3.2 CVN IMA MOs shall also coordinate the Air Wing Training Plan to ensure billet requirements, personnel identification, and assignments are satisfied. The MO will manage ASM per ACC or TYCOM directives.

3.4.3.3 The MO provided with portable x ray equipment is responsible to the CO to ensure all X-ray radiation and radiographic operations and safety precautions are performed by qualified NDI technicians. The MO shall further ensure such personnel comply with all operational x ray safety regulations in NAVSEA S0420-AA-RAD-010.

**NOTE: NAVSEA S0420-AA-RAD-010 takes precedence over radiation safety procedures contained in NAVAIR 01-1A-16.**

3.4.3.4 The MO, in addition to the above functions, shall:

a. Review completed work center audits.

b. Sign SE and jet engine test cell operator licenses.

c. Designate, in writing via the MMP, all persons authorized to sign logbook/record entries.

d. Designate where all aircrew personal equipment records, VFS CADPAD TRACE LIFE SUPPORT MODULE, and files shall be maintained.

e. Establish delivery and pickup points for material as mutually agreed upon by Supply.

f. Revoke SE licenses for reasons outlined in [paragraph 10.16](#).

g. Ensure VFS CADPAD, TRACE CADPAD and TRACE LIFE SUPPORT Modules are used to effectively manage ALSS, and accurately track and report all installed explosive devices (aircraft and egress system).

h. Review and approve in writing the MMP prepared by the MMCO.

**NOTE: The original signed paper document shall be maintained in Maintenance Control/Production Control and shall be updated with pen and ink changes to effectively communicate and monitor changes as they occur.**

i. Additional MO responsibilities are in each of the NAMPSOP maintenance programs ([Chapter 10](#)).

3.4.3.5 A monthly maintenance planning meeting will be convened by the I-level MO to coordinate and improve the overall maintenance program. Maintenance and Supply Representatives from all supported activities on board including weapons departments shall attend.

a. O-level Maintenance Representatives will be prepared to discuss the quantity and types of support required, including the schedule of components due for check and test. All factors affecting the anticipated I-level workload should be presented by the squadron representatives, for example, operational commitments, deployments, TD compliance, and high time component removals that may affect flying hour program funds.

b. Weapons Department representatives will be prepared to provide:

(1) A projected schedule of AWSE inspections, items requiring test and check, and anticipated receipts and transfers.

(2) All known WSE TD incorporation requirements.

(3) Identification of known or anticipated AWSE end items or components to be returned to the I-level for maintenance beyond the capability of the Weapons Department.

### **3.4.4 Assistant Maintenance Officer (AMO) Duties and Responsibilities**

3.4.4.1 The AMO is assigned, receives the same training, and is qualified under the guidelines listed in the preceding paragraphs.

3.4.4.2 As assistant head of the Maintenance Department, the AMO shall:

a. Assist the MO in the performance of duties and keep the MO fully informed of matters concerning the department.

b. Make recommendations to the MO for improved departmental policies and ensure efficient and full use is made of the capabilities and facilities of the department.

c. Ensure staff divisions conform to established policies.

d. Initiate and review correspondence.

e. Supervise and coordinate department administrative responsibilities with other departments or divisions as required.

f. Conduct liaison of personnel matters in the department with the Administration Department.

g. Determine the apportionment of maintenance personnel assigned to the department and monitor or coordinate the assignment of TAD personnel to other activities. Personnel assigned TAD to IMAs will be used only in support of the I-level maintenance effort and within the normal spectrum of their technical specialties.

h. Control classified material, excluding technical manuals and letter-type directives, required by the department.

- i. Determine requirements for, and ensure establishment of, transportation and communication systems to provide complete support of the workload.
- j. Assign spaces to the various divisions and establish the responsibility for security and cleanliness of such spaces (O-level only).
- k. Conduct inspections of assigned spaces.
- l. Perform the functions of the Administrative Officer in the absence of one.
- m. Manage the SE Training and Licensing Program (O-level only).
- n. If operating Legacy or NTCSS Optimized NALCOMIS, ensure the SA/A has an NEC 6315/MOS 6049.
- o. If operating Legacy or NTCSS Optimized NALCOMIS, establish and ensure formal in-service and informal training is conducted on Legacy or NTCSS Optimized NALCOMIS operation.
- p. Act as liaison with the Operations Department in the reporting of Mission Area Specific Resource Rating for personnel.
- q. When reliable internet access is available, maintain and employ an NTMPS/FLTMPS account for maintenance manpower management purposes.

3.4.4.3 Additional AMO responsibilities are identified in the following NAMPSOP Maintenance Programs in [Chapter 10](#).

- Maintenance In-Service Training Program ([paragraph 10.1](#))
- Technical Directive Compliance Program ([paragraph 10.10](#))
- Tool Control Program ([paragraph 10.12](#))
- Plane Captain Qualification Program ([paragraph 10.14](#))
- Support Equipment Operator Training and Licensing Program ([paragraph 10.16](#))

3.4.4.4 The Maintenance Administration Division is assigned under direction of the AMO and shall provide administrative services for the Maintenance Department.

3.4.4.5 Responsibilities. Both O-level and I-level administration divisions shall:

- a. Prepare maintenance related correspondence.
- b. Maintain correspondence per SECNAV M-5210.2.
- c. Establish and control a central maintenance reporting and record keeping system for all administrative reports and correspondence, if not already centrally located in the command's Administration Department, including a tickler file to assure timely submission of recurring reports.
- d. Implement all directives concerning distribution, retention, and disposition of administrative records and reports.
- e. Provide clerical and administrative services for the department.
- f. Maintain a master maintenance message board of current messages, annotated with appropriate action taken.
- g. Keep a message history file by date time group (DTG) for a minimum of 6 months.

- h. Reproduce, as necessary, and distribute incoming messages and other data.
- i. Coordinate department administrative and security responsibilities with other departments and divisions (as required).
- j. Distribute nontechnical information and publications.
- k. Maintain a master file of nontechnical instructions. (Internal control and distribution of the NAMP is the responsibility of the QA Division Central Technical Publications Librarian.)
- l. Maintain a current organizational roster board, automated or manual, which will include, as a minimum, name, rate, and billet assignment in conjunction with the AMD. Optionally, this function may be performed by the Manpower, Personnel and Training (MP&T) Coordinator (where assigned).

3.4.4.6 In addition, I-level administration divisions shall:

- a. Conduct liaison with the Administrative Department regarding personnel.
- b. Safeguard and distribute personal mail to department personnel, when appropriate.
- c. Distribute approved locally issued reports and studies.
- d. Control department classified material.
- e. Establish and coordinate department training requirements and obtain school quotas to support department training requirements for activities without an MP&T Coordinator.
- f. Coordinate transportation and communication requirements for the department.
- g. Assign spaces to the various divisions and establish the responsibility for security and cleanliness of such spaces.
- h. Assume responsibility for the cleanliness and security of vacant or unassigned maintenance spaces.
- i. Arrange department participation in joint inspections of facilities assigned to tenant activities, especially incident to the arrival or departure of a tenant activity.

3.4.4.7 The MP&T Coordinator, normally a Master Chief Petty Officer, performs staff functions under the MO or AMO of CVN AIMDs and the larger (500 or above manning, including TAD personnel) Navy shore Intermediate Maintenance Activities (IMA). The MP&T Coordinator shall:

- a. Assist and advise the MO or AMO in the areas of enlisted performance, billet requirements, training, and manning within the department.
- b. Make recommendations for improvements to processes affecting manpower performance and productivity, manpower requirements and utilization, and human resources policies.
- c. Coordinate technical training to improve the quality and efficiency of production and professional training that enhances the career progression of department personnel.
- d. Make recommendation to the AMO on the assignment of enlisted personnel.
- e. Act as liaison between other activities or departments for personnel, TAD, and training matters.



### 3.4.5 Maintenance Material Control Officer (MMCO)

**NOTE:** For the Marine Corps, Maintenance Material Control is called Production Control.

3.4.5.1 The MMCO is responsible to the MO for the overall productive effort and material support of the department. Basic duties:

**NOTE:** In the Weapons Department, the functions and responsibilities of this position may not be handled by an officer due to the limited number of officers assigned to that department. However, the importance of the functions and responsibilities is not diminished by the assignment of a highly responsible and qualified petty officer or chief petty officer. The weapons officer may also choose to combine this position with another, such as Work Center Supervisor. The person filling the position need not attend the Aviation Maintenance Officer School.

- a. Coordinate and monitor the department workload.
- b. Be designated in writing by the MO via the MMP, as the Maintenance/Production Control Program Manager.
- c. Maintain liaison with supporting activities and the Supply Department, for example, the Supply Department of the MALS, to ensure requirements and workload are known and satisfied.
- d. Review Planned Maintenance System (PMS) publications and local MRCs and ensure compliance.
- e. Ensure the full capability of the department is used in supporting the department workload.
- f. Review monthly summaries, MDS and NTCSS Optimized NALCOMIS Reports to ensure effective use of personnel, equipment, and facilities.
- g. Maintain aircraft logs, associated equipment CM ALS and SE records, including W&B data (in conjunction with the Operations Department), and inventory logs.
- h. Furnish technical advice and information to the supporting Supply Department concerning the identity and quantities of supplies, spare parts, LRCA components, engines, and propellers to accomplish the assigned workload.
- i. Plan material requirements to support the department workload.
- j. Establish and operate tool rooms in support of the tool control program (TCP).
- k. Review the allowance lists and the IMRL for adequacy, and initiate action for revision as required.
- l. Keep the MO and AMO advised of the overall workload and material situation as it affects the department.
- m. Establish procedures to ensure limits of life-limited components are not exceeded.
- n. Monitor, evaluate, and ensure documentation of cumulative ABDR actions to identify flight or system operational restrictions or limitations to ensure continued Safe for Flight status of the aircraft.
- o. Ensure divisions assign qualified personnel for the completion of scheduled maintenance and inspections.

p. Establish maintenance procedures to ensure SE that the activity has IMRL reporting responsibility for is properly maintained and actively pursue repair/rework to restore NRFI or NRFU SE to RFI/RFU condition. Prior to placing SE in long term preservation, ensure SE is RFI or RFU and calibration requirements are placed in inactive status. NDI and load test requirements are suspended while SE is in preservation. Refer to [paragraphs 10.17](#) and [10.18](#), for additional guidelines.

q. Conduct a monthly meeting within the Maintenance Department to finalize the MMP and ensure supervisory personnel are aware of upcoming requirements. The meeting will be used to present the proposed plan and discuss problems, requirements, support, and other factors involved in the overall maintenance effort.

r. Prepare the MMP for the MOs review and approval in writing.

**NOTE: The format and detailed arrangement of the MMP is the prerogative of the MO.**

3.4.5.2 In addition to the basic responsibilities outlined in [paragraph 3.4.5.1](#), O-level MMCOs will:

a. Submit work request WOs to the supporting I-level activity for functions beyond the repair capability, authorization, or responsibility of the activity.

b. Conduct a planning meeting in advance of each phase or PMI inspection.

c. Attend the monthly maintenance meeting held by the supporting I-level.

d. Establish procedures for controlling cannibalization.

e. Ensure FCFs are conducted (as required).

f. Conduct a weekly review of the Aircraft/Equipment Workload Report ([Figure 15-9](#)) to verify the accuracy of EOC coding and U/P/D status on all outstanding WOs.

g. Conduct a monthly review of SCIR data for trends in aircraft system/subsystem readiness. Trending shall cover at least 12 consecutive months.

h. Review and certify the accuracy of the In Reporting/Out of Reporting status on Aircraft Inventory XRAY Reports, prior to authorizing their release to AIRRS. Review the AIRRS “Latest Aircraft Daily Info” database to verify XRAY Reports have processed.

**NOTE: OOMA XRAY submissions can take up to 7 days to be reflected upline into the AIRRS System.**

i. Provide pilots and aircrews with a record of aircraft discrepancies and corrective actions for the preceding 10 flights of the aircraft.

j. Validate the NMCS/PMCS status listings on a daily basis.

k. OOMA responsibilities:

(1) Coordinate and monitor NALCOMIS in relation to the O-level maintenance evolution.

(2) Establish liaison between the supply activity and the O-level to ensure all automated NALCOMIS supply processes are used and streamlined.

(3) Ensure ADBs are validated daily against the database reports.

(4) Ensure MRCs are entered into the Legacy NALCOMIS OMA database as changes occur to the MRC decks.

(5) Verify CM ALS is kept updated per [paragraph 5.2.3](#).

3.4.5.3 In addition to the basic responsibilities outlined in [paragraph 3.4.5.1](#), I level MMCOs will:

a. Establish procedures for reviewing and approving work requests from supported activities and assigning work priorities for them.

b. Establish procedures for monitoring component repair capability to include conducting Component Repair Reviews per [paragraph 10.20](#).

c. Establish and operate the aeronautical material screening unit.

d. Establish procedures for ensuring proper material usage reporting.

e. Ensure MRCs are entered into the SESS or Asset Management for Legacy NALCOMIS databases as changes occur to the MRC decks.

f. Coordinate and monitor department workload using AIRSpeed CPI methods, concepts, and analysis tools.

g. Evaluate best practices and benefits resulting from CPI projects and events for potential replication opportunities.

h. Use BMT reports to monitor daily workload and assigned priorities to ensure efficient movement of components through the department.

i. Coordinate the comparison of TRR, ICRL, and repair capability success rates between commands to promote cycle time reduction and collaboration on best practices.

j. Attend all tollgate reviews for CPI projects affecting the Maintenance Department.

k. Verify the I-Level MDBA reviews the OIMA CM BCM folder monthly and removes CM ALS no longer in the activity's custody.

l. Additional MMCO responsibilities are identified in the following NAMPSOPs in [Chapter 10](#).

Navy Oil Analysis Program ([paragraph 10.3](#))

Technical Directive Compliance Program ([paragraph 10.10](#))

Tool Control Program ([paragraph 10.12](#))

Corrosion Prevention and Control Program ([paragraph 10.13](#))

Support Equipment Planned Maintenance System Program ([paragraph 10.17](#))

IMA Component Repair Review and Individual Component Repair List Program ([paragraph 10.20](#))

### 3.4.6 Material Control Officer Duties and Responsibilities

#### 3.4.6.1 Supply Corps Officers:

Supply Corps Officers assigned to a deployable squadron will be assigned as the Material Control Officer. If assigned to a carrier deploying squadron, the Material Control Officer shall be TAD to the carrier Supply Department during work-ups and deployment while the assigned squadron is onboard.

**NOTES: 1. The TAD requirement only applies to Supply Corps Officers (if any) assigned to an aircraft carrier deploying squadron. It does not apply to non-Supply Corps Officers assigned as O-level Material Control Officer.**

**2. If Marine squadrons (F/A-18) are attached to a CVW and the assigned Material Control Officer has Aviation Supply Occupational Specialty/Field (or MOS), then the TAD requirement will be applicable when onboard the CVN.**

**3. For L- Class ships, the TAD requirement only applies to Marine Units with limitation as to the number of TAD. It is not applicable to Helo AVDETS deploying with the L- Class ships.**

#### 3.4.6.2 Material Control Officer:

The Material Control Officer is responsible to the MMCO for the operation of the Material Control Division, which serves as the point of contact within the maintenance organization that provides support for the material requirements of that organization. The Material Control Officer shall have:

a. Familiarity with the aviation 3M and NTCSS NALCOMIS Optimized OMA/IMA documentation procedures and reports as they relate to supply application.

b. A working knowledge of Maintenance/Production Control, Material Control, local supporting supply activity, supply system policies and procedures relating to:

- (1) Supply and maintenance relationship and coordination requirements.
- (2) Material requirements and reporting procedures.
- (3) Classification and identification of aeronautical material.
- (4) Custody and control of material.
- (5) SE management.

c. An in-depth knowledge of aviation supply as related to the aviation maintenance function and understanding of the following:

(1) Navy supply fundamentals, including terms in use, basic supply instructions and documents, functions and responsibilities of NAVSUP WSSs and other related supply system agencies. Navy Supply System's policy and procedures to include MILSTRIP requisition format and document flow, open purchase process surveys, custody and subcustody procedures, and other related requirements.

(2) Aviation supply fundamentals, including a basic understanding of weapon systems, fleet introduction process, supply distribution system, repairables pipeline, allowance lists, logistic management codes, cross-reference lists, weapon equipment lists, IPBs for aircraft engines, and various publications.

(3) Aviation funding and financial management with emphasis on use and control of flight operational funds, AFM funds, AVCAL and Shore Consolidated Allowance List (SHORCAL) funds, the resource management system, and aviation DLRs.

(4) Methods used in developing AVCAL and shore consolidated allowance list (SHORCAL), procedures for allowance adjustment and stock replenishment, material receipt and issue, control and inventory, and procedures under the NTCSS RSUPPLY.

(5) Local aviation supply support policies including fleet level support procedures and departmental relationships, NMCS/PMCS requisitions expediting, material management policies relating to the LRCA, PEBs, IMRL review and revision, and methods of measuring internal and external supply support performance.

(6) An understanding of HAZMAT/HAZWASTE procedures including the application and requirements of local policies and procedures as they pertain to aviation supply support.

d. Ensure squadron requirements for parts and material are forwarded to the supporting ASD in a timely and consistent manner.

e. Ensure parts and material received are expeditiously routed to the applicable work center and not allowed to accumulate at the designated delivery or pick up point.

f. Ensure tracked repairable components are accompanied with the applicable AESR, ASR, EHR, or SRC card upon receipt from, or turn in to, the supporting ASD.

g. Establish secure material and equipment delivery and pick up point.

h. Establish and maintain liaison with the supporting ASD on material requirement matters to ensure that material needs of the organization are always met in a timely manner. In addition, the Material Control Officer shall serve as the primary POC between the organization and the supporting ASD on all matters relating to aviation supply support.

i. Prepare documents for material required for operational support, such as aviation fuels and lubricants, flight clothing, and related personal equipment to include other material carried in service outlets (SERVMART, etc.).

j. Establish procedures and ensure the proper operation of tool rooms to include the conduction of required tool inventories.

k. Ensure survey documents for lost, missing, or damaged applicable material and equipment are initiated in a timely manner and prepared per directives.

l. Ensure proper OPTAR accounting and budgeting is accomplished and a separate material control register is maintained for each OPTAR held.

m. Ensure the appropriate funding is being charged when submitting organization material requirements, such as Operational Functional Category (OFC) 01 for aircraft flight operations and administrative supplies and OFC 50 for aircraft maintenance.

**NOTE: Chapter 5 contains more detailed information regarding appropriate AFM charges.**

n. Be responsible for the management of the TCP.

- o. Ensure the proper management and inventory control of IMRL and other authorized material and equipment at all times.
- p. Ensure the NMCS/PMCS requisition validations are accomplished per the current established procedures provided by higher authority.
- q. Ensure accurate and timely response is provided to the supporting ASD during the internal and external material obligation validations (MOV).
- r. Ensure proper and complete inventories are conducted, inventory log entries are made, and inventory shortages listings are prepared for inclusion in the AIR during aircraft receipt and transfer.
- s. Assist the local supporting ASD in enforcing the one-for-one exchange rule when an aircraft repairable component is ordered by the supported work center. In addition, ensure the proper documentation is attached to the turn-in component prior to pick up by the representative of the supporting supply activity.
- t. Develop and ensure procedures are in place in support of the Buy Our Spares Smart (BOSS) Program.
- u. Coordinate with the supporting ASD and provide TAD requirements (Logistics Specialist) (if applicable).
- v. Participate in AVCAL, SHORCAL and Supplemental Aviation Spares Support conferences and other Supply and logistics meetings.

### **3.4.7 Division/Branch Officer**

#### **3.4.7.1 Division Officers:**

- a. Be responsible to the MO for all tasks assigned in support of the department.
- b. Use the most effective and economical procedures possible to accomplish assigned tasks.
- c. Efficiently employ personnel and resources to ensure the necessary quantity and quality of work.
- d. Ensure full employment of assigned resources, and a continuing effort to perfect the division's organization and procedures.
- e. Assign personnel to billets making sure they understand their duties and how those duties contribute to the work of the division, the department, and the command. Motivate personnel so they commit their talents and energies to the functions of the division.
- f. Ensure security of aircraft and SE, adequacy of tools in support of the TCP ([paragraph 10.12](#)), cleanliness and security of assigned working areas, and adherence to handling procedures for classified material.
- g. Provide provisioning actions as necessary.
- h. Ensure compliance with maintenance programs for assigned IMRL SE ([Chapter 3](#)).
- i. Ensure personnel comply with all safety instructions.

- j. Prepare and submit for publication such additional safety instructions as required in concert with the command's safety program.
- k. Ensure TDs are translated into appropriate maintenance actions.
- l. Nominate personnel as candidates for CDQARs and CDIs to the QA Officer.
- m. Assist in implementing the Corrosion Prevention and Control Program. In coordination with the Corrosion Prevention and Control Program Manager, conduct training in corrosion detection and prevention and continually emphasize proper cleaning procedures and cautious use of corrosion preventive materials, tools, and equipment. In addition to the airframe, ensure corrosion detection and reporting on all associated components, equipment, and immediate adjacent areas are accomplished during the performance of all maintenance and inspections.
- n. Ensure directives and publications routed by the MO are incorporated in the Active Required Reading File.
- o. Ensure the philosophy of repair at the lowest level of maintenance is pursued, using BCM review procedures and improvement of repair capability procedures ([Chapter 5](#)).
- p. Develop an understanding of NALCOMIS concepts and its application to management and MIS requirements. If operating NTCSS Optimized NALCOMIS, develop an understanding of CM ALS and its application to management and data replication.
- q. Keep the MMCO informed of problems that may affect department or division output.
- r. Be directly responsible to the MMCO in all matters that may affect department or division output if the support services division is established.
- s. Ensure all appropriate aircraft and SE publications are available and screened to ensure proper maintenance is performed.
- t. Become knowledgeable of MDS reporting procedures and reporting capabilities in NTCSS Optimized NALCOMIS and BMT (I-level).
- u. (I-level) Use BMT reports (I-level) to monitor daily workload and assign priorities.
- v. Ensure workload priority assignments outlined in [Chapter 5](#) are understood and followed by work center personnel.
- w. Utilize visual management queues, such as safety posters, 5S checklists (I-level), and tool or equipment location silhouetting to communicate safety information, equipment location, and standard work procedures.
- x. (I-level) Report CPI implementation progress at department meetings and coordinate the removal of barriers that prevent successful completion of CPI projects. Monitor the status of completed CPI events semi-annually to verify work centers are sustaining improved processes.
- y. (I-level) Verify division personnel comply with the AIRSpeed training plan.
- z. (I-level) Attend all tollgate reviews for CPI projects conducted within their area of responsibility.
- aa. Identify additional Division Officer responsibilities in the following NAMPSOP Maintenance Programs in [Chapter 10](#).

Maintenance In-Service Training Program ([paragraph 10.1](#))  
Fuel Surveillance Program ([paragraph 10.2](#))  
Navy Oil Analysis and Consumption Monitoring Program ([paragraph 10.3](#))  
Naval Aviation Maintenance Discrepancy Reporting Program ([paragraph 10.9](#))  
Foreign Object Damage Prevention Program ([paragraph 10.11](#))  
Tool Control Program ([paragraph 10.12](#))  
Egress/Explosive System Checkout Program ([paragraph 10.15](#))  
Support Equipment Operator Training and Licensing Program ([paragraph 10.16](#))  
Naval Aviation Metrology and Calibration Program ([paragraph 10.18](#))  
Hazardous Material Control and Management Program ([paragraph 10.19](#))  
IMA Component Repair Review and Individual Component Repair List Program  
([paragraph 10.20](#))  
Electromagnetic Interference/Electrostatic Discharge Program ([paragraph 10.21](#))

#### **3.4.7.2 Specific Division Officer Responsibilities**

- a. The Line Division Officer is responsible for the external condition of aircraft with regard to cleanliness and the day-to-day detection and reporting of corrosion and the failure of protective coatings.
- b. Additional QA Officer responsibilities are in each of the NAMPSOP maintenance programs in [Chapter 7](#) and [Chapter 10](#).
- c. The Branch Officer, when assigned division officer duties, shall assume duties per U.S. Navy Regulations and this Chapter as well as management responsibilities for maintenance tasks assigned to the branch. Routine administrative tasks shall be retained at the division or branch level.

#### **3.4.8 Maintenance Department Officer Training Requirements**

3.4.8.1 COs shall verify, as a minimum requirement, all unrestricted line officers assigned to the Squadron Maintenance Department attend the appropriate CENNAVAVNTECHTRA courses prior to or within 60 days after assuming their duties. The MO, AMO, Division, and Branch officers shall complete the Aviation Officer Maintenance Fundamentals course (Course C-555-0034). Officers who have completed an Aviation Maintenance Officer School course (Naval Aviation Maintenance Program Indoctrination (Course C-4D-2012) or Naval Aviation Maintenance Program Management (Course C-4D-2013)) are exempt from this requirement. QA Officers shall complete NALCOMIS (Optimized) OMA Quality Assurance Administration Course (Course C-555-0046).

3.4.8.2 Newly commissioned or designated aviation ground officers (Navy 1520/63XX/73XX and Marine Corps 6002/6004) shall, enroute to their first aircraft maintenance billet assignment, be ordered to the CENNAVAVNTECHTRA Detachment Whiting Field, Milton, FL, to attend either the Naval Aviation Maintenance Program Indoctrination course (Course C-4D-2012) or the Naval Aviation Maintenance Program Management course (Course C-4D-2013). The Naval Aviation Maintenance Program Management course (Course C-4D-2013) is designed for personnel possessing at least 2 years of aviation maintenance or aviation maintenance support experience. The requirement for completion of an Aviation Maintenance Officer School course will be waived only on an individual, case by case basis.



Following completion of this school, aviation ground officers will normally be ordered to a replacement squadron, MAW, or MCAS (as appropriate) for further assignment or type aircraft specific training.

3.4.8.3 As part of the Aviation Ground Maintenance Officer Training continuum, the following courses are available through CENNAVAVNTECHTRAU/DET:

- a. Aircraft Weight and Balance course (Course C-516-0001).
- b. Naval Aviation Maintenance Control Management for Optimized Organizational Maintenance Activity course (Course C-555-0053).
- c. Naval Aviation Material Control Management course (Course C-555-0051).
- d. Financial Management for Naval Aviation Operating Target Accounting (OPTAR) course (Course C-555-0018).
- e. Joint Aviation Supply and Maintenance Material Management (JASMMM) course (Course A-8B-0020) through the Navy Supply Corps School and Basic Corrosion Control course (CNATT-000-BCC-025-002-C0) through NKO (<https://wwwa.nko.navy.mil>).

3.4.8.4 Navy Aviation Maintenance Officer PQS (NAVEDTRA 43428A) is available for ground officers to complete per ACC or TYCOM guidance.

### **3.4.9 AIRSpeed Officer (I-Level)**

3.4.9.1 The AIRSpeed Officer facilitates the implementation of the command's CPI Strategic Plan. The AIRSpeed Officer should attain a Green Belt or LCIP certification and should be assigned for 18 months, whenever possible.

3.4.9.2 The AIRSpeed Officer shall:

- a. Be assigned for 18 months
- b. Attain a Green Belt/LCIP certification.
- c. Use AIRSpeed CPI analysis tools to identify, prioritize, and evaluate high impact improvement opportunities.
- d. Execute focused CPI events aligned with organizational goals to improve and standardize processes that have a significant impact on operational readiness, cost, man-hour commitment, or inventory.
- e. Conduct quarterly reviews of the AIRSpeed CPI deployment strategy and implementation progress.
- f. Report AIRSpeed CPI implementation progress, coordinate event prioritization, and elevate unresolved barriers during department meetings.
- g. Ensure AIRSpeed design documentation, SOPs, and POA&Ms are updated to reflect changes made during process improvement events.
- h. Evaluate best practices and benefits resulting from CPI projects for potential enterprise wide application.

- i. Ensure all AIRSpeed CPI projects and supporting documentation is recorded in CPIMS within 15 days of tollgate review or event completion (as applicable).
- j. Assist the MMCO (I-level) in tracking TRR trends to identify performance deficiencies that affect the capability of work centers to meet productivity goals and customer demand.
- k. Assist the MO, AMO, and Training Officer in the management of CPI training to include the following:
  - (1) Coordinate scheduling and verify appropriate AIRSpeed CPI training is completed per [paragraph 3.2.2.26b](#) within 12 months of check-in.
  - (2) Provide Yellow Belt Training and Champion/Project Sponsor training per [paragraph 3.2.2.26b\(2\)](#).
  - (3) Screen candidates for advanced CPI training and certification.
  - (4) Ensure an appropriate number of personnel are in the CPI training and certification pipeline to compensate for personnel turnover.
  - (5) Provide training on BMT and other productivity analysis tools.
  - (6) Ensure training records and CPIMS are updated with CPI training and certifications.
- l. Attend all tollgate reviews for CPI projects conducted within the organization.

### **3.4.10 Maintenance Master Chief Petty Officer (MMCPO) (Navy)**

#### **3.4.10.1 MMCPO Responsibilities:**

- a. The MMCPO reports to the MO and advises the MO in all matters affecting aircraft operations, aircraft maintenance, and department personnel. The MMCPO directs all maintenance in an operational unit on a day-to-day basis in support of its operations and assigned missions. The MMCPOs charter is to maintain assigned aircraft and aeronautical equipment in a RFT status while providing training for those in the Maintenance Department to improve the maintenance process.
- b. The MMCPOs leadership and expertise are essential to the success of the unit. MMCPOs shall be assigned to units based on NEC (8300) and adequate consideration shall be given to past assignment (T/M/S) experience. The MMCPO is assigned and qualified under the guidelines of this instruction to:
  - (1) Ensure the MMCO is advised of the overall workload and material status of all assigned assets.
  - (2) Be designated in writing by the MO, via the MMP, as the Maintenance/Production Control Program Coordinator.
  - (3) Assist with statistical analyses of aircraft incident reports; formulates guidelines for safety inspections and instructions.
  - (4) Plan, organize, implement, and control activities in compliance with policy statements, operation orders, and directives; forecast future requirements and plan and initiate actions to satisfy requirements.
  - (5) Prepare staffing studies, reports, and establish goals and priorities.

(6) Ensure the full capability of the department is used in support of its mission by reviewing and evaluating personnel, equipment and material requirements.

(7) Review and evaluate inspection records, QA reports, and flight records to ensure proper maintenance procedures are followed.

(8) Administer inventory, requisition, receipt, and transfer procedures for aircraft, equipment, and components. Maintain liaison with support activities (O-level, I-level, and D-level (as appropriate)) and the Supply Department, for example, the ASD of the air station to ensure requirements and workloads are known and satisfied.

(9) Monitor implementation of preventive maintenance program.

(10) Liaison with Navy and Marine Corps units to include other DOD aviation units on maintenance matters.

(11) Coordinate and monitor day-to-day operations within the Maintenance Department. Control daily workload and assign work priorities that ensure efficient movement of components and assets throughout the department. Where physically possible, Maintenance/Production Control will have an alternate means of communications, independent of telephones, within all work centers.

(12) Review monthly Aviation Maintenance Material Management (AV3M) summaries, MDS, and NTCSS Optimized NALCOMIS reports to ensure effective use of personnel, equipment, and facilities. Also review PMS publications and local maintenance technical manuals and ensure compliance.

(13) Maintain aircraft Logs and Records, associated equipment CM, ALS, ALSS, and SE records and monitor procedures to ensure limits of Life Limited Components are not exceeded.

(14) Provide technical advice and information to the supporting S-6/S-8/ASD concerning the identity and quantities of supplies, components/parts, LRCA components, engines, and propellers needed to manage workload.

(15) In addition to senior personnel (E-7/E-8) within the department, assign all maintenance personnel to billets commensurate with qualifications and expertise to maximize operational readiness. This effort shall be supported by readiness discussions with the MO and AMO.

(16) Ensure division assigns qualified personnel for the completion of scheduled maintenance inspections.

(17) Establish maintenance procedures to ensure SE that the activity has IMRL reporting responsibilities for is properly maintained.

(18) Pursue repair/rework to restore non-RFI/RFU to RFI/RFU condition. Prior to placing SE in long term preservation ensures SE is RFI/RFU and calibration requirements are placed in inactive status.

(19) Establish procedures for NDI and load test requirements are suspended while SE is in preservation.

**NOTE: The SE PMS Program (paragraph 10.17) and the Naval Aviation METCAL Program (paragraph 10.18) provide additional guidelines.**

### 3.4.10.2 O-level MMCPO:

- a. Coordinate the execution of the flight schedule.
- b. Manage the Safe for Flight qualification program to include screening candidates, monitoring progress, and making final recommendations to the CO, via the MO, prior to qualification. Coordinate follow-on training to ensure all Safe for Flight designated personnel are up-to-date on the latest procedures to include new or changed applicable instructions, publications, Aviation Maintenance Advisories (AMA), and Hazard Reports (HAZREP). Follow-on training should also address training shortfalls discovered through program monitoring, work center auditing, self-assessment, aviation 3M reporting and trend analysis.
- c. Coordinate the submission of work request WOs to the supporting I-level activity for functions beyond the repair capability, authorization, or responsibility of the activity.
- d. Attend the planning meetings in advance of each phase and calendar inspection.
- e. Monitor, via a log, and enforce procedures for controlling and minimization of aircraft and UAS cannibalization ([Chapter 5](#)).
- f. Plan the short and long term aircraft maintenance requirements including D-level maintenance.
- g. Ensure FCFs are conducted (as required).
- h. Monitor Maintenance Control for the accurate reporting of maintenance actions by performing a daily review of the NAMCOMIS OMA Aircraft/Equipment Workload Report ([Figure 15-9](#)) for correct U/P/D and EOC coding.
- i. Maintain close liaison with QA, particularly when major components are changed. Maintenance Control shall take the initiative to inform QA when such change occurs.
- j. Provide pilots and aircrew a record of aircraft discrepancies or AADB/ADB and corrective actions for the preceding 10 flights (minimum requirement) of the aircraft.
- k. Validate the NMCS/PMCS status listings on a daily basis.
- l. Assist in the publishing of the MMP.
- m. Coordinate and monitor NALCOMIS in relation to the O-level maintenance evolution.
- n. Establish liaison between the supply activity and the O-level to ensure all automated NALCOMIS supply processes are used and streamlined.
- o. Ensure ADBs are validated daily against the database reports.
- p. Ensure MRCs are entered into NALCOMIS OMA database as changes occur to the MRC deck.
- q. Ensure all subsystems within the scope of NALCOMIS OMA (assets, maintenance, logs and records) are kept updated.

### 3.4.10.3 I-level MMCPO:

- a. Monitor procedures for reviewing and approving work requests from supported activities and assigning work priorities.

- b. Coordinate with supported activities MMCPs on all issues relating to production.
- c. At ashore facilities interface and maintain liaison with D-level customer service activities (as required).
- d. Review and manage ICRL to ensure continued readiness and repair capability as well as identify opportunities to interdict possible BCM actions.

### 3.4.11 Aircraft Maintenance Chief (Marine Corps)

3.4.11.1 The Aircraft Maintenance Chief supervises the establishment and functions of all maintenance areas, maintenance personnel core qualifications, and their MOS development within a fixed wing/helicopter/tilt-rotor/UAV maintenance squadron or repair activity.

3.4.11.2 The Aircraft Maintenance Chief is responsible to the CO for all enlisted maintenance Marines' qualifications and professional development. The Aircraft Maintenance Chief (Marine Corps) reports to the Aircraft Maintenance Officer (Marine Corps) (AMO) on all matters affecting aircraft maintenance and maintenance personnel and assists in directing, supervising, and coordinating all enlisted personnel performing aircraft maintenance duties.

a. Monitors the activity's maintenance effort to ensure proper maintenance, administration, and material handling procedures are exercised, directing particular attention to the detection and removal of all administrative impediments to aircraft readiness.

**NOTE: The Aircraft Maintenance Chief shall monitor Maintenance Control for accurate reporting of maintenance actions by performing a daily review of the NALCOMIS OMA Aircraft/Equipment Workload Report (Figure 15-9) for correct U/P/D and EOC coding.**

- b. Be designated in writing by the AMO, via the MMP, as the Maintenance/Production Control Program Coordinator.
- c. Advise and assist the AMO by identifying maintenance program deficiencies, providing training, and evaluating and supporting the objective of CPI.
- d. Conduct both short and long range planning in support of Marine aviation and facilitate technical support to provide information flow and assistance from NAVAIRDEPOTs, ISSCs, contractors, and COMNAVAIRSYSCOM activities.
- e. Coordinates pre-deployment planning for provisioning personnel, facilities, SE, and services for the activity or activities.
- f. Monitors the Aviation Maintenance Training Program to ensure all required training courses are routinely validated.
- g. Analyze the mission accomplishment and core competency of the department using reports provided by ALERTS, ASM, MDS, and NTCSS Optimized NALCOMIS on a continuing basis and provide analytical data (as required) to support the NAE maintenance core competency readiness objectives.
- h. Manage aviation maintenance manpower requirements to optimize the activity's readiness through the appropriate assignment of personnel based on experience and core competency.

i. Ensure the core competency requirement standards for aircraft T/M/S are validated and coordinated with peer activities to ensure discrepancies within the baseline are reported to the Readiness Leadership Team baseline managers and program managers via the MAG and MAW.

Maintenance Function Applicable to:	Level		Note
	O	I	
<b><u>Servicing</u></b>			
Replacement of fluids (LOX, gaseous oxygen, nitrogen) necessary for maintaining an aircraft weapons system	x	x	1
Removed systems and components		x	
<b><u>Inspections</u></b>			
Daily, turnaround, special, conditional, inventory, acceptance, transfer, phase	x	x	1
Functional tests (applicable to ejection seat systems and components)	x	x	1
Functional tests (adjustment/alignment of installed systems/components)	x	x	1
Bench check, functional test, adjustment, calibration, and alignment of removed systems and components		x	
<b><u>Preservation</u></b>			
Level I, II, or III	x	x	1
<b><u>Repair</u></b>			
Remove/replace aircraft system(s)/components or associated hardware	x	x	1, 2
<b><u>Machine Operations</u></b>			
Drilling, cutting, grinding, sawing, dimpling, riveting, and filing	x	x	
Metal and metal machine work (plate, bar, sheet, tubing, rod, wire, and cable), shaping, milling, turning, pressing, forming, flaring, bending, punching, shrinking, stretching, spinning, shearing, swaging, and rolling		x	

**Figure 3-1 (front): O-Level and I-Level/FRC Maintenance Functions Applicable to Aircraft Systems and Components**

Maintenance Function Applicable to:			Level
<b><u>Cable, Tube, and Rod Work (Controls)</u></b>			
Remove and replace	x	x	3
Manufacture, swage, and test cables		x	
<b><u>Flex Lines and Rigid Tubing</u></b>			
Remove and replace	x	x	3
Fabrication and testing		x	
<b><u>Examination and Testing</u></b>			
Liquid penetrant, eddy current, magnetic particle, optical inspection	x	x	3, 4, 5, 6
Aircraft Confined Space entry authorization	x	x	4, 6, 7
Leak detection, ultrasonic inspection, x-ray process, hardness testing installed or portable equipment		x	3, 4
<b><u>Paint, Acrylic, and Epoxy Resins</u></b>			
Strip and refinish parts on aircraft and subassemblies	x	x	1, 3
Paint identification markings on aircraft and components	x	x	1, 3
Brush and spray touch-up of aircraft	x	x	1, 3
Apply acid proof paint	x	x	1, 3
Strip, repair, and refinish fiberglass components		x	
Strip, repair, and refinish composite components		x	
<b><u>Welding and Soldering</u></b>			
Oxyacetylene welding and cutting		x	
Electric Arc and Electric Inert Arc welding		x	4
Soldering	x	x	

**Figure 3-1 (back): O-Level and I-Level/FRC Maintenance Functions Applicable to Aircraft Systems and Components**



Maintenance Function Applicable to:	Level		
	O	I	Note
<b><u>Corrosion Control/Treatment</u></b>			
Strip treat and paint affected areas	x	x	1, 3
Daily wipe down of critical surfaces and fresh water wash down	x	x	1, 3
Strip, treat, and repaint removed components (components removed for other than accessibility)		x	
<b><u>Cleaning and Plating</u></b>			
Vacu-blast (portable)	x	x	4, 6
Blasting		x	
Gas turbine engine cleaning	x	x	
Ultrasonic cleaning		x	
<b><u>Hydraulic Systems Contamination Control</u></b>			
Sample and analyze hydraulic fluid	x	x	
Clean systems using the recirculation method	x	x	
Flush systems	x	x	
<b><u>Heat Treating and Baking</u></b>			
Small parts		x	
<b><u>Miscellaneous</u></b>			
Maintain operational pool aircraft assigned to specific ships, stations, and squadrons by the ACC or TYCOM	x	x	
Responsible for loading and offloading aircraft	x		
Repair structural damage	x	x	
Recovery of crashed aircraft	x	x	1, 3
Process/repair of stricken aircraft systems and components		x	1, 3
TD Compliance	x	x	
Incorporate TDs (on removed systems/components)		x	1, 3

- NOTES:**
1. Applicable to IMAs that have aircraft assigned.
  2. Applicable to IMAs that have the assigned responsibility and resources.
  3. Authorized to provide assistance if function is beyond technical capability of the O-level.
  4. Use restricted to those personnel currently certified/licensed.
  5. Visible dye penetrants (Type II) shall not be used to inspect aircraft, engine, or missile parts or components unless specifically approved by the responsible In-Service Support Center.
  6. Equipment required to perform these functions will be subcustodied from supporting IMAs.
  7. In a contractor supported maintenance program, responsibilities will be assigned by the ACC or TYCOM.

**Figure 3-2: O-Level and I-Level/FRC Maintenance Functions Applicable to Aircraft Systems and Components**

**Maintenance Function Applicable to:**

	Level		
	O	I	Note
<b><u>Power Plant Systems and Components</u></b>			
Removal/replacement of components (engine accessories, propellers, rotors linkages, cables, common hardware ( installed/uninstalled))	x	x	1, 2, 3
Minor repair of installed engines/APUs	x	x	1, 2
Repair installed/uninstalled engines/APUs by replacement of parts/components (disassembly as authorized for the specific engine model)	x	x	1, 2, 3
Perform installed engine/APU inspections per appropriate MRCs	x	x	1, 2, 7
Perform periodic inspections of engines/APUs normally installed		x	4, 6
Perform periodic inspections of engines/APUs normally uninstalled		x	5, 6
Repair of removed SEGTE and APUs		x	3
Functional test and adjustment (using engine run-up stand)		x	
Preservation/depreservation of installed engines and APUs	x	x	1, 2
Preservation/depreservation of uninstalled engines, APUs, and SEGTEs, including canning/uncanning		x	
Assemble QECAs		x	
<b><u>Propeller/Rotary Wing Dynamic Drive Systems and Components</u></b>			
Remove/replace propellers, associated components, and common hardware	x	x	1, 2
Minor repair (blending of metal propeller blades and composite repair of fiberglass blades per applicable publications)	x	x	1, 2
Perform final buildup of quick change rotary wing dynamic drive assemblies	x	x	1, 2
Propeller assembly and disassembly	x	x	8, 9
Preservation/depreservation of removed/uninstalled propellers	x	x	8
Deicer boot replacement and propeller balancing (not applicable to aircraft carriers)	x		
Buildup of quick change rotary wing dynamic drive assemblies		x	

**NOTES: 1. Applicable to IMAs that have aircraft assigned.**

**2. Authorized to provide assistance if function is beyond technical capability of the O-level.**

**3. Applicable to IMAs that have the assigned responsibility (NAVAIR NOTE 4700) and resources.**

**4. Installed engine inspection intervals. Engines inducted for third or second-degree repair that are maintained per the installed inspection (special/phase) concept shall have the inspection requirements performed as specified in the applicable Quick Engine Change Assembly (QECA) Engine MRCs/technical manuals.**

**5. Removed engine inspection intervals.**

**a. Engines inducted for third and second-degree repair with major inspection intervals of 400 hours or more shall have a major inspection performed by the IMA, if 25 percent or less of the inspection interval remains.**

**b. Engines inducted for third- and second-degree repair with major inspection intervals of less than 400 hours shall have a major inspection performed by the IMA if less than 100 hours remain in the inspection interval.**

**6. Engines inducted for first-degree repair as identified on the maintenance allocation table of the applicable MIM shall have all inspections performed concurrent with the repair. First-degree repairs of a minor nature not requiring an excessive amount of man-hours may have the inspection requirements waived by the ACC.**

**Figure 3-3 (front): O-Level and I-Level/FRC Maintenance Functions Applicable to Power Plant Systems and Propeller/Rotary Wing Dynamic Drive Systems and Components**

7. Engine turn-up low/high power by qualified personnel.
8. Qualified O-level personnel authorized to perform; propeller assembly and disassembly, preservation and depreservation of removed/uninstalled propellers for the R-391 Dowty Propeller installed on the KC-130J aircraft.
9. Qualified O-level R-391 propeller system; QAR/CDQAR is authorized to sign-off MAFs and QA stamp repaired propeller assemblies "READY FOR ISSUE" for immediate re-installation or acceptance or placement into the contractor supported Aircraft Parts Store, equivalent supply warehouse (issue point) or pool (inventory).

**Figure 3-3 (back): O-Level and I-Level/FRC Maintenance Functions Applicable to Power Plant Systems and Propeller/Rotary Wing Dynamic Drive Systems and Components**

Maintenance Function Applicable to:	Level		
	O	I	Note
<b><u>Cartridges, Pyrotechnics, Cartridge Actuated Devices, and Propellant Actuated Devices</u></b>			
Breakout, visual inspection	x	x	1
Install/replace in parent equipment	x	x	
Compliance with Notice of Ammunition Reclassifications	x	x	2
TD Compliance	x	x	3
<b><u>Avionic SE</u></b>			
Operational check and test and routine servicing	x	x	
Minor adjustment, removal and replacement of components and parts (knobs, safety wire, fuses, and light bulbs)	x	x	
Exterior cleaning/preservation, minor corrosion control, and finish touch-up (as required)	x	x	11
Removal/replacement of major component parts, subassemblies, and modules		x	
Repair of components by replacement of parts (tubes, transistors, resistors)		x	
Bench test of components and calibration (using standards provided)		x	
TD Compliance		x	
<b><u>Nonavionic SE</u></b>			
Preoperation, postoperation, daily inspections, servicing, and daily maintenance per PMRMs	x	x	4
Cleaning/preservation, minor corrosion control, and finish touchup (as required)	x	x	4
Periodic inspections and maintenance using maintenance technical manuals or a handbook of maintenance instructions		x	4, 12

**Figure 3-4: O-Level and I-Level/FRC Maintenance Function Applicability**

Maintenance Function Applicable to:	Level		
	O	I	Note
<b><u>Airborne Mine Countermeasures Equipment</u></b>			
Servicing, functional test, and adjustment	x	x	
Inspection (prelaunch, turnaround, daily, postlaunch, special, conditional)	x	x	
Inspection PSE, SE (preoperational)	x	x	
Removal and installation of components/parts (strainers, filters, fasteners)	x	x	
Inspection, repair, and bench test of components		x	
Replacement of parts requiring component disassembly, special tools, or SE		x	
Repair removed engines by replacement of parts (if applicable)	x	x	
Major repair of removed engines and complete repair		x	
Engine test, including performance evaluation		x	
Preservation and depreservation	x	x	
Cleaning, corrosion control, and prevention	x	x	
TD Compliance	x	x	
<b><u>Aviation Life Support Systems</u></b>			
Servicing/purging of installed/removed systems/components	x	x	<b>9</b>
Inspections (daily, turnaround, special, conditional, inventory, phase, acceptance, transfer)	x	x	<b>10</b>
Inspections (bench check, pressure test, visual, functional test, adjustment, calibration of components, and proof load test (rescue sling))		x	
Removal/replacement of systems/components/associated hardware	x	x	<b>10</b>
Repair of removed systems and components		x	<b>11</b>
Machine operations (sewing, searing, embossing/stamping, fabrication, pressing, recharging)	x	x	
TD Compliance	x	x	<b>8, 10</b>
Incorporate TDs on removed systems/components		x	
Recovery and processing for emergency reclamation of ALSS components	x	x	<b>8, 10</b>
Repair and processing for emergency reclamation of ALSS components		x	
Corrosion control/treatment (strip, treat, paint, or repaint)	x	x	<b>10</b>
Manufacture of liquid oxygen and nitrogen		x	<b>11</b>
<b><u>Marine Air Traffic Control and Landing System</u></b>			
Operational check, test, and routine servicing	x		
Inspections (periodic)	x		
Minor adjustments/alignments	x		
Removal and replacement of components (module, circuit card assemblies, and chassis-mounted piece part)	x	x	<b>13</b>
Removing and replacing subassemblies (as required)		x	
Replacement of consumable parts, such as knobs, safety wire, fuses, and light bulbs		x	
Repair of flexible cables		x	
Removal and installation of special connectors, eyelets, and terminals		x	
Functional test and checks		x	

Figure 3-5 (front): O-Level and I-Level/FRC Maintenance Function Applicability

**NOTES: 1. Applies to aircraft ALSS, CADs and PADs.**

**2. NAR is not an authorized medium for directing or authorizing the removal/replacement of installed aircraft or ALSS cartridges/pyrotechnics/CADs/PADs or for affecting aircraft availability. The TD system was established for that purpose. If within three days of receipt of a NAR affecting CADs/PADs/aircraft availability a TD has not been received, reporting custodian will request assistance from the ACC or TYCOM who in turn will request status from COMNAVAIRSYSCOM (AIR-6.8.5).**

**3. Maintenance level as specified in TDs.**

**4. When PMRMs do not exist (old or simple equipment), local requirements shall be established.**

**5. I-level activities assigned first, second, and third-degree functions under the Three-degree Gas Turbine Engine Repair Program for removed SEGTEs shall perform the functions in the APU/SEGTE shop (Work Center 412).**

**6. Component repair of engines included in the NAVAIR Nonavionic SE QEC Program will be performed per NAVICPINST 4400.75.**

**7. Inspected, maintained, and tested per NAVAIR 17-1-114.1.**

**8. Authorized to provide assistance if function is beyond technical capability of O-level.**

**9. Use restricted to those personnel currently qualified/certified/licensed.**

**10. Applicable to IMAs that have aircraft assigned.**

**11. Applicable to IMAs that have the assigned responsibility and resources.**

**12. Deployed units without IMA support may perform limited I-level scheduled maintenance of SE, if all the conditions of [Chapter 16](#) are met.**

**13. I-level capability per COMNAVAIRSYSCOM-approved SMR Codes.**

**Figure 3-5 (back): O-Level and I-Level/FRC Maintenance Function Applicability**

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**15 Jan 2017**

Activity	Level			Note		Level			Note
	O	I	D			O	I	D	
NAF Atsugi	x	x		7, 8	NAVSTA Mayport	x	x		
PACMISRANFAC HAWAREA									
Barking Sands	x	x		12	NAS Meridian	x	x		
NAVAIRWARCENWPNDIV									
China Lake	x	x			NAF Misawa	x	x		
NAS Corpus Christi	x	x		10	NAVSUPPACT Naples	x			4
NAS JRB Ft Worth	x	x			NAS JRB New Orleans	x	x		
NAF El Centro	x	x		5	NAVSTA Norfolk	x	x	x	
NAS Fallon	x	x		3	NAS North Island	x	x	x	
NAVSTA Guantanamo Bay	x	x		5	NAS Oceana	x	x	x	
NAS Jacksonville	x	x	x		NAS Patuxent River	x	x		
NAF Washington DC	x	x			NAVCOASTSYSSTA				
NAS Key West	x	x		5	Panama City	x	x		3
NAS Kingsville	x	x	x		NAS Pensacola	x	x		
Joint Base McGuire-Dix-					NAS Point Mugu	x	x		1
Lakehurst	x	x		9	NAVSUPPACT Souda Bay	x	x		4
NAS Lemoore	x	x	x		NAS Sigonella	x	x		2, 4, 11
NAS Bahrain	x	x			NAS Whidbey Island	x	x	x	
Anderson AFB, Guam	x	x			NAS Whiting Field	x	x		
					Tinker AFB, Oklahoma	x		x	

**NOTES: 1. Activities not under the management control of COMNAVAIRSYSCOM, which have limited I-level support capabilities will be supported as directed/negotiated by type commanders. I-level maintenance performed on equipment on sub-custody to departments, other than the air wing, requires the support of additional personnel from the department having such equipment on subcustody.**

**Figure 3-6 (front): Assigned Levels of Maintenance by Activity, Navy**

2. Naval Base Ventura County provides O-level and I-level maintenance for NAWS and NAVAIRWARCENWPNDIV aircraft; line services for transient aircraft; and I-level support to all tenant activity aircraft. The FRC Southwest Detachment Point Mugu organization is authorized a single department head who exercises control over both the O-level and I-level.
3. NAS Sigonella provides limited flight line support and is authorized to perform limited I-level avionics and structural and composite maintenance functions; Oil Analysis, NDI, tire and wheel, solid line and flexible hydraulic hose buildup and repair, ALSS, SE functions, and T-56 propeller buildup and repair.
4. Authorized to perform the following limited I-level maintenance functions for assigned/tenant aircraft: tire and wheel buildup, and SE.
5. NAS Sigonella provides limited SE support for line operations at NAVSUPACT Souda Bay and Camp Lemonier, Djibouti.
6. Authorized to perform limited I-level maintenance functions for assigned/tenant aircraft: tire and wheel build up, selected avionics, and SE.
7. Authorized to perform limited I-level maintenance functions for assigned, tenant, and selected transient aircraft: tire and wheel buildup, NDI, hydraulic hose and tube, Oil Analysis, ALSS, SE, and Type IV calibration laboratory services.
8. Authorized to perform limited I-level maintenance functions on avionics and SE.
9. Provides I-level ALSS maintenance in support of FRCWP, Atsugi; and provides I-level support for common avionics systems for VQ-1 Det aircraft.
10. Authorized to perform the following I-level maintenance functions for assigned/tenant aircraft: avionics, engine buildup, hydraulic and structural component repair, tire and wheel buildup, ALSS, and SE.
11. NAS Corpus Christi provides O-level maintenance for two NAS SAR UH-1N aircraft; line services for transient aircraft; and limited I-level maintenance functions in calibration, battery support for SE and contractor maintained T-34 aircraft, non-jet ALSS, and SE.
12. Authorized to operate, maintain, and perform limited D-level maintenance functions on oxygen and nitrogen generating equipment.
13. Performs following limited I-level maintenance functions for assigned/tenant aircraft as authorized by higher authority: avionics, engine buildup, hydraulic component repair, wheel and tire buildup, ALSS, and SE.

Figure 3-6 (back): Assigned Levels of Maintenance by Activity, Navy



Activity	Level			Note
	O	I	D	
MCAF Quantico (HMX-1)	x	x		2, 3
MCAS Beaufort				2
MCAS Camp Pendleton				2
MCAS Cherry Point	x	x	x	1, 4
MCAS Futenma	x	x		4, 5
MCAS Iwakuni	x	x		4, 5, 6
MCAS Miramar				2
MCAS New River	x			2, 5
MCAS Yuma	x	x		2, 4
MCB Hawaii	x	x		2, 5

**NOTES:** 1. The Fleet Readiness Center performs D-level maintenance for the entire aviation maintenance program and furnishes related technical services as specified by COMNAVAIRSYSCOM.

2. Provides flight line service for transient aircraft.

3. Authorized limited I-level maintenance.

4. Assigned the following limited I-level maintenance for assigned aircraft: avionics maintenance, engine buildup, tire and wheel buildup, and such other component repair as established in local ICRLs. Provides I-level support for all assigned SE.

5. I-level maintenance for assigned aircraft is established by local agreement. Provide personnel and equipment to accomplish required I-level maintenance for both assigned aircraft and SE when a joint facility is used.

6. Authorized to operate, maintain, and perform limited D-level maintenance functions on oxygen and nitrogen generating equipment.

**Figure 3-7: Assigned Levels of Maintenance, Non-Fleet Marine Forces Activity, Marine Corps**

Activity	Level			Note
	O	I	D	
ACS (Aviation Capable Ship)		x		3, 7, 8
CVN (Aircraft Carrier Nuclear)	x	x		1, 2, 3, 4, 5
LHA (Amphibious Assault Ship (General Purpose))	x	x		1, 2, 3, 5, 8
LHD (Amphibious Assault Ship)	x	x		1, 2, 3, 5, 8
LPD (Amphibious Transport Dock)	x	x		1, 3, 6

**NOTES:** 1. I-level maintenance performed on equipment on subcustody to departments, other than the air wing, requires additional support personnel from the department having such equipment on subcustody.

2. CVNs, LHAs, and LHDs are assigned the following maintenance responsibilities: provide O-level and I-level maintenance facilities for use by embarked aviation units; provide and maintain required custody coded (P and E) items of SE, other than organizational property, for use by embarked aviation units; provide I-level support and O-level maintenance material to embarked aviation units. IMAs are assigned responsibility for O-level maintenance of the ship's assigned aircraft.

3. Transportation vehicles assigned to the ship are not aeronautical in nature so they are not maintained or supported by aviation O-level or I-level maintenance.

4. Weapons department and IMAs are assigned I-level support for the test, repair, calibration, and maintenance of air launched guided missiles and associated missile test equipment.

5. CVNs, LHAs, and LHDs. IMA is responsible for I-level maintenance of crash salvage equipment, flight and hangar deck cleaning and maintenance equipment. For the TAU-2 firefighting equipment, technical assistance will be provided by the Engineering Department.

6. LPDs provide and maintain items of SE, TAU-2, and AS32P-25 firefighting equipment in support of embarked aviation units. I-level maintenance is limited to troubleshooting and replacing minor components, for example, starters, switches, belts, tires and wheels, and corrosion control.

7. Wings, groups, squadrons, and detachments will retain or cross deck organizational property at the discretion of the cognizant ACC or TYCOM.

8. Surface TYCOMs are responsible for O-level maintenance and inventory management of SE per directives published by the aviation TYCOM. I-level maintenance is done by IMAs designated by the aviation TYCOM. D-level rework of SE is scheduled through the aviation TYCOM.

**Figure 3-8: Assigned Levels of Maintenance, Aviation Ships**

Activity	Level			Note
	O	I	D	
CVW (Carrier Air Wing)	x			2
HCS (Helicopter Combat Support)	x	x		1
HM (Helicopter Mine Countermeasures Squadron)	x	x		1
HSL (Helicopter Anti-submarine Squadron Light)	x			
HSM (Helicopter Maritime Strike Squadron)	x			
VAQ (Tactical Electronic Warfare Squadron)	x	x		1
VAW (Carrier Airborne Early Warning Squadron)	x			
VFA (Fighter/Attack Squadron)	x			
VFC (Fighter Squadron Composite)	x			
VP (Patrol Squadron)	x	x		
VPU (Patrol Squadron Special Unit)	x			
VR (Fleet Logistics Support Squadron)	x			
VRC (Fleet Tactical Support Squadron)	x	x		
VQ (Fleet Air Reconnaissance Squadron)	x	x		1
VX (Air Development Squadron)	x	x		1

**NOTES: 1. Authorized to perform limited I-level maintenance on equipment that is peculiar to the mission of the activity and assigned aircraft as authorized by ACCs and COMNAVAIRSYSCOM. While deployed, HM squadrons and detachments are authorized to perform limited I-level maintenance on airborne mine countermeasures equipment per the applicable Weapons System Planning Document.**

**2. Wing commanders are responsible for coordinating all O-level maintenance performed on, or in support of, all aircraft assigned to wing squadrons. Particular emphasis is required in areas where the various wing squadrons need the same maintenance facilities.**

**Figure 3-9: Assigned Levels of Maintenance, Fleet and Squadron Units, Navy**

Activity	Level			Note
	O	I	D	
HMH (Marine Heavy Helicopter Squadron)	x			
HMLA (Marine Light Attack Helicopter Squadron)	x			
HMLAT (Marine Light Attack Helicopter Training Squadron)	x			
HMM (Marine Medium Helicopter Squadron)	x			
HMMT (Marine Medium Helicopter Training Squadron)	x			
HMT (Marine Heavy Helicopter Training Squadron)	x			
MACG (Marine Air Control Group)	x	x		5
MALS (Marine Aviation Logistics Squadron)	x	x	x	1, 3
MWSS (Marine Wing Support Squadron)	x	x		4
VMA (Marine Attack Squadron)	x	x		2
VMAQ (Marine Tactical Electronics Warfare Squadron)	x	x		2
VMAT (Marine Attack Training Squadron)	x			
VMFA (Marine Fighter Attack Squadron)	x			
VMFA (AW) (Marine Fighter Attack (All Weather) Squadron)	x			
VMFAT (Marine Fighter Attack Training Squadron)	x			
VMGR (Marine Aerial Refueler Transport Squadron)	x	x		2
VMM (Marine Medium Tiltrotor Squadron)	x			
VMMT (Marine Medium Tiltrotor Training Squadron)	x			
VMU (Marine Unmanned Aerial Vehicle Squadron)	x			
VMX (Marine Tiltrotor Test and Evaluation Squadron)	x			

**NOTES: 1. Authorized to perform O-level and I-level maintenance for supported squadrons. In addition, a MALS is responsible for O-level maintenance generated by I-level maintenance on systems, engines, or equipment for supported squadrons.**

**2. Authorized to perform limited I-level maintenance on peculiar equipment when independently deployed.**

**3. Authorized to perform limited D-level maintenance when D-level artisans have been assigned to interdict BCM maintenance actions.**

**4. Authorized to perform O-level and I-level maintenance on components of the EAF system and meteorological system complex. I-level support beyond the capability of an MWSS will be performed by a designated MALS.**

**5. MATCDs within the MACG perform O-level and limited I-level maintenance on MATCALS equipment. I-level maintenance beyond their capability and aviation supply/fiscal support is provided by the MALS.**

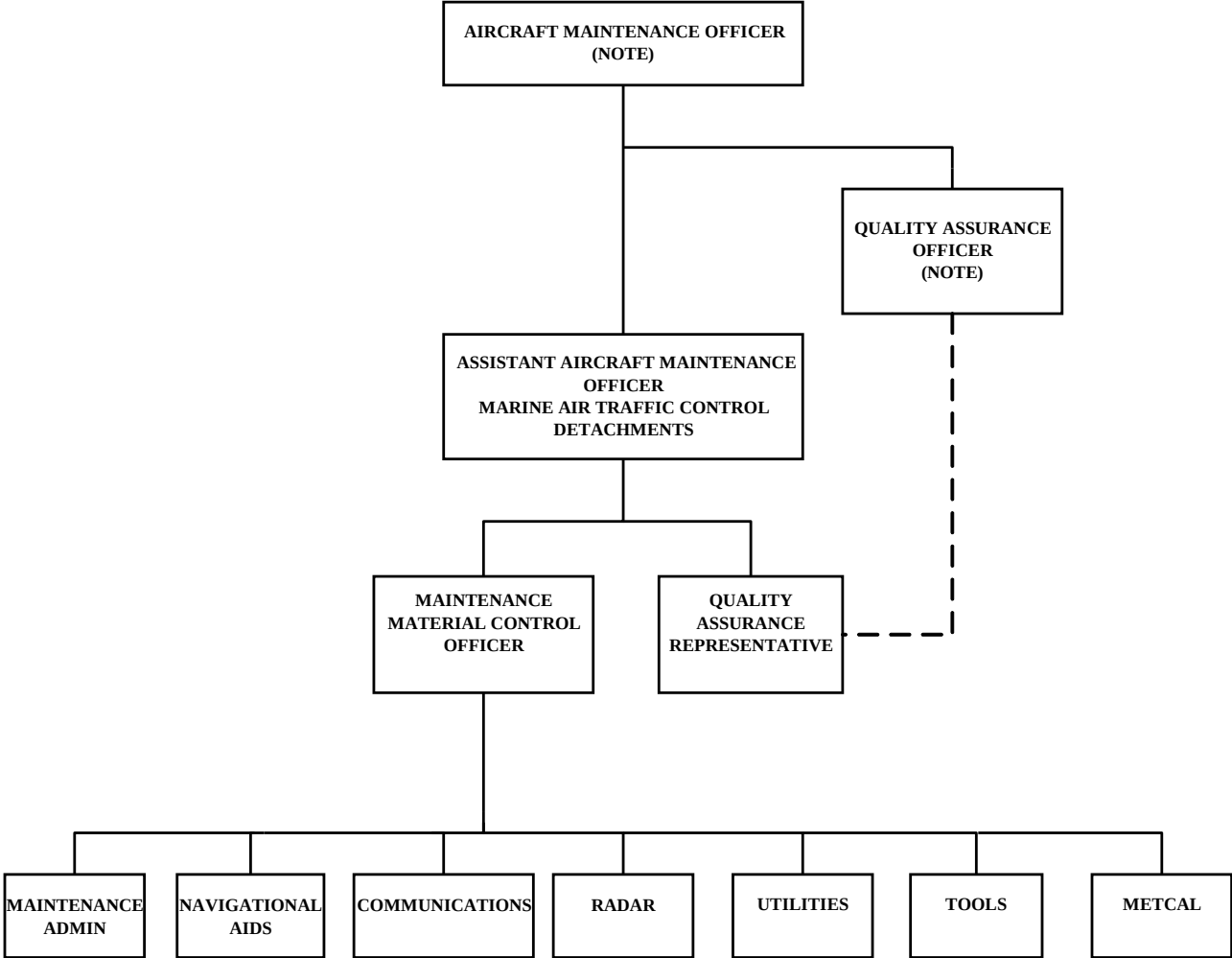
**Figure 3-10: Assigned Levels of Maintenance, Aviation Fleet Marine Forces**

Activity	Level			Note
	O	I	D	
CENNAVAVNTECHTRA (Center for Naval Aviation Technical Training)	x			
CNATRA (Chief of Naval Air Training)	x			
HT (Helicopter Training Squadron)	x			
MARAS (Marine Air Reserve)	x			2
NAR (Naval Air Reserve)	x	x		
NATTC (Naval Air Technical Training Center) Pensacola	x			1
VT (Training Squadron)	x			

**NOTES: 1. The aircraft maintenance unit of NATTC, Pensacola, does O-level maintenance on aircraft and SE used for training in support of technical schools. NAS Pensacola performs I-level maintenance on SE that is beyond the capability of NATTC.**

**2. Marine air reserve aviation squadrons perform O-level maintenance on assigned aircraft during active duty for training periods or cruises and when activated and assigned to fleet control. During regular monthly drill periods, these squadrons do maintenance, which varies with training requirements, and schedules published by Fourth Marine Air Wing and the parent activities.**

**Figure 3-11: Assigned Levels of Maintenance, Naval Air Training and Marine Air Reserve Squadrons and Units**



NOTE: This is a staff billet at the MACS S-6.

Figure 3-12: O-Level Marine Air Traffic Control Detachment Organization

Activity	Level			
	O	I	D	Note
Activities/Organizations Having Custody of Bailed/Loaned Aircraft	x			
Defense Contract Management Agency	x	x	x	1
Navy Recruiting Command Aircraft Training Device, Aircrew (Simulators)		x	x	5
Naval Weapons Evaluation Facility	x	x		1, 2
NAWCTSD (Naval Air Warfare Center Training Systems Division)	x			1
Training Device Maintenance Crews	x	x		4
Tactical Support Center (TSC)	x	x		3, 4

**NOTES: 1. I-level maintenance support of special activities covered by this note is performed by the IMA on the station/ship from which the special activity operates or the IMA of the station/ship designated by the COMNAVAIRSYSCOM or ACC or TYCOM.**

**2. May also be authorized to perform limited I-level maintenance on equipment required to support the assigned missions of the activity plus tire and wheel buildup, engine buildup, and avionics maintenance.**

**3. Authorized to perform I-level maintenance on TSC equipment if supporting IMA capability does not exist.**

**4. Authorized to perform I-level maintenance on aviation training device unique equipment. CENNAVAVNTECHTRAU, at an NAS, will receive support for aircraft common equipment (modified or unmodified) by the NAS IMA where it is located. When located aboard an MCAS, the CENNAVAVNTECHTRAU will be provided support for aircraft common systems or equipment (modified or unmodified) by the nearest MALS supporting that aircraft or equipment.**

**5. O-level and I-level maintenance performed on simulators assigned to naval recruiting districts is performed by individually contracted fixed base operators and conforms to FAA standards using Navy inspection criteria.**

**Figure 3-13: Assigned Levels of Maintenance, Special Activities and Units**

COMNAVAIRFORINST 4790.2C  
15 Jan 2017

OPNAVINST 4790.2 (Series)  
COMNAVAIRFORINST 4790.2 (Series)

NDI CERTIFICATION RECORD		
1. NAME:	2. RATE/RANK:	
3. CERTIFYING ACTIVITY:		
4. EFFECTIVE DATE (DD MMM YYYY):	5. RECERTIFICATION DATE (DD MMM YYYY):	
6. THIS INDIVIDUAL IS CERTIFIED TO CONDUCT NDI BY USE OF THE FOLLOWING METHODS(S):		
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"><input type="checkbox"/> RADIOGRAPHIC</div> <div style="text-align: center;"><input type="checkbox"/> EDDY CURRENT</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"><input type="checkbox"/> PENETRANT</div> <div style="text-align: center;"><input type="checkbox"/> ULTRASONIC</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"><input type="checkbox"/> MAGNETIC PARTICLE</div> <div style="text-align: center;"><input type="checkbox"/> OTHER (Specify in remarks):</div> </div>		
7. REMARKS:		
8. PRINT OR TYPE CERTIFYING OFFICIAL NAME, TITLE:	9. SIGNATURE DATE (DD MMM YYYY):	10. CERTIFYING OFFICIAL SIGNATURE:
Original to: Individual's NDI Technician/Operator Log		

OPNAV 4790/139 (Rev 04/2016)

Figure 3-14: NDI Certification Record (OPNAV 4790/139) (Sample)





PRECEDENCE: ROUTINE or PRIORITY  
FM REPORTING CUSTODIAN  
TO (NEAREST DEPOT FLEET READINESS CENTER)  
INFO ENDORSING IMA  
COMNAVAIRFOR SAN DIEGO CA/N42/N421//  
COMFLTREADCEN PATUXENT RIVER MD/N42/  
TYPEWING/MAW  
CVW/ACE COMMANDER  
OTHERS AS APPROPRIATE  
BT  
UNCLAS  
MSGID/GENADMIN/ACTIVITY//  
SUBJ AIRCRAFT PLANNER AND ESTIMATOR SERVICES REQUEST//  
REF/A/DOC/COMNAVAIRFORINST 4790.2//  
REF/B/DOC/NAVAIRINST 13023.3 CH-1/21NOV2005  
REF/C/ (AS APPROPRIATE)//  
NARR/REF A IS NAVAL AVIATION MAINTENANCE PROGRAM. REF B IS PROCEDURES FOR  
REQUESTING PLANNER AND ESTIMATOR SERVICES. (REF C AS APPROPRIATE)//  
RMKS/1. REPORTING CUSTODIAN  
2A. CONTROLLING CUSTODIAN  
2B. WING/CVW/MAW  
2C. SUPPORTING IMA/MALS CONCURRENCE  
3A. REPORT CONTROL NUMBER (RCN)  
3B. DESCRIPTION OF DAMAGE/DISCREPANCY (INCLUDE PART NUMBERS, FIGURES, ETC.)  
3C. REFERENCES: LIST TECHNICAL MANUALS AND APPLICABLE PARAGRAPHS.  
3D. DEFECT DIMENSIONS/CORROSION TYPE (EROSION, CREVACE EROSION, GALVANIC EROSION,  
INTERGRANULAR EROSION, PITTING, SELECTIVE LEACHING, UNIFORM ATTACK)/PIN-CONTACT  
INFORMATION/DETECTION METHOD (VISUAL, ENHANCED VISUAL, EDDY CURRENT, ULTRA  
SONIC, RADIOGRAPHY, THERMOGRAPHY)  
**NOTE: WHEN REQUESTING ASPA, SPECIFY AS ASPA I, II, II, ETC.**

**Figure 3-16: (page 1): Planner and Estimator Message Request Format**

- 4A. DATE DISCREPANCY DISCOVERED.
  - 4B. DISCOVERED DURING PREVENTATIVE MAINTENANCE (PM): (YES OR NO). IF YES: TYPE PM/DATE COMPLETED/JCN
  - 4C. DISCOVERED DURING TD INCORPORATION: (YES OR NO). IF YES: DIRECTIVE TYPE/DIRECTIVE NUMBER/JCN
  5. MAINTENANCE INDUCED: (YES OR NO)
  6. DISCREPANCY JCN
  7. EI RCN
  8. MISHAP CLASSIFICATION (CLASS A, B, C OR D)
  9. TMS/BUREAU NUMBER
  10. TOTAL A/C FLIGHT HOURS
  11. LAST IMC/P EVENT/DATE
  12. LAST O/I LEVEL PM TYPE/DATE COMPLETED/JCN
  - 13A. AIRCRAFT LOCATION
  - 13B. A/C STATUS (FMC, PMC, NMC)
  14. OPERATIONAL ENVIRONMENT (SEA, SHORE, DESERT)
  15. EMBARKED/DEPLOYED (YES OR NO)
  16. WUC/UNS
  17. PART INFORMATION NIIN/NOMENCLATURE/PART NUMBER/SERIAL NUMBER/CAGE CODE/TIME SINCE NEW
  18. REMARKS:
  19. POC: DSN XXX-XXXX, COMM XXX-XXX-XXXX.
- BT
- NOTE: P&E Service Requests by naval message are only allowed when connectivity to JDERS is unavailable.**

**Figure 3-16: (page 2): Planner and Estimator Message Request Format**

OPNAVINST 4790.2B

SUPPORT EQUIPMENT TRANSACTION REPORT													
1. PROGRAM INDICATOR <input type="checkbox"/> IMRL <input type="checkbox"/> TOL <input type="checkbox"/> LAMS <input type="checkbox"/> CAL STD <input type="checkbox"/> LOCAL				2. JULIAN DT		3. TR SER NO		4.					
5. REPORTING ACTIVITY						6. RECEIVED FROM/TRANSFERRED TO ACTIVITY							
5a. AA#			5b. ACTIVITY NAME (Short Title)			6a. AA#			6b. ACTIVITY NAME (Short Title)				
7. QTY		8. TYPE TRANSACTION <input type="checkbox"/> GAIN <input type="checkbox"/> TRANSFER <input type="checkbox"/> SURVEY				9. TIC		10. TOT Q#		11. FSCM		12. SER NO	
13. PART NUMBER						14. NSN				15.			
16. NOMENCLATURE						17. TRANSPORTATION CONTROL NO							
18. ITEM NO		19. RWK CNTRL		20. TIC		21. QTY AUTH		22. LAST TR NO		23. PRINT DT		24.	
25. RE-IDENTIFICATION DATA				25a. FSCM		25b. RE-IDENTIFIED PART NUMBER				25c. TOT Q#			
26. SUBCUSTODY			26a. TYPE		26b. <input type="checkbox"/> ISSUE <input type="checkbox"/> CORRECTION		26c. CAL/PAR/WK/ACT		26d. CAL/PAR/WK/DUE		26e. QTY		
27. ISSUE		27a. DATE		27b. TIME		27c. ORG		27d. W/C		27e. STATUS		27f. RECEIVED BY (Signature, Rank/Rate)	
28. RETURN		28a. DATE		28b. TIME		28c. ORG		28d. W/C		28e. STATUS		28f. RECEIVED BY (Signature, Rank/Rate)	
29. AUTHORITY/COMMENTS/LOCAL USE													

OPNAV 4790/64 (REV. 3-82)      30 010747-001-6000

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OPNAVINST 4790.2B

SUPPORT EQUIPMENT TRANSACTION REPORT													
1. PROGRAM INDICATOR <input type="checkbox"/> IMRL <input type="checkbox"/> TOL <input type="checkbox"/> LAMS <input type="checkbox"/> CAL STD <input type="checkbox"/> LOCAL				2. JULIAN DT		3. TR SER NO		4.					
5. REPORTING ACTIVITY						6. RECEIVED FROM/TRANSFERRED TO ACTIVITY							
5a. AA#			5b. ACTIVITY NAME (Short Title)			6a. AA#			6b. ACTIVITY NAME (Short Title)				
7. QTY		8. TYPE TRANSACTION <input type="checkbox"/> GAIN <input type="checkbox"/> TRANSFER <input type="checkbox"/> SURVEY				9. TIC		10. TOT Q#		11. FSCM		12. SER NO	
13. PART NUMBER						14. NSN				15.			
16. NOMENCLATURE						17. TRANSPORTATION CONTROL NO							
18. ITEM NO		19. RWK CNTRL		20. TIC		21. QTY AUTH		22. LAST TR NO		23. PRINT DT		24.	
25. RE-IDENTIFICATION DATA				25a. FSCM		25b. RE-IDENTIFIED PART NUMBER				25c. TOT Q#			
26. SUBCUSTODY			26a. TYPE		26b. <input type="checkbox"/> ISSUE <input type="checkbox"/> CORRECTION		26c. CAL/PAR/WK/ACT		26d. CAL/PAR/WK/DUE		26e. QTY		
27. ISSUE		27a. DATE		27b. TIME		27c. ORG		27d. W/C		27e. STATUS		27f. RECEIVED BY (Signature, Rank/Rate)	
28. RETURN		28a. DATE		28b. TIME		28c. ORG		28d. W/C		28e. STATUS		28f. RECEIVED BY (Signature, Rank/Rate)	
29. AUTHORITY/COMMENTS/LOCAL USE													

OPNAV 4790/64 (REV. 3-82)      30 010747-001-6000

Figure 3-17: Support Equipment Transaction Report (OPNAV 4790/64) (Sample)

**COMNAVAIRFORINST 4790.2C**  
**15 Jan 2017**

- Block 1 - PROGRAM INDICATOR. Type program allowancing document to which the submittal applies, for example, IMRL and LAMS. Place an "X" in the appropriate box.
- Block 2 - JULIAN DT. Julian date TR originated. (5N)
- Block 3 - TR SER NO. TR serial number consists of a four digit sequential number. (4N)
- Block 4 - Not Used.
- Block 5 - REPORTING ACTIVITY
- Block 5a - AAI. AMMRL activity identifier code of the activity submitting the report. (6A/N)
- Block 5b - ACTIVITY NAME(Short Title) Noun name of the activity identified in block 5a. (26A/N)
- Block 6 - RECEIVED FROM/TRANSFERRED TO ACTIVITY
- Block 6a - AAI. AMMRL activity identifier code of the activity item being reported is received from or transferred to. (6A/N)
- Block 6b - ACTIVITY NAME(Short Title) Noun name of the activity identified in block 6a. (26 A/N)
- Block 7 - QTY. Quantity of items being reported as a gain/transfer/survey/re-identification by this TR. (4N)
- Block 8 - TYPE TRANSACTION. Indicate reason for TR submittal. Place an "X" in the appropriate box.
- Block 9 - T/C. TRANSACTION CODE Identifying the exact nature of the transaction being reported (see NAVAIRINST 13650.1C (NOTAL) or the appropriate SECA instruction to ensure use of the correct code). (2A)
- Block 10 - TOT O/H. Quantity remaining on hand after the adjustment of the quantity reported in block 7. (4N)
- Block 11 - FSCM. Manufacturers or CAGE code for the item being reported. (5 A/N)
- Block 12 - SER NO. Serial number of the item being reported. (10 A/N)
- Block 13 - PART NUMBER. Part number of the item being reported or old part number of the re-identified item. (32 A/N)
- Block 14 - NSN. National stock number of the item being reported. (22 A/N)
- Block 15 - Not used.
- Block 16 - NOMENCLATURE. Noun name of the item being reported. (40 A)
- Block 17 - TRANSPORTATION CONTROL NO. Transportation control number (TCN) used when item is shipped to rework. (19 A/N)
- Block 18 - ITEM NO. Allowancing document line number of item being reported (IMRL, etc). (4N)
- Block 19 - RWK CNTRL. Rework control number assigned by SERMIS. (5 A/N)
- Block 20 - TEC. Type Equipment Code. (4 A/N)
- Block 21 - QTY AUTH. Authorized allowance of the item being reported (from IMRL). (4 A/N)
- Block 22 - LAST TR NO. Last TR serial number for the item being reported. (5N)
- Block 23 - PRINT DT. Current allowancing document print date (YYMMDD). (6N)
- Block 24 - Not used.
- Block 25 - RE-IDENTIFICATION DATA
- Block 25a - FSCM. Manufacturers code for the item being reidentified. (5 A/N)
- Block 25b - RE-IDENTIFIED PART NUMBER. New part number for the reidentification. (4N)
- Block 25c - TOT O/H. Total quantity on hand of the reidentified P/N after reidentification. (4N)
- Block 26 - SUBCUSTODY
- Block 26a - TYPE. Enter the code (R for reportable item on IMRL, N for nonreportable item on IMRL, or X for item not on IMRL). (1A)
- Block 26b - ISSUE or CORRECTION. Place an "X" in the appropriate box.
- Block 26c - CAL/PM/RWK ACT. Noun name of the activity performing the calibration, PM, or rework. (13 A/N)
- Block 26d - CAL/PM/RWK/DUE. Julian date due at the activity performing calibration, PM, or rework. (4N)
- Block 26e - QTY. Quantity of items subcustodied. (4N)
- Block 27 - ISSUE
- Block 27a - DATE. Julian date of issue. (4N)
- Block 27b - TIME. Military time at which the transaction is complete. (4N)
- Block 27c - ORG. Organization code of the individual identified in block 27f. (3 A/N)
- Block 27d - W/C. Work center of the individual identified in block 27f. (3 A/N)
- Block 27e - STATUS. Status code showing the condition of the item being reported. (2/N)
- Block 27f - RECEIVED BY. Signature and rate of the individual accepting the item being issued.
- Block 28 - RETURN
- Block 28a - DATE. Julian date of return. (4N)
- Block 28b - TIME. Military time at which the transaction is complete. (4N)
- Block 28c - ORG. Organization code of the individual identified in block 28f. (3 A/N)
- Block 28d - W/C. Work center of the individual identified in block 28f. (3 A/N)
- Block 28e - STATUS. Status code showing the condition of the item being reported. (2A/N)
- Block 28f - RECEIVED BY. Signature and rate of the individual accepting the item being reported.
- Block 29 - AUTHORITY/COMMENTS/LOCAL USE. For Authority; Command directive authorizing transaction (SERMIS generated number, reference for letter or memo, DTG of msg, etc). For Comments/Local Use; Comments explaining the transaction or information for use with the VIDS boards. (4 A/N)

**NOTE:** Left characters in parenthesis at the end of the block explanation, for example (4N), (6A/N), indicate the maximum field length and alpha, numeric, or alpha/numeric data entries.

**Figure 3-18: Support Equipment Transaction Report Explanation**

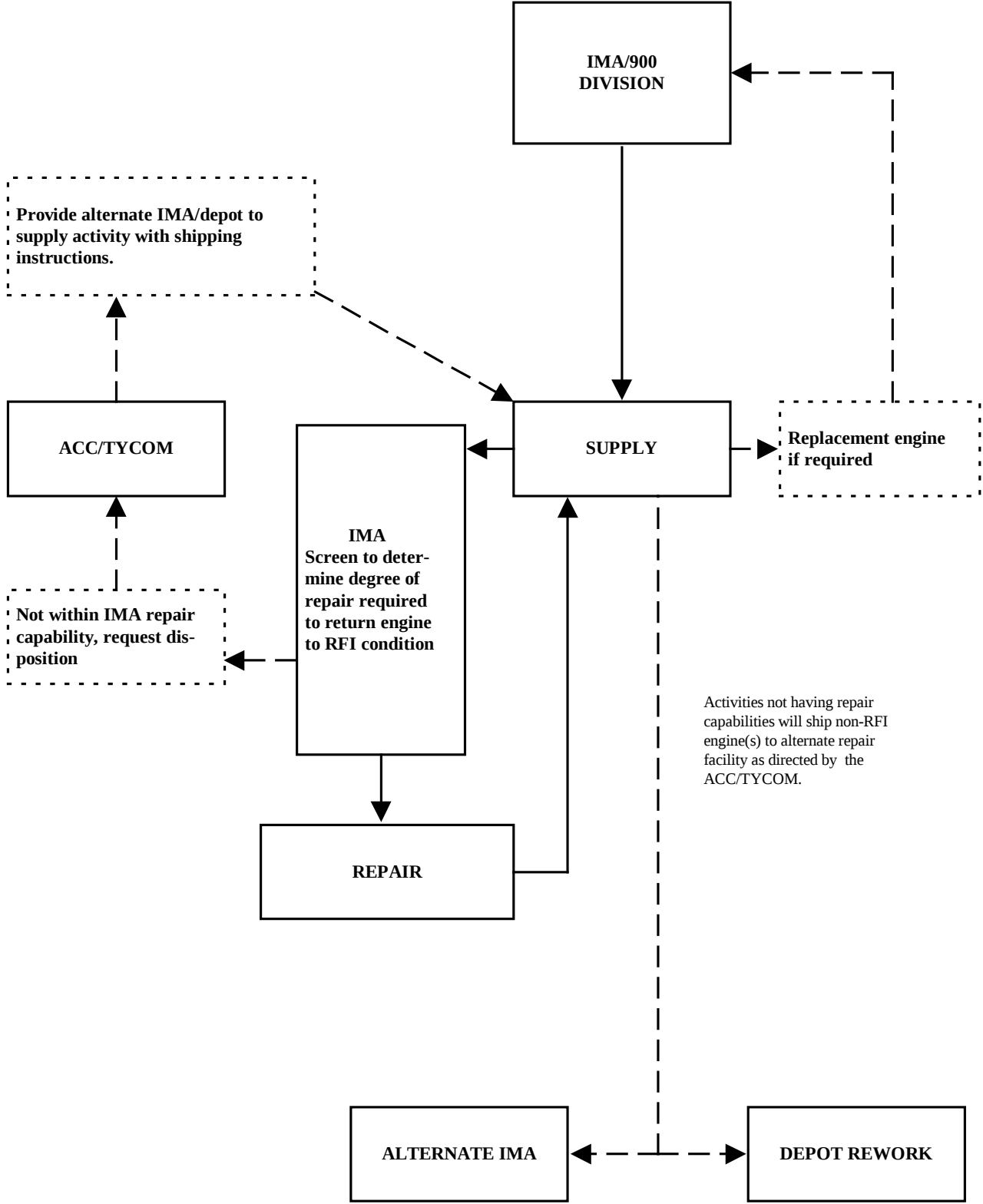


Figure 3-19: Screening Procedures for Non-RFI Engines, APUs, and SEGTEs

**MOBILE FACILITY  
INVENTORY RECORDS  
INVENTORY EQUIPMENT LIST**

- NOTES:** 1. OPNAV 4790/74A containing inventory of furnished materials and equipment are filled in this section. These forms are to be maintained for MFs and major related equipment.  
2. Configuration site generates initial OPNAV 4790/74A Inventory List.  
3. When performing a MF inventory to validate proper configuration, use both the LIR Inventory Record 4790/47A and the applicable MF configuration inventory as outlined in the AG 360MF-CCD-000.

OPNAV 4790/74 (4-15)

**Figure 3-20: Mobile Facility Inventory Record - Equipment List Separator (OPNAV 4790/74)  
(Sample)**

**MOBILE FACILITY  
 INVENTORY RECORD - EQUIPMENT LIST**

MF SERIAL NO		MMF MODEL TYPE																				
ITEM NO.	EQUIPMENT NOMENCLATURE, MODEL AND TYPE	SERIAL NO.	EQUIPMENT CHECKOFF*																LOCATION OR REMARKS			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
CHECK 1 BY	CHECK 5 BY	CHECK 9 BY	CHECK 13 BY																			
CHECK 2 BY	CHECK 6 BY	CHECK 10 BY	CHECK 14 BY																			
CHECK 3 BY	CHECK 7 BY	CHECK 11 BY	CHECK 15 BY																			
CHECK 4 BY	CHECK 8 BY	CHECK 12 BY	CHECK 16 BY																			

OPNAV 4790/74A (08-16)

\* VERIFY EACH EQUIPMENT CHECKOFF BY SIGNATURE OF PERSON PERFORMING INVENTORY.

**Figure 3-21: Mobile Facility Inventory Record - Equipment List (OPNAV 4790/74A) (Sample)**





**MOBILE FACILITY  
LOGBOOK AND INVENTORY RECORD**

**GENERAL INSTRUCTIONS**

**1. ORIGIN.** Logbook and Inventory Records shall be initiated by the configuration activity. OPNAV 4790/51 shall be initiated and placed in Part I for the MF shell, air conditioner, frequency converter, and generators if shipped with the MF or MF complex.

**2. CUSTODY.** The MF Logbook and Inventory Record shall accompany the MF or be maintained in a central library at all times and shall be continuously maintained and updated. Any classified information shall be safeguarded in accordance with applicable security regulations. When an MF is transferred, the Logbook and Inventory Record shall be transferred with the MF.

**3. MAINTENANCE.** The Logbook and Inventory Record is maintained similar to an Aircraft Logbook and is in loose-leaf form. The full identification data and serial number shall be inserted on each form in the spaces provided to ensure ready identification when pages are removed for entries or any other reason.

The Logbook and Inventory Record is arranged in two parts:

OPNAV 4790/51 is filed in Part I and must be maintained for the MF shell and -air conditioner. The Logbook and Inventory Record shall be kept neat and clean; all necessary entries shall be made under the supervision of the cognizant Maintenance Officer. Entries shall be printed in ink or typewritten, except where penciled entries are authorized.

OPNAV 4790/74A and OPNAV 4790/75A are filed in Part II. OPNAV 4790/74A provides a record of equipment installed or in use.

OPNAV 4790/75A provides a record of shortages. Shortages must have appropriate ACC/TYCOM/COMMARFOR's approval prior to transfer.

The depot level maintenance activity shall, upon induction of the MF, screen the entire Logbook and Inventory Record for information pertinent to rework or rehabilitation and shall purge all entries not required as a permanent record.

**4. DISPOSITION.** The Logbook and Inventory Record for MFs stricken from the NAVY/MARINE CORPS list shall be disposed of in accordance with the following procedures:

a. DESTROYED MFs - The Logbook and Inventory Record shall be disposed of locally after necessary investigation and preparation of required reports.

b. Logs and records of MFs and/or equipment which have been involved in an accident(s) resulting in death and/or injury to any person; and/or substantial damage to other than Government property, shall be retained for a period of one year by the operating activity (for defense litigation action) and then forwarded to the Director, Washington National Records Center, General Services Administration, Washington, D. C. 20409.

**5. SIGNATURES.** All signatures required in the MF Logbook and Inventory Record and associated forms and records shall be the personal signature of the person designated by cognizant Commanding Officers for this purpose. All signatures shall be written. Rubber stamp signatures are not authorized. This requirement is waived when a new MF Logbook and Inventory Record is initiated or when old MF Logbooks and Inventory Records are consolidated.

OPNAV 4790/62 ( 8-16)

**Figure 3-23: Mobile Facility Logbook and Inventory Record - General Instructions (OPNAV 4790/62) (Sample)**

MOBILE FACILITY  
LOGBOOK AND INVENTORY RECORD  
TABLE OF CONTENTS

MAJOR RELATED EQUIPMENT RECORDS	OPNAV Form No.
General Instructions .....	4790/62
<b>PART I</b>	OPNAV 4790/63 (SEPARATOR)
<b>Title</b>	
Part I Instructions	4790/63
SE Custody and Maintenance History Record	4790/51
<b>NOTES:</b> 1. The OPNAV 4790/51 is filed in this section. This form is to be maintained for MFs and major related equipment.	
2. OPNAV 4790/51 has replaced CNAF 4790/51, which is obsolete and will be destroyed.	
<b>PART II</b>	OPNAV 4790/73 (SEPARATOR)
Mobile Facility Inventory Records Part II Instructions .....	4790/73A
Inventory Record and Equipment List Separator .....	4790/74
Inventory Record and Equipment List Form .....	4790/74A
Inventory Record of Shortages Separator .....	4790/75
Inventory Record of Shortages Form .....	4790/75A

**NOTE:** OPNAV Forms 4790/74A and OPNAV 4790/75A are filed in this section. These forms are to be maintained for MFs and major related equipment per NAVAIRINST 13670.1.

OPNAV 4790/61 (8-16)

Figure 3-24: Mobile Facility Logbook and Inventory Record - Table of Contents (OPNAV 4790/61)  
(Sample)

**MOBILE FACILITY  
MAJOR RELATED EQUIPMENT RECORDS**

TABLE OF CONTENTS

<b>Title</b>	<b>OPNAV Form No.</b>
1. Support Equipment Custody and Maintenance History Record (Mobile Facility) _____	4790/51
2. MF Scheduled Maintenance MAFs	
3. MF Unscheduled Maintenance MAFs	
4. MF Preservation/ Depreservation Documentation	
5. MF Acceptance/Transfer Checklist (MF)	
6. MF Technical Directives Documentation for MF	
7. Equipment Inspection and Maintenance Worksheet DA 2404	
8. Support Equipment Custody and Maintenance History Record (ECU) _____	4790/51
9. ECU Scheduled Maintenance MAFs	
10. ECU Unscheduled Maintenance MAFs	
11. ECU Preservation/Depreservation Documentation	
12. ECU Acceptance/Transfer Checklist	
13. ECU Technical Directives Documentation	

- NOTES:**
1. This section will contain the above information and forms filled in the order listed. These forms are to be maintained for MF and major related equipment.
  2. OPNAV 4790/51 has replaced CNAF 4790/51, which is obsolete and will be destroyed.

OPNAV 4790/63 (4-15)

**Figure 3-25 (page 1): Mobile Facility Major Related Equipment Records - Table of Contents  
(OPNAV 4790/63) (Sample)**

**MOBILE FACILITY  
LOGBOOK AND INVENTORY RECORD**

**PART I INSTRUCTIONS**

**1. MOBILE FACILITY.** The Logbook and Inventory Record will contain the following information and forms in the specified order for Part I:

SE Custody and Maintenance History Record (OPNAV 4790/51). This form is maintained for the Mobile Facility.

**2. SCHEDULED MAINTENANCE.** One complete cycle of periodic maintenance MAFs shall be maintained as applicable to the MF per the NAVAIR 19-600-152-6-2 Periodic Maintenance Manual. (7day, 30 day, 90 day, 180 day, 360 day)

**3. UNSCHEDULED MAINTENANCE.** Unscheduled maintenance MAFs for the MF shall be retained for 6 months from completion date.

**4. PRESERVATION/DEPRESERVATION.** Not applicable to MF

**5. MOBILE FACILITY ACCEPTANCE/TRANSFER CHECKLIST.** This checklist shall be completed upon receipt or transfer of an MF and shall be maintained on record for one year.

**6. TECHNICAL DIRECTIVES.** Maintain supporting documentation for Technical Directives applicable to the MF manufacture date, which shall include a NAT02 baseline and subsequent NAT02 within one year.

**7. EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET (DA 2404).** Maintain all Equipment Inspection and Maintenance Worksheet (DA 2404) forms along with applicable maintenance action forms detailing corrective action of any primary structural repairs. This documentation is critical to maintain an accurate history of primary structural repairs to the MF.

SE Custody and Maintenance History Record (OPNAV 4790/51)

OPNAV 4790/63 (4-15)

**8. ECU.** This form is maintained for the Environmental Control Unit (ECU).

**9. SCHEDULED MAINTENANCE.** One complete cycle of periodic maintenance MAFs shall be maintained as applicable to the Environmental Control Unit (ECU) installed. Reference applicable NAVAIR ECU Periodic Maintenance Manual.

**10. UNSCHEDULED MAINTENANCE.** Unscheduled maintenance MAFs for the Environmental Control Unit (ECU) shall be retained for 6 months from completion date.

**11. PRESERVATION/DEPRESERVATION.** Maintain one complete preservation cycle if applicable to Environmental Control Unit (ECU).

**12. ENVIRONMENTAL CONTROL UNIT ACCEPTANCE/TRANSFER CHECKLIST.** This checklist shall be completed upon installation or removal of an Environmental Control Unit (ECU) and shall be maintained on record for one year.

**13. TECHNICAL DIRECTIVES.** Maintain supporting documentation for Technical Directives applicable to the Environmental Control Unit (ECU) manufacture date, which shall include a NAT02 baseline and subsequent NAT02 within one year.

**NOTE: These are the minimum documents required for this section.**

**Figure 3-25 (page 2): Mobile Facility Logbook and Inventory Record - Part I Instructions(OPNAV 4790/63) (Sample)**

MOBILE FACILITY  
LOGBOOK AND INVENTORY RECORD

PART II

TABLE OF CONTENTS

Title	OPNAV Form No.
Part II Instructions .....	4790/73A
Inventory Record and Equipment List Separator .....	4790/74
Inventory Record and Equipment List Form .....	4790/74A
Inventory Record of Shortages Separator .....	4790/75
Inventory Record of Shortages Form .....	4790/75A

**NOTE:** OPNAV 4790/74A containing inventory of furnished materials, equipment, and OPNAV 4790/75A containing authorized shortages are filed in this section. These forms are to be maintained for MFs and major related equipment.

Figure 3-26: Mobile Facility Logbook and Inventory Record - Table of Contents (OPNAV 4790/73)  
(Sample)

MOBILE FACILITY  
LOGBOOK AND INVENTORY RECORDS

PART II INSTRUCTIONS

**1. INVENTORY RESPONSIBILITY.** The transferring activity is responsible for a complete inventory of the Mobile Facility and for MF furnished material equipment shortages prior to transfer. To maintain a continuous chain of the MF Logbook and Inventory Record is used as the instrument of transfer. MF's are transferred or accepted only with an MF Logbook and Inventory Record. There may be remote exceptions to this requirement, such as MF's procured for research and development only. Inventories for the MFs at the time of transfer are completed to the mutual satisfaction of both the transferring and accepting activities. In all other instances when an MF is transferred, an inventory of the MF is accomplished based on the items of equipment and material listed in the applicable log or record.

**2. SHORTAGES.** No MF will be transferred with inventory shortage unless approved by the appropriate ACC/TYCOM/MARFOR. The transferring activity makes every effort to locate missing items or procure and install the replacement items necessary to complete the inventory. If the transferring activity is unable to locate or supply missing items, an entry for the missing items is made in the Inventory Record of Shortages. An explanatory statement signed by the transferring activities designated representative is added to this form to indicate authorization by appropriate ACC/TYCOM/MARFOR for shortages. All authorized shortages documented in the LIR will be reported on the transfer naval message receiving activity authority.

**3. SECURITY CLASSIFICATION.** It is desired that the MF Inventory Records be unclassified. However, when classified equipment is installed in the MF and listed in the LIR, the Security Classification, SECRET, or CONFIDENTIAL, is indicated in capital letters immediately following the identifying nomenclature or title. In addition, an asterisk (\*) with a footnote, nomenclature, and title unclassified will be indicated if applicable.

The listing of the classification involved does not normally require classifying the MF LIR. In lieu of this, when the nomenclature or title is classified or the installation of the classified or unclassified equipment is of a SECRET or CONFIDENTIAL nature, the equipment is not listed in the record with other equipment. Such listing is entered on a separate supplemental page with a notation on the Inventory Record and Equipment List Form. To prevent possible security violations, no attempt is made to define the location of the equipment referenced on the Inventory Record and Equipment List Form. If circumstances are encountered that would cause the classified supplemental pages to not be used, the basic record is given a classification commensurate with the highest classification of equipment installed in the MF. Handling of the classified supplemental pages and/or the basic record when classified is per current classification guides.

**4. INVENTORY ITEMS.** The following governs the determination of items to be listed in the MF Inventory Record without regard to whether they are contractor or Government furnished:

a. Items of equipment that are rigidly fixed and considered to be a basic integral part of the MF, such as air conditioners, test panels, test benches, and power rectifiers.

b. Special equipment items essential to the safety of personnel, such as fire extinguishers, fire axes, and battle lanterns.

c. Loose equipment delivered with the MF, such as jacks, butting kits, stairways, lifting slings, power cables, walkways, publications, and wiring diagrams.

d. Items subject to pilferage or readily convertible to personal use, such as typewriters, clocks, intercoms, test equipment, desk lights, and vacuum cleaners.

e. Replacement of MF furnished materials and equipment can typically be accomplished by ordering replacement items through the normal supply channels. Certain items, such as countertops, cabinets, and associated hardware installed at MF configuration sites are not always procurable through normal supply channels. Therefore, it is recommended to procure those items in good reusable condition from survey approved MF's prior to disposal to fill configuration shortages.

f. Fleet activities may contact the configuration site liaisons for questions regarding LIR inventory items or MF drawings.

OPNAV 4790/73A (8-16) BACK

**Figure 3-27: Mobile Facility Logbook and Inventory Records – Equipment List, Part II Instructions (OPNAV 4790/73A) (Sample)**

MOBILE FACILITY  
INVENTORY RECORDS

SHORTAGES

- NOTES: 1. If transferring activity is unable to locate or supply missing items, the notation, "Missing items not available" is entered in the Inventory Record of Shortages.  
2. An explanatory statement signed by the transferring designated representative is added to this form to indicate authority for shortages.  
3. Receiving activity fills shortages through normal supply channels.

SHORTAGES

OPNAV 4790/75 (REV 4/2015)

**Figure 3-28: Mobile Facility Inventory Records – Record of Shortages Separator - Part II (OPNAV 4790/75) (Sample)**



COMNAVAIRFORINST 4790.2C  
15 Jan 2017

OPNAVINST 4790.2 COMNAVAIRFORINST 4790.2 OPNAV M-8000.16					
<b>WORK REQUEST CUSTOMER SERVICE</b>					
PART I: TO BE COMPLETED BY IMA (INTERMEDIATE MAINTENANCE ACTIVITY)					
1. DATE		2. JCN		3. ISSUE DOCUMENT NUMBER	
4. PART NUMBER		5. PART SERIAL NUMBER		6. MANUFACTURE CODE	7. NOMENCLATURE
8. NATIONAL STOCK NUMBER		9. QUANTITY	10. TYPE AIRCRAFT/EQUIPMENT		11. BU/SER NUMBER
12. CATEGORY <span style="float: right;"><i>(Amplify on back of form)</i></span>					
<input type="checkbox"/> NORS		<input type="checkbox"/> NFE		<input type="checkbox"/> WORK STOPPAGE	<input type="checkbox"/> OTHER
13. WORK REQUESTED: JUSTIFICATION FOR WORK REQUESTED. <span style="float: right;"><i>(Attach amplifying instructions if required)</i></span>					
14. CERTIFICATION: I CERTIFY THAT THIS WORK IS BEYOND THE CAPABILITY OF IMA.					DATE
SIGNATURE					
15. FOR FURTHER INFORMATION CONTACT: <i>(Activity and telephone number)</i>			16. REQUIRED COMPLETION DATE	17. AUTHORIZED BY	
PART II: TO BE COMPLETED BY SSC (SUPPLY SUPPORT CENTER)					
18.					
<input type="checkbox"/> LOCAL AREA AVAILABILITY CHECKED		<input type="checkbox"/> SUPPLY AVAILABILITY CHECKED		<input type="checkbox"/> REQUIREMENT SATISFIED FROM ABOVE SOURCES	<input type="checkbox"/> REQUIREMENT FORWARDED TO NADEP FOR ACTION
SSC SIGNATURE					DATE
19. CERTIFICATION/APPROVAL: I CERTIFY THAT THIS REQUIREMENT CANNOT BE SATISFIED FROM OTHER RESOURCES					DATE
SIGNATURE <i>(Supervisor)</i>					
PART III: TO BE COMPLETED BY NADEP (NAVAL AVIATION DEPOT)					
20. RECEIVED BY		20a. DATE	20b. PCN/WORK ORDER	20c. PRIORITY	20d. DATE WORK STARTED
21. ACTION TAKEN					
22a. COMPLETED BY		22b. DATE	22c. INSPECTED BY	22d. SUPERVISOR	22e. MAN-HOURS
22f. EMT					
23. SUPPORTED ACTIVITY NOTIFIED THAT WORK HAS BEEN COMPLETED:			DATE	TIME	CHARGE TO FAN
BY		PERSON NOTIFIED			
24. DISPOSITION					
<input type="checkbox"/> WORK COMPLETED		<input type="checkbox"/> F/J UNIT PROVIDED		<input type="checkbox"/> SUPPORTED ACTIVITY NOTIFIED TO ORDER FROM SUPPLY <i>(Explain in Remarks)</i>	
25. RECEIVED FROM SUPPORTING ACTIVITY: BY				DATE	TIME
26. REMARKS					
27. <input type="checkbox"/> APPROVED		27a. REASON <i>(If work disapproved)</i>			27b. SIGNATURE <i>(Supporting Activity)</i>
<input type="checkbox"/> DISAPPROVED					
OPNAV 4790/36A (REV 1/2015) <span style="float: right;">Page 1 of 1</span>					

Figure 3-29: Work Request Customer Service (OPNAV 4790/36A) (Sample)

**COMNAVAIRFORINST 4790.2C**  
**15 Jan 2017**

OPNAVINST 4790.2 (Series)  
 COMNAVAIRFORINST 4790.2 (Series)

AIRCRAFT TAXI LICENSE			
PART I - REQUEST			
1. NAME - LAST, FIRST, MIDDLE INITIAL:	2. JOB TITLE:	3. DEPARTMENT/DIVISION:	
4. AIRCRAFT TYPE/MODEL/SERIES:	5. UNIT:	6. TYPE OF LICENSE:	
7a. DATE OF WRITTEN EXAM(S):	7b. RESULTS:	8a. ADMINISTERED BY ( <i>Print Name</i> ):	8b. ADMINISTERED BY SIGNATURE:
9a. DATE OF OPERATIONAL EXAM:	9b. RESULTS:	10a. ADMINISTERED BY ( <i>Print Name</i> ):	10b. ADMINISTERED BY SIGNATURE:
PART II - CERTIFICATION			
I certify that I understand my responsibilities as set forth in applicable Wing/MAG instruction, NATOPs manual and COMNAVAIRFORINST 4790.2.			
11a. PRINTED NAME OF INDIVIDUAL:	11b. SIGNATURE DATE:	11c. SIGNATURE OF INDIVIDUAL:	
I certify this member has completed all training and testing requirements and recommend approval.			
12a. PRINTED NAME OF MAINTENANCE OFFICER:	12b. SIGNATURE DATE:	12c. SIGNATURE OF INDIVIDUAL:	
PART III - APPROVING OFFICIAL ACTION			
Member in Part I is authorized to taxi the T/M/S aircraft indicated for a period of one year from this date.			
13a. PRINTED NAME OF COMMANDING OFFICER:	13b. SIGNATURE DATE:	13c. SIGNATURE OF COMMANDING OFFICER:	
ORIGINAL TO: INDIVIDUAL QUALIFICATION CERTIFICATION RECORD.			

OPNAV 4790/191 (04/2016)

**Figure 3-30: Aircraft Taxi License (OPNAV 4790/191) (Sample)**

**COMNAVAIRFORINST 4790.2C**  
**15 Jan 2017**

OPNAVINST 4790.2 (Series)  
 COMNAVAIRFORINST 4790.2 (Series)

AIRCRAFT ENGINE/APU TURN UP LICENSE			
PART I - REQUEST			
1. NAME - LAST, FIRST, MIDDLE INITIAL:		2. RATE/GRADE:	3. DEPARTMENT/DIVISION:
4. AIRCRAFT TYPE/MODEL/SERIES:		5. UNIT:	6a. TYPE OF LICENSE:
			6b. HIGH/LOW POWER:
7a. DATE OF WRITTEN EXAM(S):	7b. RESULTS:	8a. ADMINISTERED BY ( <i>Print Name</i> ):	8b. ADMINISTERED BY SIGNATURE:
9a. DATE OF OPERATIONAL EXAM:	9b. RESULTS:	10a. ADMINISTERED BY ( <i>Print Name</i> ):	10b. ADMINISTERED BY SIGNATURE:
PART II - CERTIFICATION			
I certify that I understand my responsibilities as set forth in applicable Wing/MAG instruction, NATOPs manual and COMNAVAIRFORINST 4790.2.			
11a. PRINTED NAME OF MEMBER:		11b. SIGNATURE DATE:	11. SIGNATURE OF MEMBER:
I certify the member has completed all training and testing requirements. Recommend approval.			
12a. PRINTED NAME OF MAINTENANCE OFFICER:		12b. SIGNATURE DATE:	12c. SIGNATURE OF MAINTENANCE OFFICER:
PART III - APPROVING OFFICIAL ACTION			
Member in Part I is authorized to turn-up the T/M/S aircraft system(s) indicated in Block 6 for a period of one year from this date.			
13a. PRINTED NAME OF COMMANDING OFFICER:		13b. SIGNATURE DATE:	13c. SIGNATURE OF COMMANDING OFFICER:
ORIGINAL TO: INDIVIDUAL QUALIFICATION CERTIFICATION RECORD.			

OPNAV 4790/192 (04/2016)

**Figure 3-31: Aircraft Engine/APU Turn-up License (OPNAV 4790/192) (Sample)**

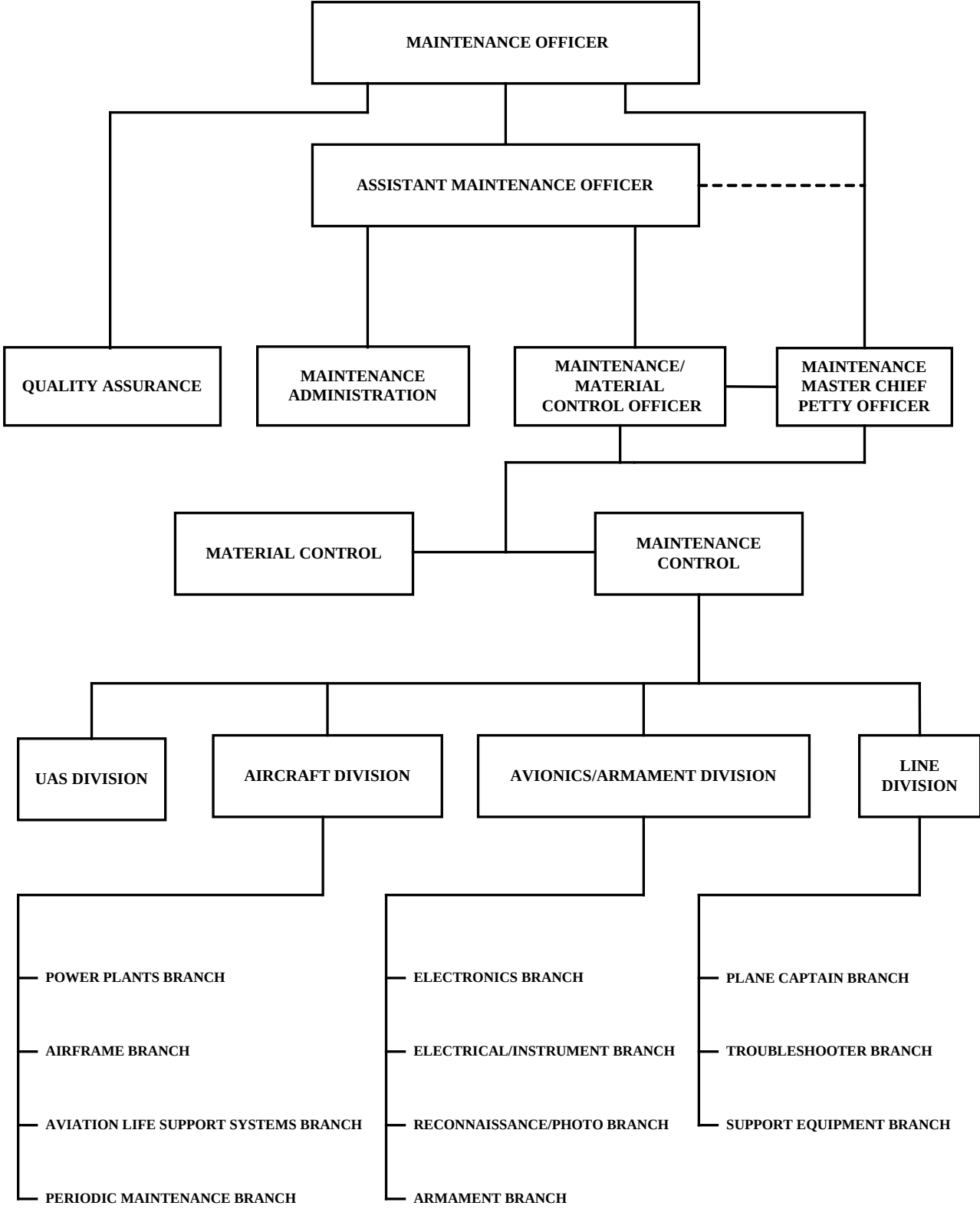
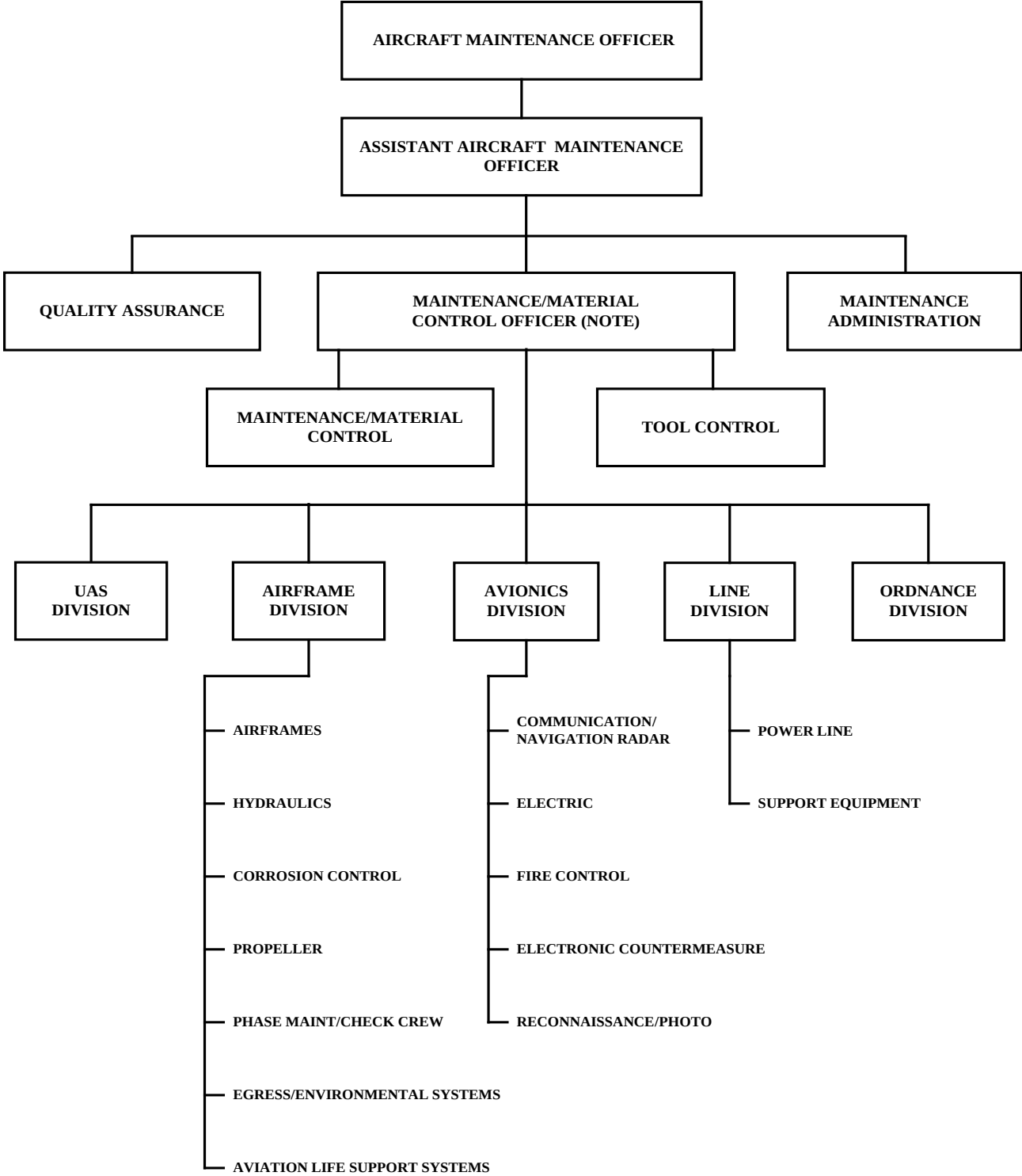


Figure 3-32: O-Level Maintenance Department Line and Staff Relationships (Navy)



**NOTE: Maintenance military occupational specialty required.**

**Figure 3-33: O-Level Maintenance Department Line and Staff Relationships (Marine Corps)**

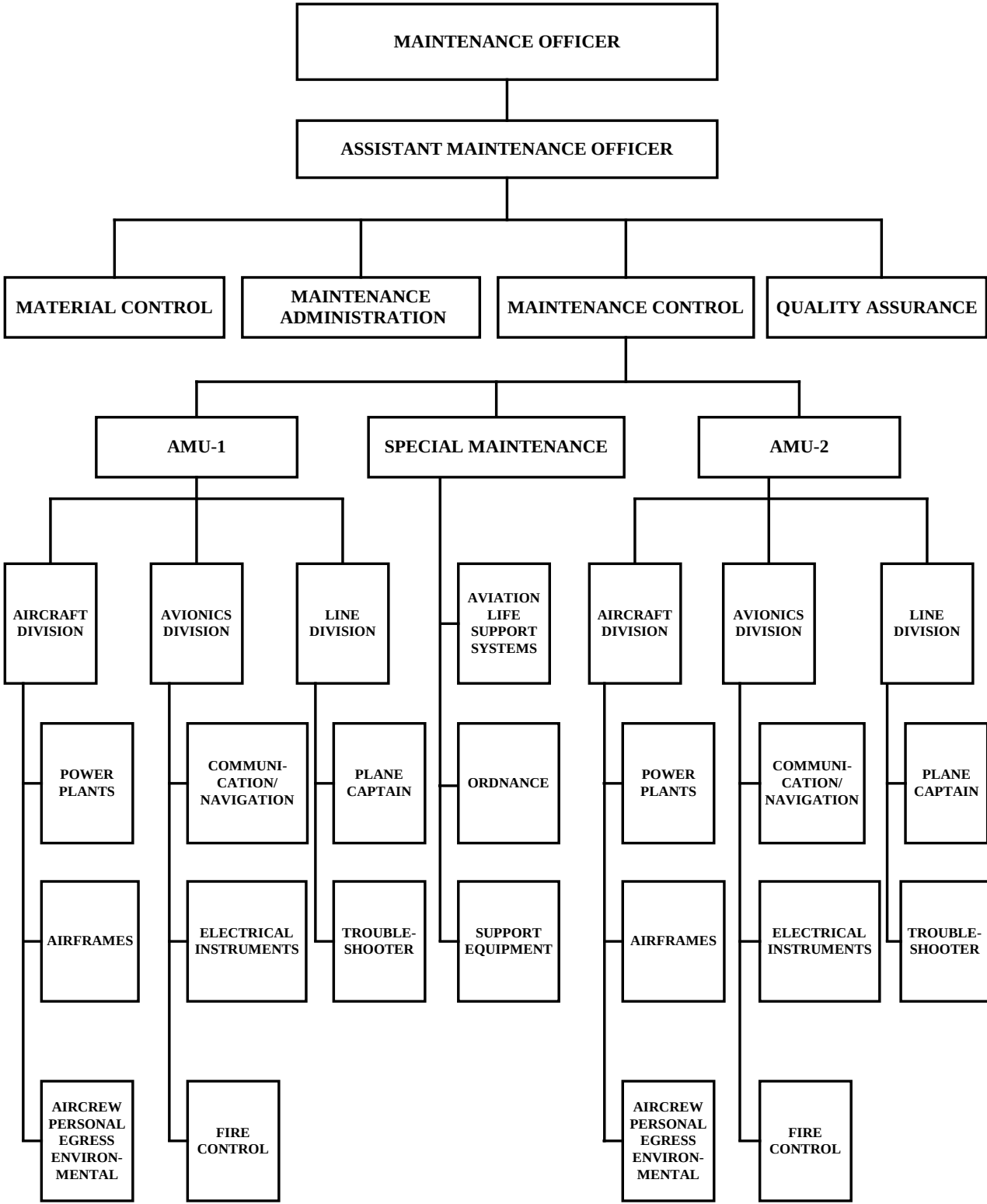
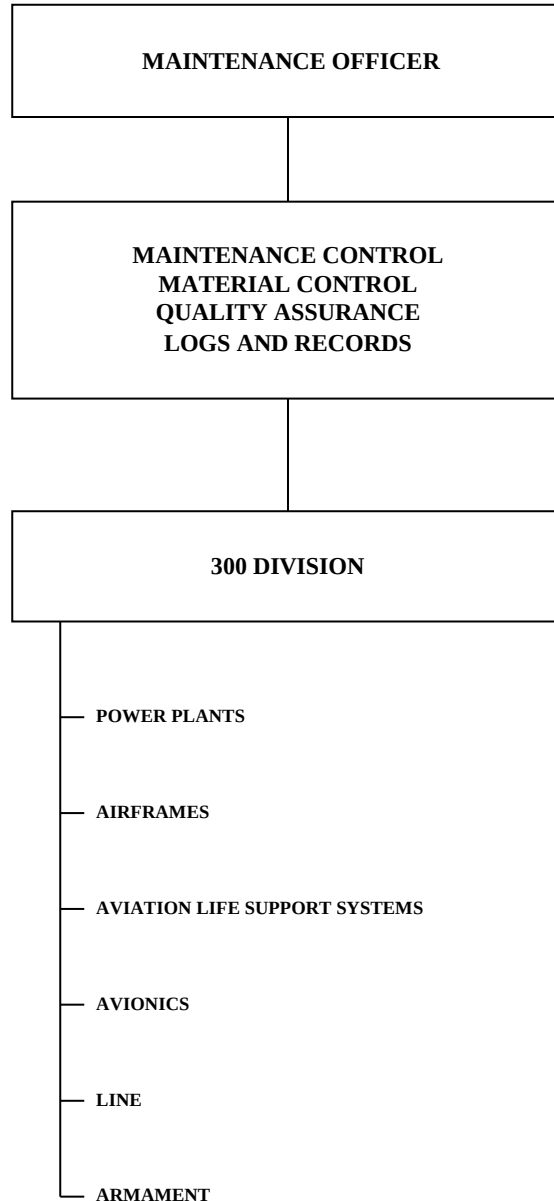
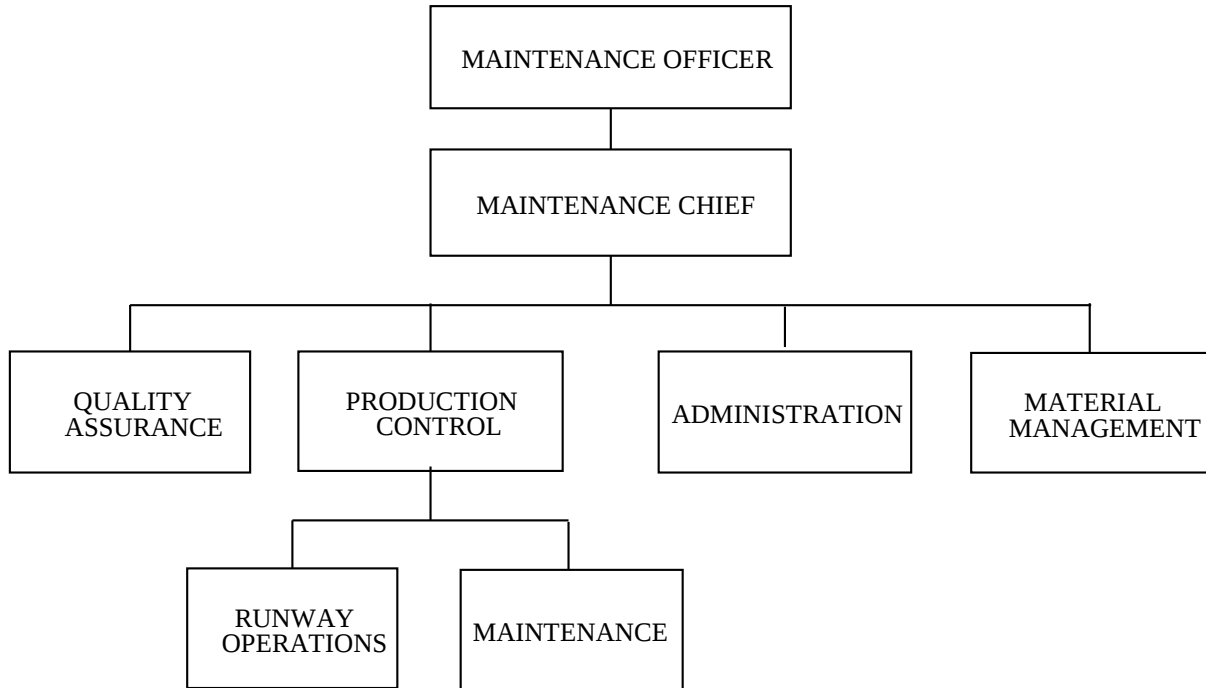


Figure 3-34: O-Level Autonomous Maintenance Unit Concept Line and Staff Relationships



- NOTES: 1. Production branch sections may be segregated as indicated; or, if total personnel number less than 100, may be combined within one branch.
2. Staff functions, for example, Maintenance Control, Material Control, or Quality Assurance, may be combined to more efficiently use staff personnel.
3. This organization structure is not applicable to squadrons or OMDs who's manning document or Table of Organization provides for QA division manning per [Chapter 7](#). The organization structure of [Figures 3-26, 3-27](#), and [Chapter 7](#) applied to such activities.
4. If operating with VIDS, analysis remains a function of QA.

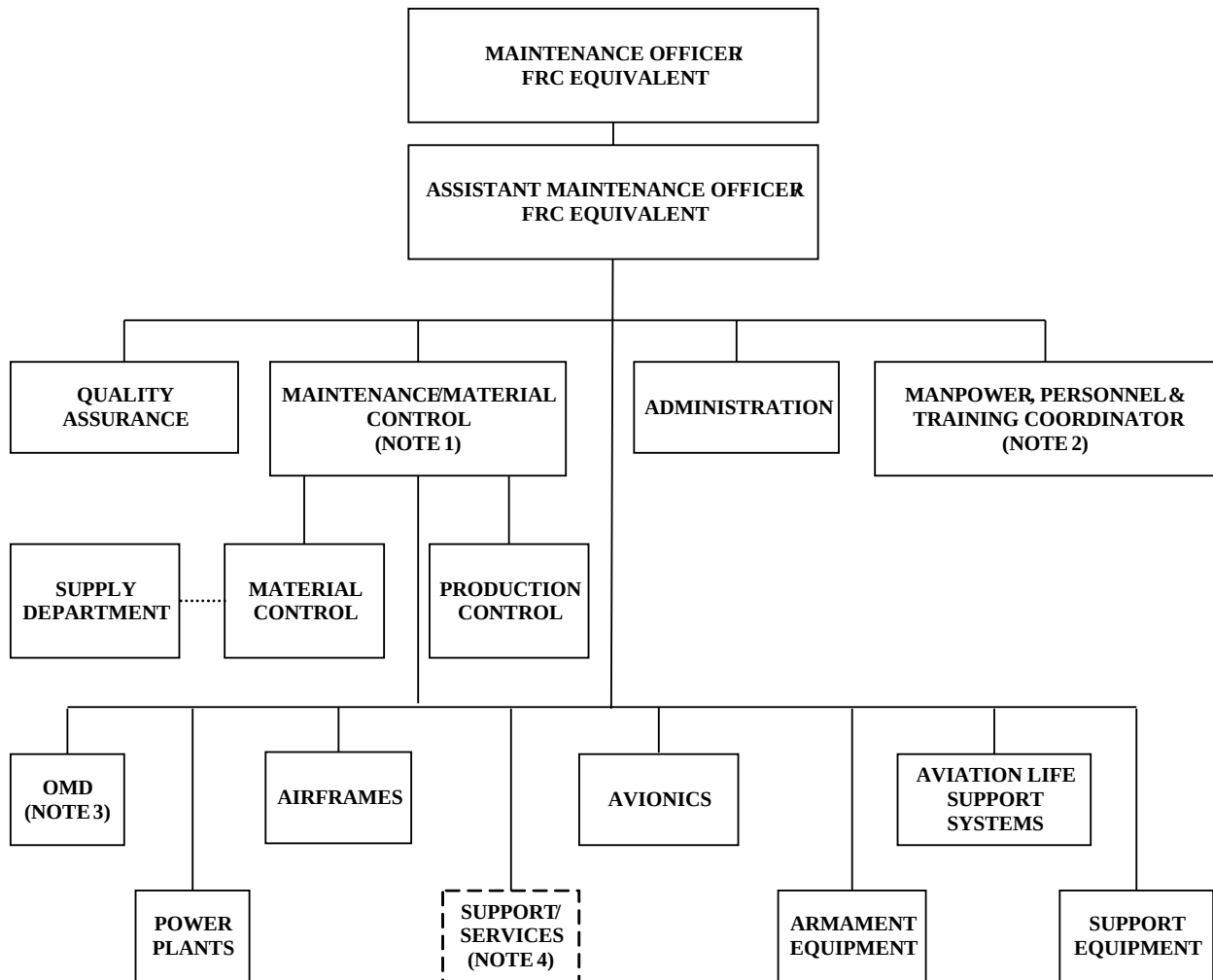
Figure 3-35: OMD Line and Staff Relationships with Four or Less Aircraft



Breakdowns beyond the basic divisions are not illustrated because of the variety of branches possible. Activities shall establish the necessary branches to meet their individual requirements.

**Figure 3-36: O-Level Maintenance Department Organization (EAF)**

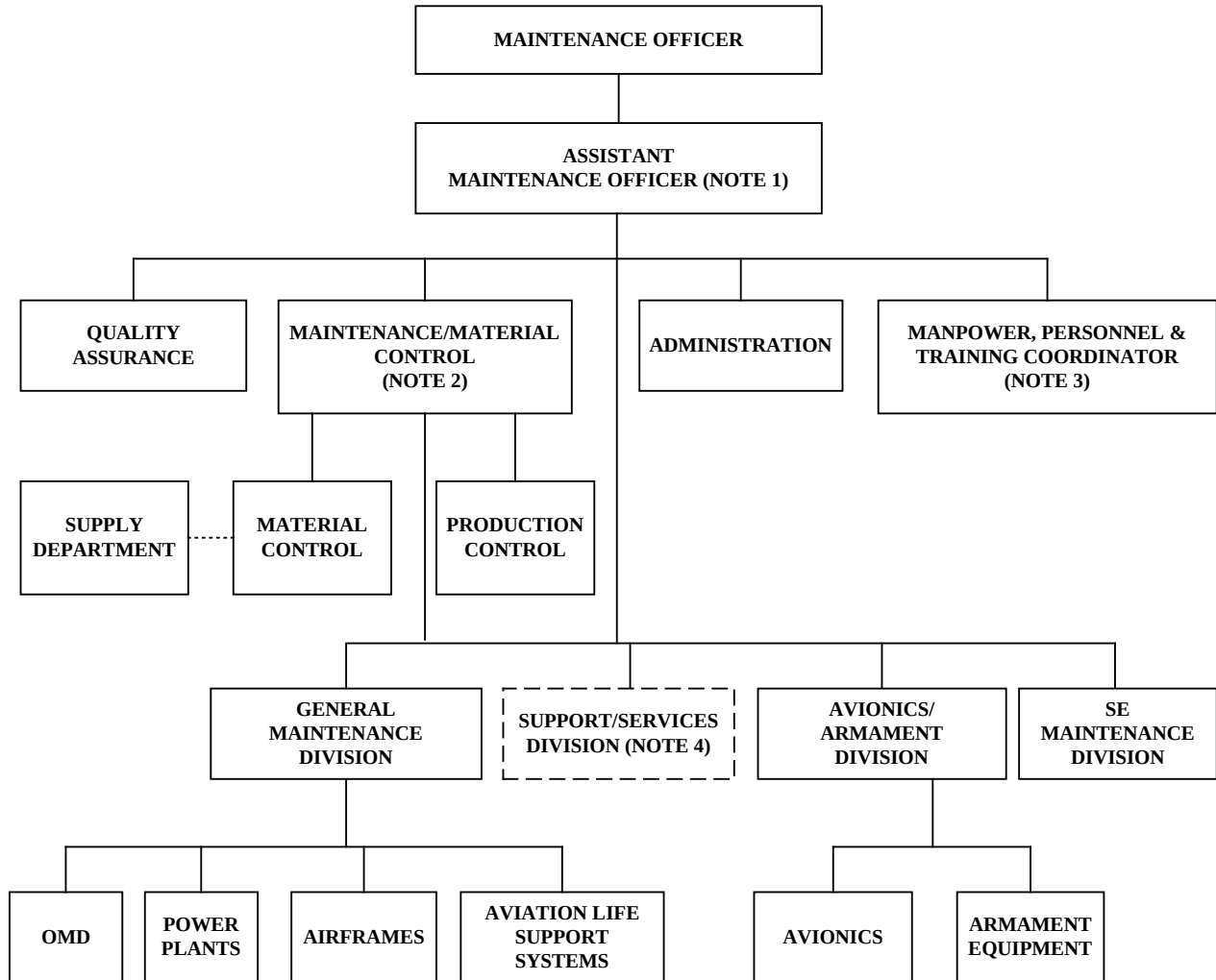




Breakdowns beyond the basic divisions are not illustrated because of the variety of branches possible. Activities will be required to establish the necessary branches to meet their individual requirements. Branches should be established only when more than one work center is involved, for example, Jet Engine Branch with work center J52 engine.

- NOTES:**
1. Direct authority for production matters only.
  2. For larger IMAs that have more than 500 personnel (including TAD personnel). This position is not required for IMAs with less than 500 personnel.
  3. When specific authority has been granted to combine the OMD and IMA, an organizational maintenance division will be established.
  4. This is an optional division. Support services may include IMRL and other functions as determined by the MO

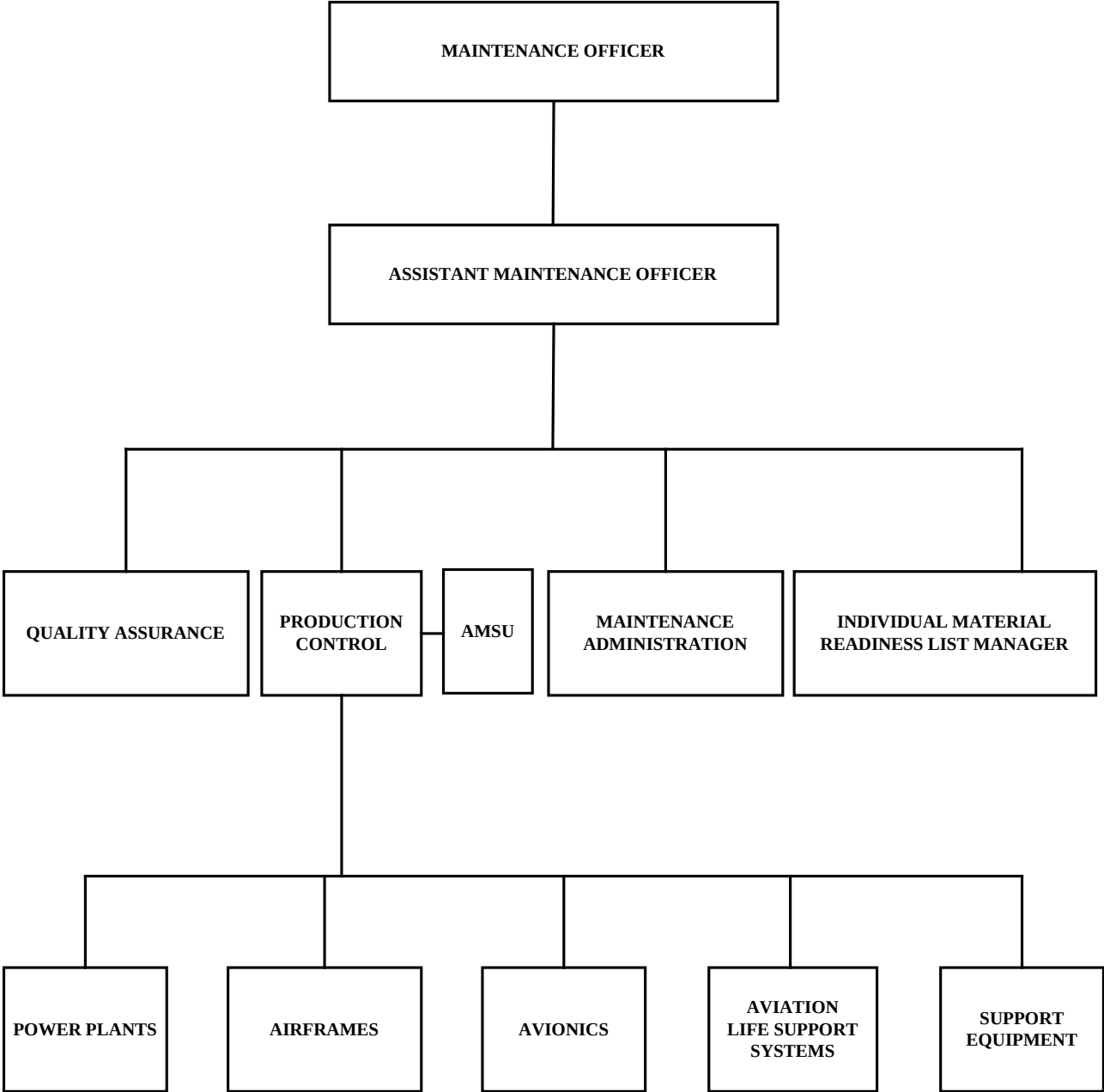
Figure 3-37: IMA OR FRC Site Organization (Ashore)



**NOTES**

1. This organization chart may be authorized by cognizant TYCOM for certain shore activities with limited manpower allowances.
2. Direct authority for production matters only.
3. Authorized for CVs and ashore IMAs larger than 500 personnel.
4. This is an optional division authorized for CVs only. Support services may include IMRL, damage control, and other functions as determined by the MO.

**Figure 3-38: I-Level Maintenance Department Organization (Afloat)**



Breakdowns beyond the basic divisions are not illustrated because of the variety of branches possible. Activities will be required to establish the necessary branches to meet their individual requirements. Branches should be established only when more than one work center is involved, for example, Jet Engine Branch with Work Center J52 engine.

Figure 3-39: I-Level Maintenance Department Organization (Marine Corps)

### Mobile Facility (MF) Acceptance/Transfer Checklist

Generate this form whenever a MF is received and maintain in the LIR. Populate the transfer fields once the MF is transferred to a new activity or approved for disposition to DLA Disposition Services.

#### Mobile Facility/PDB Information

Accepted by: \_\_\_\_\_ UIC: \_\_\_\_\_ Date Received: \_\_\_\_\_  
Transferred to: \_\_\_\_\_ UIC: \_\_\_\_\_ Date Shipped: \_\_\_\_\_  
Reference: \_\_\_\_\_  
Nomenclature: \_\_\_\_\_ Serial Number: \_\_\_\_\_  
Part Number: \_\_\_\_\_ Cage: \_\_\_\_\_  
Configuration: \_\_\_\_\_ TEC: \_\_\_\_\_ Authority: \_\_\_\_\_

#### Mobile Facility/PDB Acceptance

Quality Assurance validates PM and Maintenance references. Signature: \_\_\_\_\_  
Verify a TEC specific subsequent NAT02 is on file within 1 year. Signature: \_\_\_\_\_  
Validate current Technical Directives against 51 Card Sec. IV. Signature: \_\_\_\_\_

**NOTE: Request TD MAF/KIT from TD Coordinator as necessary.**

Make appropriate TD screening entry on 51 Card Section. VI. Signature: \_\_\_\_\_  
Make appropriate custody entry to 51 Card Section I. Signature: \_\_\_\_\_  
Gain asset into SESS Item Add screen appropriately. Signature: \_\_\_\_\_  
Establish PM cycle through SESS Maintain screen as per reference Signature: \_\_\_\_\_

**NOTE: New MF's may be on a 5 year manufacturer CSC inspection.**

Make appropriate gain and PM cycle entry on 51 Card Section. VI. Signature: \_\_\_\_\_  
Generate initial Acceptance Inspection in NALCOMIS. MCN: \_\_\_\_\_ Signature: \_\_\_\_\_  
Generate Support Equipment Accept/Transfer for any IMRL. MCN: \_\_ Signature: \_\_\_\_\_

**NOTES: 1. Not all MF's have IMRL. NA this block if IMRL is not present.**  
**2. Ancillary equipment and calibrated IMRL assets are documented on SE form.**

Figure 3-40 (page1): Mobile Facility (MF) Acceptance/Transfer Checklist

**Mobile Facility (MF) Acceptance/Transfer Checklist (page 2)**

Perform receipt CSC inspection and generate DA Form 2404 if necessary. CSC Signature: \_\_\_\_\_

Perform initial operation check and inventory of hardware. CDI Signature: \_\_\_\_\_

**NOTE: Shortages must be annotated on shortage form OPNAV 4790/75A**

Generate maintenance and corrosion MAF's as necessary. Signature: \_\_\_\_\_

Route and release acceptance message: DTG: \_\_\_\_\_ MFC Signature: \_\_\_\_\_

**Mobile Facility/PDB Transfer**

Generate Transfer Inspection in NALCOMIS. MCN: \_\_\_\_\_ Signature: \_\_\_\_\_

Verify all maintenance and corrosion MAF's are completed if necessary. Signature: \_\_\_\_\_

Inventory equipment listed on OPNAV 4790/74A and secure all items for shipment. CDI Signature: \_\_\_\_\_

Ensure CSC inspection has at least 6 months remaining prior to shipping MF. CSC Signature: \_\_\_\_\_

**NOTES: 1. MF authorized for disposition to DRMO do not require 6 months remaining on the CSC inspection.  
2. MF authorized for disposition to DLA Disposition Services should follow local requirements.**

File Support Equipment Accept/Transfer for IMRL items in LIR. Signature: \_\_\_\_\_

**NOTES: 1. Not all MF's have IMRL. Input an NA in this block if IMRL is not present.  
2. Ancillary equipment and calibrated IMRL assets are documented on SE form.**

Make custody transfer entry on 51 Card Section. I: Signature: \_\_\_\_\_

**NOTE: Locks should be placed on all doors prior to shipment and plug safety hardware applied.**

Delete SESS record and place LIR with all transfer forms in MF. MFC Signature: \_\_\_\_\_

Route and release transfer message: DTG: \_\_\_\_\_ MFC Signature: \_\_\_\_\_

**Figure 3-40 (page 2): Mobile Facility (MF) Acceptance/Transfer Checklist**

**Environmental Control Unit (ECU) Acceptance/Transfer Checklist**

Generate this form whenever an ECU is received and maintain on record in the LIR. Populate the transfer fields once the ECU is transferred to a new activity or approved for disposition to DLA Disposition Services.

**Environment Control Unit (ECU) Information**

Accepted by: \_\_\_\_\_ UIC: \_\_\_\_\_ Date Received: \_\_\_\_\_  
Transferred to: \_\_\_\_\_ UIC: \_\_\_\_\_ Date Shipped: \_\_\_\_\_  
Reference: \_\_\_\_\_  
Nomenclature: \_\_\_\_\_ Serial Number: \_\_\_\_\_  
Part Number: \_\_\_\_\_ Cage: \_\_\_\_\_  
Configuration: \_\_\_\_\_ TEC: \_\_\_\_\_ Authority: \_\_\_\_\_

**ECU Acceptance**

Quality Assurance validates PM and Maintenance references. Signature: \_\_\_\_\_  
Verify a TEC specific subsequent NAT02 is on file within 1 year. Signature: \_\_\_\_\_  
Validate current Technical Directives against 51 Card Section IV. Signature: \_\_\_\_\_

**NOTE: Request TD MAF/KIT from TD Coordinator as necessary.**

Make appropriate TD screening entry on 51 Card Section VI. Signature: \_\_\_\_\_  
Make appropriate custody entry on 51 Card Section I. Signature: \_\_\_\_\_  
Gain assist into SESS Item Add screen appropriately. Signature: \_\_\_\_\_  
Establish PM cycle through SESS Maintain Screen as per Ref. Signature: \_\_\_\_\_  
Make appropriate gain and PM cycle entry on 51 Card Section VI. Signature: \_\_\_\_\_  
Generate initial Acceptance Inspection in NALCOMIS. MCN: \_\_\_\_\_ Signature: \_\_\_\_\_  
Perform initial operational check and inventory of equipment listed on OPNAV 4790/74A. CDI Signature: \_\_\_\_\_

**NOTE: Equipment shortages listed on OPNAV 4790/74A. will get a discrepancy MAF initiated.**

Generate maintenance and corrosion MAFs as necessary. Signature: \_\_\_\_\_

**ECU Transfer**

Generate transfer inspection in NALCOMIS. Signature: \_\_\_\_\_  
Ensure all maintenance and corrosion MAFs are completed if necessary. Signature: \_\_\_\_\_  
Inventory hardware and secure ECU for embark. CDI Signature: \_\_\_\_\_

**Environmental Control Unit (ECU) Acceptance/Transfer Checklist (page 2)**

Make custody transfer entry on 51 Card Section I: Signature: \_\_\_\_\_

Delete SESS record and place LIR with all transfer forms in MF. MFC Signature: \_\_\_\_\_

**ECU Disposition**

Generate disposition MAF as per local procedures. Signature: \_\_\_\_\_

Properly evacuate the refrigerant using Robin Air. EPA Tech: \_\_\_\_\_

Remove accumulator and compressor from ECU. Signature: \_\_\_\_\_

Properly drain removed assemblies for HAZMAT disposal. Signature: \_\_\_\_\_

Certify the evacuated, drained, and cleaned assemblies. EPA Tech: \_\_\_\_\_

**NOTE: Verify EPA certification is clearly written on side of assemblies.**

Complete disposition and all other outstanding MAF's. CDI Signature: \_\_\_\_\_

Delete SESS record and remove ECU from LIR properly PC Signature: \_\_\_\_\_

**Figure 3-41 (page 2): Environmental Control Unit (ECU) Acceptance/Transfer Checklist**