

CHAPTER 10
Naval Aviation Maintenance Program Standard Operating Procedures
(NAMPSOPs)

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CHAPTER 10
Naval Aviation Maintenance Program Standard Operating Procedures
(NAMPSOPs)

10.1 Aviation Maintenance In-Service Training Program (NAMPSOP)

10.1.1 References

- a. NAVMC 4790.1A, Aviation Maintenance Training and Readiness Program.
- b. OPNAVINST 3500.34G, Personnel Qualification Standards Program.
- c. NAVEDTRA 43100-1L, Unit Coordinator's Guide.
- d. NAVEDTRA 43100-2H, PQS Manager and PQS Model Manager's Guide.
- e. OPNAVINST 5100.19E Vol 1, Navy Safety and Occupational Health (SOH) Program Manual for Forces Afloat.
- f. OPNAVINST 5100.23G CH-1, Navy Safety and Occupational Health Program Manual.

10.1.2 Introduction

10.1.2.1 The Aviation Maintenance In-Service Training (IST) Program directs the implementation of activity level training requirements. All activities maintaining aircraft and aeronautical equipment are responsible for ensuring their personnel are adequately trained and skilled in their duties.

10.1.2.2 For Navy personnel, the Qualified and Proficient Technician (QPT) Program provides IST standardization via Naval Education and Training (NAVEDTRA) Personnel Qualification Standards (PQS). QPT contains a structured training syllabus that provides maintenance personnel with the minimum level of proficiency required for their rate and pay grade. QPT expands on prerequisite formal schools and Navy enlisted classification (NEC) training.

10.1.2.3 QPT PQS is tailored to two QPT certification levels that correspond to personnel's skill level that is expected for professional development.

- a. Qualified and Proficient Apprentice (QPA), generally for E-4 and below personnel. QPA includes general and rating specific training on flight line and work place safety, basic aircraft or equipment servicing and inspection, support equipment (SE) licensing, basic maintenance documentation requirements, basic type/model/series (T/M/S) aircraft or I-level equipment maintenance tasks (typically limited to servicing, preventative maintenance, and component removal and replacement), identification, use, and handling of hazardous material, and any additional qualifications necessary to perform at the Apprentice level.

- b. Qualified and Proficient Journeyman (QPJ), generally for E-5 and E-6 personnel. QPJ includes required QPA items for personnel new to a T/M/S aircraft or I-level duty, in-depth T/M/S aircraft and equipment information and job tasks (typically troubleshooting to component level, ready for issue material (RFI) determination, schematics use, end-to-end testing, and rigging or tuning of systems and components), advanced maintenance documentation, shop and shift workload management, and any additional qualifications necessary to perform at the Journeyman level. QPJ certified individuals become instructors and mentors to apprentices.

10.1.2.4 For Marine Corps personnel, the Aviation Maintenance Training and Readiness Program (AMTRP) provides structured IST for each aviation military occupational specialty (MOS). The AMTRP implements

concepts that include system skill proficiency qualifications, designations, and SE licensing requirements. The AMTRP provides maintenance training standardization, identification of training resources, and a standardized method for measuring the manpower readiness of work centers, divisions, and Maintenance Departments. NAVMC 4790.1 directs the AMTRP.

10.1.2.5 PQS is the foundational element of the QPT Program and AMTRP. PQS are structured training syllabi that delineate the minimum knowledge and skills an individual must demonstrate before they are qualified to perform specific maintenance or administrative duties. OPNAVINST 3500.34 directs the PQS Program, and specifies key roles for Commander, Naval Air Systems Command (COMNAVAIRSYSCOM) and Center for Naval Aviation Technical Training Unit (CNATTU). NAVEDTRA 43100-1 and 43100-2 provide specifics on developing and managing PQS.

a. PQS development requires close coordination between the responsible COMNAVAIRSYSCOM Program Office, Naval Education Training Command (NETC) Designated Learning Center (Center for Naval Aviation Technical Training), COMNAVAIRFOR Maintenance Training (Code N422A) lead, and the lead Type Wing and Intermediate Maintenance Activities (IMA). Learning centers designate PQS Managers and Model Managers responsible for the overall quality of specific PQS.

b. The primary training element of PQS is on-the-job training (OJT). OJT consists of personnel performing maintenance tasks under the supervision of qualified personnel. The trainee gains knowledge, skill, and experience by observing and participating in the work.

c. Job Qualification Requirements (JQR) are locally produced PQS type training syllabi for qualifications not covered in a NAVEDTRA PQS.

10.1.2.6 Lectures, Interactive Multimedia Instruction (IMI), and required reading provide the essential knowledge needed for performing certain tasks.

10.1.2.7 The Advanced Skills Management Program (ASM) is an unclassified Management Information System (MIS) that contains job task requirements, documents completed training, qualifications, certifications, duty or billet assignments, and tracks personnel progress in completing QPT or AMTRP. ASM is the primary training database for Navy and Marine Corps O-level and I-level maintenance activities.

10.1.3 Requirements

10.1.3.1 QPT

Navy personnel performing duties covered by the QPT Program must complete the QPT certification commensurate with their duties and paygrade. Completion of only one QPT certification level PQS is adequate, if the related work is clearly aligned to the QPA or QPJ certification level.

NOTE: Navy Type Wings operating the F-35C may establish qualification programs modeled after the Marine Corps AMTRP. Guidance must be published in a Wing instruction.

10.1.3.2 AMTRP

Marine Corps personnel must complete the AMTRP requirements for their MOS.

NOTE: QPT and AMTRP certifications may be used as qualification elements for attaining certain job specific, by name designations or licenses. However, a QPT or AMTRP certification will not be used as a substitute for designation or licensing; for example, designation as a Plane Captain, Collateral Duty Inspector (CDI), Quality Assurance Representative (QAR), or Safe for Flight (SFF), or licensing for auxiliary power unit (APU), or engine turn-up.

10.1.3.3 JQR

Qualification for a maintenance duty not covered by the QPT Program, AMTRP or a NAVEDTRA PQS must be conducted per a published JQR. The JQR must include (as applicable):

- a. Formal training courses (CNATTU and D-level) required.
- b. Required reading.
- c. IMI.
- d. Related general qualifications, for example, flight deck firefighting and cardiopulmonary resuscitation (CPR).
- e. SE license requirements.
- f. OJT in specific maintenance and administrative tasks related to the job. [Figure 10.1-1](#) provides an example of an OJT syllabus.

10.1.3.4 OJT

OJT will be performed under the supervision and instruction of qualified and designated personnel. Designated qualifiers will sign-off completion of tasks (line items), only if the individual demonstrates thorough knowledge of and a practical application of the task.

- a. As applicable, OJT will include:
 - (1) General administrative duties, for example, work order (WO) or maintenance action form (MAF), and logs and records entries.
 - (2) Use of technical manual, reports, and reference material.
 - (3) Use of tools and test equipment.
 - (4) Inspection and maintenance procedures.
 - (5) General and T/M/S or equipment specific corrosion control inspection, treatment and prevention procedures.
 - (6) Quality assurance (QA) certification requirements.
 - (7) Post task question and answer session to assess the trainee's level of comprehension.

NOTES: 1. The preferred method of OJT is hands-on performance of the task. Simulation may be used when it is impractical to perform the actual task.

2. D-level activities must follow employee development programs and civil service guidelines for preparing Individual Development Plans (IDP), including Apprentice and Journeyman level artisans.

3. D-level activities may document training using ASM or paper training and qualification record.

- b. OJT must be conducted and documented in a task until the trainee is qualified. Supervisors will recommend final qualification only when confident the individual is knowledgeable and skilled in that area.

Once the Work Center Supervisor certifies an individual as qualified in a task, OJT documentation for that task is no longer required.

NOTES: 1. Naval Aviation Logistics Command Management Information System (NALCOMIS) download may be used to document completion of an OJT task unless specified to be documented in a paper or electronic training document, for example, a QPT PQS syllabus.

2. Refresher training in technical or administrative procedures is required, whenever personnel demonstrate a lack of knowledge or skill in task areas previously qualified in.

10.1.3.5 Lesson Guides and IMI

a. Lesson guides or IMI will be used to conduct non-OJT maintenance training. Lesson guides must be based on technical references (technical manuals, Interactive Electronic Technical Manual (IETMs), COMNAVAIRSYSCOM manuals, or instructions) or policy directives, such as the Naval Aviation Maintenance Program (NAMP), COMNAVAIRSYSCOM, or Type Commander (TYCOM) instructions. Written lectures are required only if the material in IMI, videos, manuals or instructions is insufficient for the presenter to cover the topic.

NOTES: 1. A lesson guide is not required if the topic is fully covered by IMI.

2. IMI is available on Navy eLearning at (<https://www.aas.prod.nel.training.navy.mil>). A list of In-Service training courses is also available by navigating to: Course Catalog, Navy Learning Centers and Programs, Center for Naval Aviation Technical Training (CNATT), and then In-Service.

b. Lesson guides must include the following elements, as a minimum:

- (1) Lecture number.
- (2) Time to conduct the lesson.
- (3) Date prepared.
- (4) Date reviewed.
- (5) Prepared or reviewed by.
- (6) Title.
- (7) Objective.
- (8) Instructional aids (if required) and where they can be obtained.
- (9) References.

(10) Presentation. If the lesson is covering a procedure in a maintenance technical manual or instruction, the presentation section will state, "Cover the procedures of (reference) with emphasis on (primary points)". All safety precautions, emergency procedures, and QA requirements must be thoroughly covered.

(11) Summary. As a minimum, the summary must include any safety precautions and emergency procedures covered in the lesson.

(12) Question and answer period.

10.1.3.6 Required Reading

Information directed to be read must be logged on the Required Reading and Maintenance Information Record (OPNAV 4790/34) (Figure 10.1-2). The reading material will be maintained in a readily accessible Required Reading File (hardcopy or electronic). A Required Reading Cross-Reference Locator Sheet will be used to list the location of any reading material not feasible to be maintained in the file. For large publications and instructions, the Required Reading Cross-Reference Locator Sheet will itemize the specific chapters and paragraphs required to be read. Information no longer required to be read will be purged from the file.

10.1.3.7 NAMP Indoctrination and Refresher Training

a. NAMP Indoctrination Training must be provided to personnel reporting for their first aviation assignment, and to experienced personnel reporting from duty with a non-aviation command. NAMP Indoctrination Training must be:

- (1) Completed within 45 days of reporting to the Maintenance Department.
- (2) Taught by a program expert, normally the Program Manager, Program Monitor or QAR, using the NAMP Indoctrination Training Sheet (Figure 10.1-3) as a guide.
- (3) Recorded on the NAMP Indoctrination Training Sheet (Figure 10.1-3) in the individual's qualification/certification record per paragraph 10.1.3.9.

NOTE: NAMP Indoctrination Training does not replace qualification training requirements for collateral duties, for example, Dispersed Technical Publications Librarian (DTPL) or Work Center Tool Control Petty Officer. Training specific to the requirements of a collateral duty must be provided prior to assignment.

b. NAMP Refresher Training is required only if specifically directed in a NAMPSOP or other area of the NAMP. NAMP Refresher Training is also required upon release of an updated NAMP (revision or change), for the areas affected by the update.

10.1.3.8 Navy Occupational Safety and Health (NAVOSH) and Safety Training

All personnel assigned to the Maintenance Department must receive NAVOSH and Safety Training applicable to their duties. NAVOSH and Safety Training requirements are extensive. Each command must review OPNAVINST 5100.19 and OPNAVINST 5100.23, and complete the minimum training requirements applicable to their operating environment. Figure 10.1-4 provides an example for documenting NAVOSH and Safety Training.

NOTE: Activities may elect to manage NAVOSH and Safety Training with Enterprise Safety Application Management System (ESAMS), which is hosted by Commander Navy Installations Command. Activities using ESAMS to document NAVOSH and Safety Training do not have to document the same training in ASM or maintain duplicate hardcopy records.

10.1.3.9 Individual Qualification/Certification Record

a. ASM serves as the Individual's Qualification/Certification Record in commands that have completed ASM implementation.

- (1) An Individual Qualification/Certification Record must be initiated in ASM for each enlisted member of the Maintenance Department and any personnel assigned outside the Maintenance Department that require a NAMP qualification, license, certification, or designation.

(2) All letters of designation, qualification, certification, course completion, medical certification, and completed PQS and JQR will be filed in the individual's qualification/certification record.

NOTES: 1. Navy activities are not authorized to use ASM for documenting Explosive Handling Personnel Qualification and Certification Program training requirements.

2. Duplicate paper records and forms are not authorized in activities using ASM. In the event a qualification/certification equivalency within ASM does not fulfill the requirements of the NAMP, the command's ASM Fleet Administrator will contact the Model Manager for resolution. Paper records may be used until the ASM deficiency is corrected.

3. Scanned images of individual training documents are not required to be maintained in ASM once the subject course, qualification, or license has been signed electronically within ASM.

b. Activities not using ASM must maintain a hardcopy Individual Qualification/Certification Record with the following mandatory forms and formats.

(1) Left Side (Figure 10.1-5) will contain current letters and certificates of designation, in the following order:

(a) Quality Assurance Representative/Inspector Recommendation/Designation (OPNAV 4790/12) (Figure 7-2) and all current designation letters/certifications/qualifications.

(b) Current medical certifications required for duties, for example, audiograms, X-ray screening, laser eye testing, flight deck physical, and CPR certification.

(c) Course completion certificates, for example, CNATTU completion letters and certificates, including SE Phase I and Phase II training.

(d) PQS completion certificates, for example, NAVPERS 1070/604 for shipboard damage control, maintenance and material management (3M), and completed JQR.

(2) Right Side (Figure 10.1-6) will contain billet descriptions and assignments and maintenance training history, in the following order:

(a) Billet descriptions and assignments.

(b) NAMP Indoctrination Training Sheet (Figure 10.1-3).

(c) Maintenance training syllabus.

(d) NAVOSH (for current and past 4 years) and Safety Training (Figure 10.1-4).

(e) Egress/Explosive System Checkout Certification (if applicable).

NOTE: A hardcopy qualification/certification record will only contain documents required by the individual to perform their current duties. All other documents will be given to the individual for their personal file.

c. Individual Qualification and Certification Record Transfer Procedures:

(1) Transfer between Commands using ASM. The transferring command will perform Permanent Change of Station (PCS) check out in ASM upon transfer of each individual. The gaining command will perform PCS check in upon reporting.

(2) Transfer from ASM Command to Non-ASM Command. The ASM command will transfer the electronic version onto a CD in pdf format. Once the CD record is created, the ASM Fleet Administrator will PCS check out and PCS check in the record to the non-ASM unit.

(3) Transfer from Non-ASM Command to ASM Command. The Non-ASM command will scan and make a CD copy of the entire training jacket and provide it to the transferring individual. The ASM command will enter the individual's qualification and certifications into ASM when the individual reports.

10.1.4 Responsibilities

10.1.4.1 Type Wings, Marine Aircraft Wing (MAWs), and Navy IMA:

a. (MAWs) Coordinate and assist activities in implementing the maintenance training outlined in the AMTRP.

b. (Type Wings) Coordinate with the responsible COMNAVAIRSYSCOM Program Office and CNATT to maintain a current PQS for each QPT certification level for each rating and T/M/S aircraft supported.

NOTE: PQS correction or change recommendations will be emailed to the PQS Model Manager using the PQS Feedback form located on the last page of the PQS package.

c. (Navy IMAs) Coordinate with the responsible COMNAVAIRSYSCOM Program Office and CNATT to maintain a current PQS for each QPT certification level for each I-level rating and work center.

d. (All) Publish JQRs and supporting lectures for any duty or function not adequately covered by QPT or AMTRP syllabus or NAVEDTRA PQS. JQRs will include the minimum elements specified in [paragraph 10.1.3.3](#).

e. (All) Publish a list of NAVOSH and Safety training requirements ([Figure 10.1-4](#)), tailored to T/M/S maintenance and operational environments.

f. (All) Review and update QPT/AMTRP/JQR and other training requirements every 12 months, or sooner if changes or modifications to related systems or components have occurred.

g. (Type Wings and MAWs) Designate personnel to act as Model Manager and Developer for the T/M/S Master Task List (MTL), accreditations and test banks, and for review of ASM task lists and tests for currency and adequate content.

NOTES: 1. Training Education Command (TECOM) Aviation Standards Branch is the controlling activity for Marine Corps Aviation Maintenance Training changes and updates to ASM. TECOM Aviation Standards Branch will manage and coordinate updates to Marine Corps training task lists and test data banks.

2. MAWs will review and consolidate submissions from their activities and forward to TECOM Aviation Standards Branch for action.

3. Navy Model Managers and Developers must complete the NAVEDTRA PQS 43401 Advanced Skills Management (305) Model Manager Watch Station.

h. (Type Wings and Navy IMAs) Manage the ASM database and system security as follows:

(1) Assign, modify, and delete user access privileges and passwords.

(2) Review the accuracy of ASM database files.

- (3) Troubleshoot user problems and submit trouble tickets.
- (4) Publish a contingency plan for procedures during ASM system downtime.
 - i. (Type Wings and Navy IMAs) Provide COMNAVAIRFOR Maintenance Training (Code N422A) with the number of F-School and T-School quotas required for each assigned unit identification code (UIC), for publishing in the Fleet Training Management and Planning System (FLTMPs).
 - j. (All) Participate in Training Requirement Reviews (TRR).

10.1.4.2 Maintenance Officer (MO):

- a. Designate the Assistant Maintenance Officer (AMO) as the Aviation Maintenance IST Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.
- b. Designate an E-6 or above as the ASM Fleet Administrator. Commands operating detachments must also designate an E-4 or above to act as the Detachment ASM Fleet Administrator during the deployment period only.
- c. Designate qualifiers for QPT, AMTRP, PQS, and JQR task areas.
- d. If managing NAVOSH or Safety Training within ESAMS per [paragraph 10.1.3.8](#), designate an ESAMS Coordinator, with command level administrative rights, responsible for maintaining the currency of the ESAMS database.
- e. Publish local command procedures (LCP) per [Appendix D](#), if required to direct geographic, T/M/S specific, or command directed actions for maintenance training not addressed in this NAMPSOP or Wing LCP. O-level LCPs must be submitted to the Wing or MAW for consideration of incorporation in a Wing LCP.

10.1.4.3 Aviation Maintenance IST Program Manager:

- a. Manage maintenance training for the Maintenance Department.
- b. (Deploying activities) Develop and track the accomplishment of a Deployment Turnaround Maintenance Training Plan with the specific training requirements and personnel proficiency goals required to meet the operational events of the turnaround cycle and deployment. As a minimum, the plan will identify qualification requirements (number and type of QARs and CDIs, number of personnel qualified as Plane Captains, Paint and Final Finish, etc.) and required quotas for training courses.
- c. (Non-deploying activities) Develop and track the accomplishment of an Annual Training Plan with specific training requirements and personnel proficiency goals required to sustain the Maintenance Department. As a minimum, the training plan must identify qualification requirements (number and type of QARs and CDIs, number of personnel qualified as Plane Captains, Paint and Final Finish, etc.) and required quotas for training courses. Commands with both a non-deploying element and deploying elements must develop an annual training plan that encompasses non-deploying and deploying elements.
- d. Obtain quotas and prioritize attendance of formal training courses.
- e. Publish a Monthly Training Schedule in the MMP or a separate document, to include:
 - (1) Maintenance training requirements for the month.

- (2) Formal schools and attendees scheduled for the month.
 - (3) NAMP Indoctrination Training schedule.
 - (4) NAVOSH and Safety Training requirements.
 - (5) Current list of QPT, AMTRP, PQS, and JQR qualifiers.
- f. Monitor QPT and AMTRP qualification progress of each individual and the overall percentage certified for each work center.
- g. (O-level) Submit ASM software discrepancies and ASM Master Task List (MTL) change recommendations to the Type Wing or MAW coordinator.
- h. Review personnel documents (Career Management System and Interactive Detailing, Activity Manning Document, and PCS orders) and verify incoming personnel either possess the requisite skills (NEC or MOS) or will receive training to qualify for the billet. If incoming personnel do not have required skills, coordinate with manpower and training activities to resolve deficiencies.
- i. Develop lesson guides for topics not covered by IMI or Type Wing or MAW lessons per [paragraph 10.1.3.4](#).
- j. (Navy O-Level and I-level) Utilize the FLT MPS Command 12 Month Training Plan and associated FLT MPS ADHOC reports to manage accomplishment of F-School and T-School graduate requirements.
- k. (O-level) Forward discrepancies in QPT OR AMTRP content to the respective Type Wing or MAW for review.
- l. Maintain a program file to include:
- (1) POCs.
 - (2) Program related correspondence and message traffic.
 - (3) References or cross-reference locator sheets.
 - (4) Most current Computerized Self Evaluation Checklist (CSEC) assessment.

10.1.4.4 ASM Fleet Administrator:

- a. Complete the following training (as applicable):
 - (1) NAVEDTRA PQS 43401 Advanced Skills Management (301) Basic ASM Administrator Watch station.
 - (2) NAVEDTRA 43401 Advanced Skills Management (302) ASM Remote Administrator Watch station.
- b. Manage the ASM program within the activity, and assist the Program Manager, Type Wing Manager/Developer (O-level), and site representative in matters pertaining to ASM.
- c. Provide ASM training to personnel. If needed, contact ASM Site Representatives or the ASM Help Desk to request training from the ASM Support Team. Video teleconference and Web based training are also available.

d. Submit ASM software discrepancies and MTL change recommendations to the Aviation Maintenance IST Program Manager.

NOTE: O-levels are not authorized to make ASM MTL changes without Type Wing approval. TECOM Aviation Standards Branch is the approval authority for Marine Corps ASM changes.

- e. Monitor defect reports and correspond with the ASM Help Desk for resolution (as applicable).
- f. Maintain ASM system security per SECNAVINST 5211.5.
- g. Assign, modify, or delete ASM user access privileges and passwords.
- h. Download NALCOMIS ADHOC Queries into ASM each week.
- i. Perform ASM PCS check out or in when individuals transfer or report.

10.1.4.5 Sea Operational Detachment (SEAOPDET) Coordinator (Navy):

Schedule, coordinate, and track completion of training requirements to qualify SEAOPDET personnel for their deployed billet.

10.1.4.6 Division Officers:

- a. Perform an initial review of each Individual's Qualification/Certification Record within 30 days of the member reporting to the division.
- b. Review Work Center Supervisor quarterly Qualification/Certification Progress Reports.
- c. Review each member's QPT or AMTRP individual training syllabus prepared by Work Center Supervisors, and verify the syllabus has been appropriately tailored for past experience and training.

NOTES: 1. QPT or AMTRP training syllabus and quarterly progress reviews may be delegated to the Division or Branch Chief.

2. For D-level activities, supervisors are responsible for reviewing IDP progress.

- d. Brief newly reporting personnel on QPT, AMTRP, PQS, and JQR qualification requirements and the expected completion timelines required for career progression.
- e. Review NAMP compliance audits, 3M summaries, ASM reports, and direct refresher training when the data indicates a deficiency in knowledge or skill.
- f. Verify division training is conducted per the training schedule.
- g. Monitor projected personnel attrition vs. projected numbers of qualified personnel, and verify a sufficient number of qualified personnel will be available to support the division's workload.
- h. Report division training and qualification status to the Aviation Maintenance IST Program Manager.
- i. Submit recommendations for changes to ASM MTL and test question data banks to the ASM Fleet Administrator, as needed, to maintain currency related to division duties.

10.1.4.7 Work Center Supervisors:

- a. Track completion of work center personnel training.

- b. Verify training, qualifications, and certifications are documented in each Individual's Qualification/Certification Record within 5 working days of completion.
- c. Review the Individual's Qualification/Certification Record of newly reported personnel and recommend a training syllabus to the Division Officer within 15 days of their reporting.
- d. Provide a quarterly Qualification/Certification Progress Report to the Division Officer for each work center member. The report must note whether the member's progress is satisfactory and provide recommendations for any changes to their syllabus deemed necessary.
- e. Nominate PQS, JQR, QPT, and AMTRP qualifiers based on technical knowledge and skills.
- f. Assign qualified personnel to conduct OJT.
- g. Sign off qualification in OJT task areas only if the individual has demonstrated sufficient knowledge and skill to independently perform the task.
- h. Recommend personnel for final qualification, certification, or designation, only when confident the nominee is knowledgeable and skilled in the area.
- i. Direct refresher training for personnel that demonstrate a lack of knowledge or skill in areas they were previously signed off as qualified.
- j. Coordinate with the ASM Fleet Administrator to provide ASM training to work center personnel.
- k. Review syllabi, lesson guides, and IMI annually to verify material is relevant and current. Submit discrepancies to the Aviation Maintenance IST Program Manager for forwarding to the respective Type Wing or MAW for resolution.
- l. Review the Required Reading File monthly to ensure the material is current and work center personnel are logging their progress ([Figure 10.1-2](#)).
- m. Provide transferring individuals with their Individual Qualification/Certification Record and original designation letters prior to transfer, per [paragraph 10.1.3.11d](#).

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15 Jan 2017

OJT SYLLABUS: 9101

NAME: _____

A/S32A-45 MID-RANGE TOW TRACTORS

EQUIPMENT	INST	DATE	INST	DATE	INST	DATE	W/C SUP	DATE
TA-75 A/B								
PMs								
Carburetor Adjustment								
R&R Carburetor								
Adjustment Rocker Arms								
Tune Up								
R&R Spark Plugs								
R&R Fan Belts								
R&R Alternator								
Flush Radiator								
R&R Steering Box								
Adjustment Trans Bands								
R&R Power Steering Pump								
R&R Ring Gear								
R&R Starter								
R&R Manifold Gasket								
Brake Job								
Repair Park Brake								
Rebuild Front End								
QEC Engine								
QEC Transmission								
ADDITIONAL TASKING								

Figure 10.1-1: OJT Syllabus (Sample)

REQUIRED READING

DIVISION		SUBJECT											
NAME	RATE												

Figure 10.1-2: Required Reading and Maintenance Information Record (OPNAV 4790/34)

NAMP INDOCTRINATION TRAINING

NAME: _____

RATE/RANK: _____

DATE ARRIVED: _____

TOPIC	INSTRUCTOR	DATE COMPLETED
Fuel Surveillance Program		
Navy Oil Analysis and Consumption Monitoring Program		
Aviators Breathing Oxygen Surveillance Program		
Hydraulic Contamination Control Program		
Tire and Wheel Maintenance Safety Program		
Quality Assurance Audit Program		
Naval Aviation Maintenance Discrepancy Reporting Program		
Technical Directive Compliance Program		
Foreign Object Damage Prevention Program		
Tool Control Program		
Corrosion Prevention and Control Program		
Plane Captain Qualification Program		
Egress/Explosive System Checkout Program		
Support Equipment Operator Training and Licensing Program		
Support Equipment Planned Maintenance System Program		
Naval Aviation Metrology and Calibration Program		
Hazardous Material Control and Management Program		
Individual Component Repair List Program		
Electromagnetic Interference/Electrostatic Discharge Program		
Miniature/Microminiature Program		
Gas Turbine Engine Test System and Global Test Facility Operator Training and Certification Program		
Aircraft Confined Space Program		
Support Equipment Misuse and Abuse		
Emergency Reclamation		
Nondestructive Inspection Program		
Maintenance Department Safety Program		

Figure 10.1-3: NAMP Indoctrination Training

NAVOSH/SAFETY TRAINING

NAME: _____
DATE REPORTED: _____

RATE/RANK: _____

TOPIC	INSTRUCTOR/DATE	INSTRUCTOR/DATE	INSTRUCTOR/DATE
NAVOSH Program (Annually)			
NAVOSH: Identification of key personnel and chain of command. (Annually)			
NAVOSH: Mishap Reporting (Annually)			
HAZARD Identification (Annually)			
Safety Precautions and Standards (Annually)			
First Aid and Survival Training (Annually)			
Mishap Prevention (Annually)			
Back Injury Prevention (Annually)			
Hearing Conservation (Annually, if applicable)			
Sight Conservation (Annually)			
First Aid (Quarterly, if applicable)			
Fire Prevention/Equipment (Annually)			
Radio Frequency Radiation (Annually)			
Laser (Annually)			
Battery Safety (Quarterly)			
Cardiopulmonary Resuscitation (CPR) (If applicable)			
Asbestos Hazards (Annually, if applicable)			
Lead (Annually, if applicable)			
Man-Made Mineral Fiber (Annually, if applicable)			
Confined Space Entry (Annually, if applicable)			
Hazard Communication (Annually)			
Hazard Communication OJT (MSDS) (Annually)			

NOTE: This figure is not all inclusive. Refer to applicable instructions for additional requirements.

Figure 10.1-4: NAVOSH/Safety Training

**QUALIFICATION/CERTIFICATION RECORD
LEFT SIDE**

Name: _____
SSN (LAST 4 ONLY)

Rate/Rank _____

1. Current Letters/Certificates of Designation/Qualifications, for example, OPNAV 4790/12.
2. Medical certifications, for example, audiograms, X ray, screening, laser eye testing, flight deck physical, and CPR.
3. Course completion certificates, for example, CENNAVAVNTECHTRA; including SE Phase I and Phase II training.
4. Personal Qualifications Standards (PQS).

PRIVACY ACT STATEMENT

1. Authority for the collection of information: 5 U.S.C. 301, Department Regulation and E.O. 9397 (SSN).
2. Information contained in the qualification/certification record will be used to monitor your training progress and track miscellaneous administrative functions within the Training Department.
3. Completion of this form is voluntary. However, failure to complete this form may result in the inaccurate documentation of your training. The principal purpose of the Privacy Act is to make known your special considerations and for you to authorize the release of your qualifications/certification record information.

I understand that this Privacy Act Statement applies to all requests for personal information made to my qualification/certification record and that a signed copy in my qualification/certification record is evidence of this notification. I further understand that I may receive a copy of this statement from the Training Department, on request. I also understand that I will be informed of any changes to the system or records for which this information is compiled and that I have the right to review personal data contained in this record, on request.

Signature

Date

Figure 10.1-5: Qualification/Certification Record (Left Side)

**QUALIFICATION/CERTIFICATION RECORD
RIGHT SIDE**

1. Billet/Collateral Duty Descriptions
2. NAMP Indoctrination Training
3. Maintenance Training Syllabus
4. NAVOSH and Safety Training
5. Egress/Explosive System Check-Out Certification (if applicable)

Division Officer Quarterly Review for

Rate/Rank

Name (Last, First, MI)

Date	Initials	Printed Name	Date	Initials	Printed Name
Initial Check In					

Figure 10.1-6: Qualification/Certification Record (Right Side)

10.2 Fuel Surveillance Program (NAMPSOP)

10.2.1 References

- a. NAVAIR 01-1A-35, Aircraft Fuel Cells and Tanks.
- b. NAVAIR 00-80T-109, Aircraft Refueling NATOPS Manual.
- c. MIL-HDBK-844B (AS), Aircraft Refueling Handbook for Navy/Marine Corps Aircraft.
- d. NAVAIR 15-01-500, Preservation of Naval Aircraft.
- e. NAVAIR 01-1A-20, Aviation Hose and Tube Manual.

10.2.2 Introduction

10.2.2.1 The Fuel Surveillance Program establishes the minimum requirements for sampling fuel in naval aircraft and aircraft engine test cells.

10.2.2.2 Fuel sampling can detect water, debris, and other contaminants that can negatively impact aircraft engine performance. Harmful effects of fuel contamination include low performance, erratic or incorrect fuel quantity indication, fuel system icing, and damage to engine and fuel system components.

10.2.3 Requirements

10.2.3.1 Aircraft Fuel Sampling

WARNING: JP-4, JP-5, AND JP-8 CAN CAUSE SEVERE BURNS, IRRITATIONS, AND BLINDNESS. AVOID PROLONGED SKIN CONTACT WITH ANY AVIATION FUEL.

10.2.3.1.1 Fuel samples shall be taken within 24 hours preceding the aircraft's initial launch, unless specified otherwise by type/model/series (T/M/S) aircraft maintenance requirements card (MRCs). Fuel samples are not valid for more than 24 hours.

NOTE: Group 3 UAS that utilize a sealed fuel system shall take fuel samples from the external fuel cell.

10.2.3.1.2 Fuel sampling shall be conducted per the T/M/S maintenance technical manuals. For aircraft without specified fuel sampling procedures, follow the general requirements of NAVAIR 01-1A-35.

a. Allow maximum possible time before sampling. Whenever possible, aircraft should have a minimum of two hours settling time, after aircraft movement or refueling to allow for water and solids to settle.

b. PPE, including chemical resistant gloves, chemical resistant apron, and goggles, must be worn while taking, handling, and disposing of fuel samples.

c. Take separate samples from all fuel cell/tank low point drains, including auxiliary, removable, and in-flight refueling tanks (approximately one pint from each low point drain) using a one-quart, clear, clean glass container.

NOTE: Group 3 UAS that utilize a sealed fuel system shall take fuel samples from the external fuel cell.

d. A Naval aircrewman (Line or Power Shift Supervisor, CDI, CDQAR, or QAR) designated by the Commanding Officer (CO) per the NATOPS Evaluation Report (OPNAV 3710/7), shall visually inspect

samples for a clear and bright appearance with no visible water or sediment by swirling and checking directly under the swirl vortex for any discoloration, water, cloudiness, or sediment per NAVAIR 00-80T-109.

1. If contaminants are present, retain the contaminated sample, drain approximately 1 gallon of fuel into bucket or other suitable container, and take another sample.

2. If the second sample is contaminated, immediately notify Maintenance Control, initiate a downing discrepancy work order (WO) against the aircraft, and give both samples to Quality Assurance (QA) for inspection.

e. Sample bottles shall be emptied and cleaned after each use.

f. Fuel samples shall be disposed of per local hazardous waste (HAZWASTE) procedures.

10.2.3.2 Test Cell Fuel Sampling

WARNING: JP-4, JP-5, JP-8 CAN CAUSE SEVERE BURNS, IRRITATIONS, AND BLINDNESS. AVOID PROLONGED SKIN CONTACT WITH ANY AVIATION FUEL.

10.2.3.2.1 Fuel samples shall be taken from all fixed and portable engine test stands fuel cells/tanks and accumulators. Minimum sampling procedures are as follows:

a. Samples shall be taken prior to the first engine run of the day, at a minimum.

NOTE: Shipboard test cell fuel sampling is conducted by V-4 Division. Prior to the first engine run of the day, the test cell operator shall contact V-4 and verify samples were taken and no contamination is present.

b. PPE, including chemical resistant gloves and goggles, shall be worn while taking, handling, and disposing of fuel samples.

c. Drain or draw samples from lowest possible point below the fuel pick-up point (approximately one pint of fuel for each sample), using a one-quart, clear, clean glass or polyethylene container.

d. The Test Cell supervisor or CDI, CDQAR, or QAR shall visually inspect fuel samples for a clear and bright appearance with no visible water or sediment by swirling and checking directly under the swirl vortex for any discoloration, water, cloudiness, or sediment per NAVAIR 00-80T-109.

(1) If contaminants are present, retain the sample, drain and draw approximately 5 gallons (but not more than 10 gallons) of fuel from the low point and take another sample.

(2) If more than 10 gallons are drained to achieve a satisfactory sample, initiate a downing discrepancy MAF against each test cell the contaminated tank feeds, and notify Production Control and QA.

e. Defuel and clean contaminated fuel cells before returning to operation.

f. Sample bottles shall be cleaned after each use.

g. Fuel samples must be disposed of per local HAZWASTE procedures.

10.2.3.3 Fuel System Integrity

a. NRFI and inactive fuel cells or tanks shall be preserved and protected against contamination per NAVAIR 15-01-500.

b. Protective measures, such as approved covers or caps, shall be placed on open removed fuel cells, lines, and components per NAVAIR 01-1A-20.

10.2.4 Responsibilities

10.2.4.1 Wing or MAW Model Manager:

a. Publish a training syllabus oriented to the T/M/S aircraft operated to include:

(1) Specific procedures and requirements for fuel sampling as outlined in NAVAIR 01-1A-35, NAVAIR 00-80T-109, MIL-HDBK-844 (AS), T/M/S maintenance technical manuals, and the NATOPS manuals.

(2) Procedures for maintaining fuel system integrity during maintenance.

(3) PPE, safety precautions, and HAZWASTE procedures for fuel handling.

b. Publish local command procedures (LCP) per [Appendix D](#) to direct geographic, T/M/S-specific, or command-directed actions for Fuel Surveillance not addressed in this NAMPSOP.

10.2.4.2 Maintenance Officer (MO):

a. Designate a Fuel Surveillance Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.

(1) The Line or Power Line Division Officer or Chief Petty Officer or NCOIC is recommended for O-level activities.

(2) The Power Plants, SE Division Officer or Chief Petty Officer or NCOIC is recommended for I-level activities.

b. Publish an LCP per [Appendix D](#) if required to direct geographic, T/M/S-specific, or command-directed actions for fuel surveillance not addressed in this NAMPSOP. Command LCPs shall be submitted to the Wing or MAW for consideration of inclusion in a Wing LCP.

10.2.4.3 Program Manager:

a. Perform an assessment using the Computerized Self Evaluation Checklist (CSEC) within 30 days of being designated as Program Manager, and annually thereafter.

b. Provide Fuel Surveillance Program indoctrination training to personnel. Training shall be specific to the duties the individual performs and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-3](#)) in the individual's qualification/certification record or ASM.

c. (IMA Program Managers) Publish a training syllabus oriented to the type of test cell operated, containing the elements specified in NAVAIR 01-1A-35.

d. Maintain a program file to include:

(1) List of equipment requiring fuel sampling.

(2) POCs.

(3) Program related correspondence and message traffic.

- (4) References or cross reference locator sheets.
- (5) Most recent CSEC assessment checklist.

10.2.4.4 QAO:

Designate, the Power Plants QAR as the Fuel Surveillance Program Monitor. Designation will be in writing via the MMP or SME listing.

10.2.4.5 QA Fuel Surveillance Program Monitor:

- a. Perform audits using CSEC, per the procedures of [paragraph 10.7](#).
- b. Immediately conduct an investigation of the source of fuel contamination. If the contamination is suspected to have come from the refueling source (truck or fueling station), immediately notify the station or ship Fuels Officer and provide them a sample for analysis, per MIL-HDBK-844B (AS).

10.2.4.6 Maintenance Control and Production Control:

- a. Immediately issue a downing discrepancy WO and notify QA to conduct an investigation whenever aircraft or test cell fuel contamination is reported.
- b. When embarked, direct fuel samples be drawn and analyzed for flash point and follow the precautions in NAVAIR 00-80T-109, whenever an aircraft receives, or is suspected of receiving, any fuel other than JP-5. Notify flight deck control not to move the aircraft to the hangar bay until the flashpoint has been certified to be above 120 degrees Fahrenheit.
- c. Debrief aircrew returning from cross-country flights to verify specific fuels used.
- d. Track fuel systems of preserved aircraft and test cells, and issue WOs for the preservation actions specified in T/M/S maintenance technical manuals and NAVAIR 15-01-500.

10.2.4.7 Line, Power Line, and Test Cell Supervisor:

- a. Verify completion of Fuel Surveillance Program indoctrination training for personnel.
- b. Assign only qualified personnel knowledgeable of performing fuel sampling per maintenance technical manuals, NATOPS procedures, and this NAMPSOP.
- c. Periodically, spot check personnel conducting fuel sampling to verify correct procedures and safety precautions are being followed.
- d. Verify contaminated samples are immediately reported to Maintenance Control, and are physically given to QA for inspection.
- e. Provide PPE and equipment to personnel performing fuel sampling.
- f. Verify that waste fuel is being disposed of per local HAZWASTE procedures.

10.2.4.8 Power Plants and Test Cell Supervisors:

- a. Assist QA in conducting the investigation of the source of contaminated aircraft or test cell fuel systems.

b. Refer to and comply with maintenance technical manuals and T/M/S NATOPS for specific gravity and minimum flow setting adjustment, if aircraft or test cells have been serviced with fuels other than JP-5.

10.2.4.9 Aircrew:

a. Be trained in fuel sampling requirements, procedures, and contamination identification if required to conduct refueling or fuel sampling without maintenance personnel available, including in-flight refueling operations, per NAVAIR 00-80T-109.

b. Comply with specified requirements for approved emergency fuels and limitations regarding interchangeability of fuel types and grades.

c. Notify Maintenance Control when fuel other than JP-5 has been used.

10.3 Navy Oil Analysis and Consumption Monitoring Program Standard Operating Procedures (NAMPSOP)

10.3.1 References

- a. NAVAIR 17-15-50.1, Joint Oil Analysis Program Manual, Volume I.
- b. NAVAIR 17-15-50.2, Joint Oil Analysis Program Manual, Volume II.
- c. NAVAIR 17-15-50.3, Joint Oil Analysis Program Manual, Volume III.
- d. NAVAIRINST 4731.1, Navy Oil Analysis Program for Aeronautical Equipment.

10.3.2 Introduction

10.3.2.1 The Navy Oil Analysis and Consumption Monitoring Program establishes requirements for monitoring the usage rate and condition of oil in aircraft equipment, in order to detect impending failures.

10.3.2.2 Naval aviation participates in the Joint Oil Analysis Program (JOAP), which is a combined Navy, Army, and Air Force effort designed to provide timely and accurate oil analysis support by strategically locating oil analysis laboratories and standardizing procedures and equipment.

10.3.2.3 The In-Service Support Center (ISSC) for naval aviation participation in the JOAP is the Navy Oil Analysis Program (NOAP) Office, 22229 Elmer RD. BLDG. 2360, Patuxent River, MD 20670-1534, phone (301) 757-9249 or (301) 997-8260. The NOAP Office can provide information regarding equipment requirements, correlation, and testing standards.

NOTE: For a list of certified NOAP laboratories, send an email to NOAP@navy.mil.

10.3.3 Requirements

10.3.3.1 Training

a. Indoctrination training on the Navy Oil Analysis and Consumption Monitoring Program shall be given to all newly reporting personnel per [NAMPSOP 10.1](#).

b. Personnel certifying aircraft Safe for Flight, Work Center Supervisors, and maintenance personnel responsible for servicing and sampling engine/gearbox oil shall receive job specific training on servicing requirements, sampling requirements, maximum oil consumption limits, and monitoring procedures referenced in NAVAIR 17-15-50, NAVAIR 4731.1, maintenance technical manuals, Wing local command procedure (LCPs), and this NAMPSOP.

10.3.3.2 Oil Analysis

a. Oil samples shall be taken as directed by the type/model/series (T/M/S) specific maintenance technical manuals, or when requested by the Oil analysis laboratory. Oil samples will then be submitted for analysis utilizing the oil Analysis Request form (DD-2026) ([Figure 10.3-1](#)).

NOTE: For detailed instructions on completing the form, reference NAVAIR 17-15-50.1.

b. An entry will be made in configuration management auto log-set (CM ALS) and the logbook Aeronautical Equipment Service Record (AESR) Miscellaneous History whenever oil analysis results indicate abnormal or out of limits wear metals or other oil contaminants. For components with scheduled removal component (SRC) cards, the entry will be made in the Repair/Rework/Overhaul section. For

components with equipment history record (EHR) cards, the entry will be made in the Maintenance Record section. The entry must include:

- (1) Type and amount of wear metals or other contaminants.
- (2) Corrective action taken.
- (3) Results of subsequent sample analysis.

c. All oil analysis records shall be kept on file for as long as the engine or gearbox is held by the command.

10.3.3.3 Oil Consumption Monitoring

Oil consumption will be monitored for engines, gearboxes, and transmissions with oil consumption rates (such as ounces per flight hour) specified in applicable maintenance technical manuals.

NOTE: Gearboxes and transmissions that only have leak limits, such as drops per minute, do not require oil consumption monitoring.

10.3.3.4 Oil Consumption Documentation

a. Oil consumption shall be documented in the Engine/Gearbox Oil Consumption record ([Figure 10.3-2](#)) in the quantity specified in applicable maintenance technical manuals, such as, ounces per flight hour. The quantity and grade of oil added to each engine will also be annotated in block 6 of the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) per [Chapter 5](#) procedures.

b. The current working copy of the Engine/Gearbox Oil Consumption Record will be maintained in the aircraft discrepancy book (ADB). The last two completed oil consumption records will be filed in the applicable logbook/AESR.

NOTES: 1. The last two completed oil consumption records and the current working copy record will be included in the logbook/AESR when the aircraft is transferred, or when an engine is turned in for repair or when an engine or gearbox is transferred RFI to another operating activity.

2. Oil consumption records are not required to be transferred with gearboxes turned in for repair and can be disposed of after transfer.

10.3.4 Responsibilities

10.3.4.1 NOAP or JOAP Laboratories:

a. Comply with laboratory operating procedures, documentation, and notification requirements referenced in NAVAIR 17-15-50 and NAVAIRINST 4731.1.

b. Notify the NOAP Program ISSC via email (NOAP@navy.mil) whenever a NOAP Lab Operator reports or transfers.

c. Notify the activity that submitted the sample and the responsible ISSC of sample results coded other than "A". Notification will be made via fastest possible means, per NAVAIR 17-15-50.2.

10.3.4.2 Type Wing or MAW Model Manager:

a. Publish an LCPs per [Appendix D](#) to direct T/M/S specific or other Wing-directed actions for oil analysis and oil consumption monitoring not addressed in this NAMPSOP. At a minimum, the Wing LCP must contain:

- (1) The list of items requiring oil consumption monitoring.
- (2) A standardized method for Maintenance Control to track oil consumption ([Figure 10.3-2](#)).

b. Include T/M/S specific oil analysis and consumption monitoring questions in the Wing Computerized Self Evaluation Checklist (CSEC) supplemental.

10.3.4.3 Maintenance Officer:

a. Designate an E-7 or above in Maintenance Control (O-level), Power Plants Division (I-level), or a designated SME (D-level) as the Navy Oil Analysis and Consumption Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.

b. Publish LCPs per [Appendix D](#) if required to direct T/M/S specific or other command directed actions for oil analysis and oil consumption monitoring not addressed in this NAMPSOP or the Wing LCP. O-level Command LCPs shall be submitted to the Wing or MAW Model Manager for consideration of inclusion in the Wing LCP.

10.3.4.4 Program Manager:

a. Perform an assessment using the CSEC within 30 days of designation as the Program Manager and annually thereafter per [NAMPSOP 10.7](#).

b. Be knowledgeable of the oil analysis and oil consumption requirements referenced in NAVAIR 17-15-50, applicable maintenance technical manuals, and this NAMPSOP.

c. Provide NAMP indoctrination training to personnel relating to their specific Navy Oil Analysis and Consumption Program responsibilities per [NAMPSOP 10.1](#).

NOTE: D-level training may be given by a qualified individual designated on the SME listing.

d. Coordinate with the NATOPS Officer to provide training to pilots and aircrew on oil consumption documentation procedures while operating away from home base.

e. Verify logbook entries whenever samples are deemed “out of limits”. AESR, SRC, and EHR card entries are made for oil analysis results indicating abnormal or out of limits wear metals or other oil contaminants.

f. Maintain a program file to include:

(1) POCs, to include Intermediate Maintenance Activity (IMA) or Wing, Fleet Support Team (FST), and Aviation Maintenance Management Team (AMMT) Subject Matter Expert (SMEs).

(2) List of aircraft, gearbox, and equipment requiring oil analysis and oil consumption monitoring. Shipboard Aircraft Intermediate Maintenance Department/Detachment (AIMD) list will include AIMD and Engineering Department equipment.

(3) Program correspondence and message traffic.

(4) References or cross-reference locator sheets.

(5) Most current CSEC assessment checklist.

10.3.4.5 Maintenance Control or Production Control:

- a. Comply with training requirements of paragraph [10.3.3.1b](#) for all personnel designated to certify aircraft Safe for Flight.
- b. Verify oil consumption rates for engines and gearboxes are within limits specified in T/M/S instructions prior to releasing aircraft Safe for Flight. If oil consumption rate exceeds the authorized limits, initiate a work order (WO) or maintenance action form (MAF) to take actions directed in MIMs.
- c. Annotate the quantity and grade of oil added to each engine in block 6 of the Aircraft Inspection and Acceptance Record (OPNAV 4790/141), per [Chapter 5](#) procedures.
- d. Maintain an up-to-date Engine/Gearbox Oil Consumption Record ([Figure 10.3-2](#)) in the ADB. Forward completed forms to Logs and Records for filing.
- e. Initiate a WO or MAF to take actions directed in MIMs for engines or gearboxes with oil analysis result codes other than “A” per NAVAIR 17-15-50.1.
- f. Brief pilots and aircrew on oil consumption limitations, servicing requirements, and procedures if the aircraft will be operated away from home base.

10.3.4.6 Quality Assurance (QA) Officer:

Designate a Power Plants QAR as the Navy Oil Analysis and Consumption Program Monitor. Designation will be in writing via the MMP or SME listing.

NOTE: Depots may assign any QA Specialist as the Program Monitor.

10.3.4.7 Quality Assurance Program Monitor:

- a. Perform audits using the CSEC, per the procedures of [NAMPSOP 10.7](#).
- b. Review oil analysis laboratory results and coordinate with Maintenance or Production Control to issue a WO or MAF for oil sample results with codes other than “A” per NAVAIR 17-15-50.1.
- c. Keep a record of Oil Analysis Request forms (DD-2026) until test results are listed in either the monthly or the Component Enrolled Report provided by the oil analysis laboratory.
- d. Screen Oil Consumption Records each week for completeness and accuracy.
- e. Monitor oil consumption rates and oil contamination trends. Advise Maintenance or Production Control if a trend indicates an impending out-of-limits condition.

10.3.4.8 Logs and Records:

- a. Make the logbook, AESR, CM ALS Miscellaneous History (OPNAV 4790/25A), SRC Card (OPNAV 4790/28A), and EHR Card (OPNAV 4790/113) entries specified in [paragraph 10.3.4](#).
- b. File and transfer Engine/Gearbox Oil Consumption Records ([Figure 10.3-2](#)) per the requirements of [paragraph 10.3.3.4b](#).

10.3.4.9 Work Center Supervisors:

- a. Verify personnel complete the training requirements applicable to their duties per [paragraph 10.3.3.1](#).

- b. Periodically spot-check work in progress to verify the proficiency of personnel performing engine/gearbox oil servicing and sampling.
- c. Stock an adequate supply of oil sampling kits, as specified in NAVAIR 17-15-50.1.
- d. Personally conduct a daily inspection of assigned oil servicing units and verify they are clean and free of contamination.
- e. Verify samples from engines or gearboxes are taken at the interval established in the maintenance technical manuals.
- f. Review Oil Analysis Requests form (DD-2026) ([Figure 10.3-1](#)) for accuracy.
- g. Send oil samples to the assigned monitoring oil laboratory per NAVAIR 17-15-50.1.
- h. Submit a “SPECIAL” oil analysis sample when requested by the NOAP or JOAP laboratory. Mark the Oil Analysis Request (DD-2026) and mailing container with red borders to alert the oil laboratory of the need for immediate processing per NAVAIR 17-15-50.1.

10.3.4.10 Maintenance Personnel:

- a. Strictly follow servicing and sampling procedures specified in the maintenance technical manuals.
- b. Inspect and verify servicing units are clean and free of contamination prior to each use.
- c. Verify servicing units have the correct oil grade prior to each use.
- d. Know the oil consumption limits of engines and gearboxes, and immediately notify the Work Center Supervisor and Maintenance or Production Control whenever excessive oil consumption is suspected.

10.3.4.11 Aircrew:

- a. Review oil consumption rates documented on the Engine/Gearbox Oil Consumption Record ([Figure 10.3-2](#)) and block 6 of the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) prior to flight.
- b. Be thoroughly familiar with oil servicing and sampling procedures in the event servicing or sampling is required while operating away from home base.

COMNAVAIRFORINST 4790.2C
15 Jan 2017

OIL ANALYSIS REQUEST										
TO	OIL ANALYSIS LABORATORY:									
FROM	MAJOR COMMAND:									
	OPERATING ACTIVITY NAME AND ADDRESS (Include Zip/APO)									
	UIC: _____ DMS Address (Navy):									
	POC: NAME/RANK/EMP #									
	POC: PHONE/FAX/EMAIL:									
MMCO: NAME / EMAIL:										
Source of sample										
<input type="checkbox"/> Aeronautical <input type="checkbox"/> Ground <input type="checkbox"/> Ship Equipment <input type="checkbox"/> OTHER										
EQUIPMENT MODEL/APPLICATION:										
EQUIPMENT/COMPONENT SERIAL NUMBER:										
END ITEM MODEL/SHIP NAME & HULL NUMBER (with Dash):										
END ITEM SERIAL NUMBER:										
MACHINERY / VALVE ID:										
DATE SAMPLE TAKEN (DAY/MO/YR):					LOCAL TIME SAMPLE TAKEN:					
HOURS/MILES SINCE OVERHAUL:										
HOURS/MILES SINCE OIL CHANGE:										
CURRENT ODOMETER/HOURS READING:										
REASON FOR SAMPLE										
<input type="checkbox"/> ROUTINE <input type="checkbox"/> LAB REQUEST <input type="checkbox"/> TEST CELL <input type="checkbox"/> OTHER (SPECIFY)										
OIL ADDED SINCE LAST SAMPLE (OZ, PTS, QTS, GALS):										
HOW TAKEN			SAMPLE TEMPERATURE			TYPE OIL				
<input type="checkbox"/> DRAIN <input type="checkbox"/> TUBE			<input type="checkbox"/> HOT <input type="checkbox"/> COLD							
REMARKS						A/C ENGINE POSITION				
MCD Visual Inspection of debris Within limits <input type="checkbox"/> Exceeds limits <input type="checkbox"/>										
SUBMITTING ACTIVITY SAMPLE NUMBER:										
<i>FOR LABORATORY USE</i>										
SAMPLE RESPONSE TIME:										
WEAR METAL ANALYSIS										
Fe	Ag	Al	Cr	Cu	Mg	Na	Ni	Pb	Si	
Sn	Ti	B	Mo	Zn	Ba	V	Mn	Cd		
Water Content		Crackle		Acid Number		Viscosity @ 40C		Viscosity @ 100C		Fuel Dilution
PARTICLE COUNT										
5 - 15 um		15 - 25 um		25 - 50 um		50 - 100 um		> 100 um		Overall NAS Class
SEM/EDX										
MCD LEVEL:			WEAR METAL TYPE:							
LABORATORY SAMPLE NUMBER(S)						OAP		OPERATOR INITIALS		

DD FORM 2026

PREVIOUS EDITIONS OBSOLETE

Figure 10.3-1 (Front): Oil Analysis Request (DD 2026)

TRANSIENT AIRCRAFT OIL ANALYSIS RECORD

ASSIGNED OIL ANALYSIS LABORATORY	LABORATORY TELEPHONE NO. (DSN):	END ITEM MODEL AND SERIAL NO.
	(Commercial):	EQUIPMENT MODEL AND SERIAL NO.

LAB CODE	DATE	TOTAL TIME		FE							SI	TI		B		ZN	BA	V			LAB REC		
		OIL	OVERHAUL																				

DATE DEPARTED (Return this form with aircraft)

REMARKS (Place MCD Tabs here)

Figure 10.3-1 (Back): Oil Analysis Request (DD 2026)

COMNAVAIRFORINST 4790.2C
15 Jan 2017

BUNO: _____ Engine/Gearbox S/N: _____ Position: _____

Maximum allowable Oil Consumption is _____ oz. per flight hour.

Completed records to be filed in the AESR manila envelope

DATE	FLIGHT HOURS	OZ. CONSUMED	CONSUMPTION RATE (OZ. PER F/H)	SERVICING PERSONNEL SIGNATURE	MAINTENANCE CONTROL SIGNATURE

Figure 10.3-2: Engine/Gearbox Oil Consumption Record (Sample)

10.4 Aviators Breathing Oxygen (ABO) Surveillance Program (NAMPSOP)

10.4.1 References

- a. NAVAIR 06-30-501, Oxygen/Nitrogen Systems Technical Manual.
- b. NAVAIR 13-1-6.4-1, Aviation-Crew Systems Oxygen Systems (Aircraft Equipment, Masks, and other Systems).
- c. NAVAIR 13-1-6.4-2, Aviation-Crew Systems Oxygen Equipment (Regulators).
- d. NAVAIR 13-1-6.4-3, Aviation-Crew Systems Oxygen Equipment (Concentrators).
- e. NAVAIR 13-1-6.4-4, Aviation-Crew Systems Oxygen Equipment (Converters).
- f. NAVAIR A6-332AO-GYD-000, Aviators Breathing Oxygen (ABO) Surveillance Program Laboratory and Field Guide.
- g. NAVAIR AG-115SL-OMP-000, Cryogenics Sampler Model FCS 2001 Part Number 600646.
- h. NAVAIR 06-20-2, Gas Cylinders (Storage Type) Use, Handling, and Maintenance (ATOS).
- i. NAVAIR 17-15-98, A/E24T-226 Analyzer Set, Contaminate, Aviators Breathing Oxygen Part Number 3346AS100-1.
- j. NAVAIR 17-15-534, Operation and Intermediate Maintenance with Illustrated Parts Breakdown, Analyzer, Aviators Breathing Oxygen (ABO), A/E26T-3, Part Number 3964AS100-1.
- k. NAVAIR 19-25D-26, Servicing Trailer, Liquid Oxygen Low Loss, Closed Loop Type TMU-70/M Part Number 22455.
- l. NAVAIR 19-25D-33, Storage Tank, Liquid Oxygen, Type TMU-27/M, 50-Gallon Capacity.
- m. NAVAIR 19-600-138-6-1, Preoperational Checklist, Storage Tank, Liquid Oxygen Low Loss, Closed Loop, TMU-70/M.
- n. NAVAIR 19-600-282-6-2, Periodic Maintenance Requirements Manual, 50 Gallon Storage Tank, Liquid Oxygen, TMU-27/M.
- o. NAVAIR 00-80T-96 CH-1, U.S. Navy Support Equipment Common (Basic Handling & Safety Manual).

10.4.2 Introduction

10.4.2.1 The Aviators Breathing Oxygen (ABO) Surveillance Program establishes requirements to reduce risk to personnel working with ABO and prevent the contamination of aircraft oxygen systems and components through strict quality control measures and periodic surveillance procedures. ABO surveillance begins with the generation or procurement of liquid oxygen (LOX) or gaseous oxygen and continues through the storage, handling, transfer, and servicing of aircraft and oxygen systems. It involves thorough testing and monitoring of oxygen and oxygen systems to ensure contaminants; such as hydrocarbons, inert solids, particulate matter, moisture, carbon dioxide, toxic and odorous contaminants, nitrous oxide, and halogenated compounds are detected and eliminated.

10.4.2.2 The In-Service Support Center (ISSC) for the ABO Surveillance Program is the COMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.8.6.10, HWY 547, LAKEHURST NJ 08733-5090, DSN 624-4253/1433 or COMM (732) 323-4253/1433.

10.4.3 Requirements

All activities operating aircraft with LOX or gaseous oxygen systems, operating or maintaining LOX or gaseous oxygen system servicing equipment, or conducting ABO analysis shall comply with the ABO Surveillance Program.

WARNING: EXTREME CARE MUST BE TAKEN WHEN HANDLING CRYOGENICS TO MINIMIZE THE PROBABILITY OF CONTACT WITH THE SKIN. DIRECT CONTACT WITH CRYOGENIC FLUIDS OR SURFACES COOLED BY CRYOGENIC LIQUIDS CAN CAUSE SEVERE BURNS, FIRE, AND EXPLOSIONS. VIOLENT FAILURE OF ABO EQUIPMENT CAN RESULT IN LOSS OF LIFE.

10.4.3.1 ABO Testing

WARNING: FAILURE TO CORRECT DEFICIENCIES IN ABO/OBOGS SYSTEMS CAN RESULT IN LOSS OF LIFE OR LOSS OF AIRCRAFT. AIRCRAFT EXPERIENCING AN AIRCREW PHYSIOLOGICAL EPISODE WHERE THE QUALITY OF THE OXYGEN OR FUNCTIONING OF THE ABO/OBOGS SYSTEM OR RELATED AIRCREW-WORN EQUIPMENT MAY HAVE CONTRIBUTED TO THE EPISODE (SUCH AS HYPOXIA) SHALL BE RESTRICTED FROM FLIGHT UNTIL CONDITIONAL INSPECTION PROCEDURES SPECIFIED IN THE AIRCRAFT MIMS OR OTHER DIRECTIVE ARE COMPLETED. A CAT I HMR/EI (10.9) SHALL BE SUBMITTED ON EACH AIRCRAFT COMPONENT, AIRCREW EQUIPMENT, OR SE THAT MAY HAVE CONTRIBUTED TO THE EPISODE.

a. All ABO shall be tested using the A/E24T-226 Analyzer Set per the requirements specified in maintenance technical manuals and NAVAIR 17-15-98.

b. All A/E24T-226 Analyzer Sets shall be tested for proper operation by performing an ABO Correlation Sample Test, at least once each quarter (four times per year) per NAVAIR A6-332AO-GYD-000, Section V.

10.4.3.2 ABO Generation

a. All LOX and gaseous oxygen operations shall be performed by two or more qualified technicians per NAVAIR 13-1-6.4.

b. All Navy and Marine Corps ABO and Nitrogen Generation plants operated by I-level activities shall be designated as Work Center 820.

c. All ABO and Nitrogen Generation plant equipment shall be inspected and maintained as aviation support equipment per the procedures of the Support Equipment (SE) Planned Maintenance System (PMS) Program per [paragraph 10.17](#).

10.4.3.3 ABO Maintenance and Servicing

a. Aircraft LOX and gaseous oxygen systems, components, and related support equipment (SE) shall be maintained by Work Center 130 or 13B (O-level ALSS and Environmental Systems), Work Center 81C (I-level Oxygen Regulator and Equipment Shop), Work Center 92C (I-level LOX/Oxygen/Nitrogen SE Repair Shop), or FRC D-level Oxygen Shop personnel only.

b. Tools and toolboxes used to maintain or service aircraft oxygen systems or oxygen servicing SE shall be used for oxygen system maintenance and servicing only. Tools and toolboxes shall be marked "OXYGEN USE ONLY", be clean, and free of foreign objects or hydrocarbons per NAVAIR 13-1-6.4.

c. All operations involving the maintenance and servicing of LOX and gaseous oxygen shall be performed by two or more qualified personnel per NAVAIR 13-1-6.4.

NOTE: LOX converter removal and replacement may be performed by one ABO trained person and is not restricted to Work Center 130 or 13B personnel only.

(1) Personal protective equipment (PPE) shall be used during LOX and gaseous oxygen servicing operations.

(2) A 6-inch deep drip or drain pan shall be used to catch LOX overflow. LOX drip or drain pans shall be clearly marked "LOX USE ONLY", be clean, and FOD and hydrocarbon free per NAVAIR 13-1-6.4.

10.4.3.4 Training and Qualification Requirements

a. Personnel involved in the manufacture, analysis, use, handling, or servicing of oxygen systems, equipment, and SE shall have a thorough knowledge of the characteristics of LOX and gaseous oxygen systems and components, to include ABO dangers, contamination hazards, and need for quality standards.

b. Newly reporting personnel assigned to the Maintenance Department shall receive NAMP Indoctrination Training on the ABO Surveillance Program per [NAMPSOP 10.1](#). Indoctrination training shall be documented on the NAMP Indoctrination Training Sheet ([Figure 10.1-3](#)) or Advanced Skills Management (ASM) equivalent.

c. Personnel required to generate LOX and gaseous oxygen, or service and maintain ABO systems and components, shall receive task specific ABO training and annual refresher training thereafter. Training shall be specified in the individual's qualification training track, be conducted by lecture, and include detailed instructions on the dangers of handling LOX and gaseous oxygen, the requirements and use of PPE, and type/model/series (T/M/S) specific procedures applicable to the person's assigned duties.

d. ABO Analyzer Operators shall receive initial qualification training by one of the following methods:

(1) Aviators Breathing Oxygen (ABO) Test Site Operator/Analyst course (Course C-670-2018).

(2) Aviators Breathing Oxygen Contaminant Analyzer Intermediate Operator/Maintainer course (Course C-750-3217).

(3) ABO qualified Naval Aviation Technical Data and Engineering Services Command (NATEC) (Code 6.8.5) personnel.

NOTE: Submit course training requests to Naval Aviation Technical Training Center (NATTC) per NAVAIR A6-332AO-GYD-000, Section IV.

e. ABO Analyzer Operators shall maintain currency in operating analyzers and interpreting scans by reading at least one sample scan every 6 months.

(1) ABO Analyzer Operators who have exceeded 6 months between sample scans shall be suspended from operator duties until they receive refresher training from a current ABO Analyzer Operator.

(2) ABO Analyzer Operators who do not interpret at least one sample scan every 24 months shall be suspended from operator duties until they complete one of the initial qualification training methods listed in [paragraph 10.4.3.4.4](#).

10.4.3.5 Facilities Requirements

- a. Oxygen system components maintenance shops shall comply with the facilities requirements per NAVAIR 13-1-6.4.
- b. Gas cylinders shall be protected, stored, and hydrostatically tested per NAVAIR 06-20-2.

10.4.4 Responsibilities

NOTE: Responsibilities specific to different levels of maintenance and oxygen analyzing sites are indicated by the following: O = Organizational, I = Intermediate, and I/A = I-level activities with analyzing capability. If no level of maintenance is indicated, all levels are responsible.

10.4.4.1 Maintenance and Production Officer:

- a. Designate an ABO Surveillance Program Manager assigned to Work Center 130, 13B, or 800 Division. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.
- b. Develop local command procedure (LCPs) per [Appendix D](#), if required to direct geographic, T/M/S, or command directed actions for ABO Surveillance not addressed in this NAMPSOP. Command LCPs shall be submitted to the Wing or MAW for consideration of developing a Wing LCP.

10.4.4.2 Program Manager:

- a. Know and enforce compliance with sections of the maintenance technical manuals and this NAMPSOP that are applicable to the aircraft and equipment maintained or serviced.
- b. Perform an assessment using the Computerized Self Evaluation Checklist (CSEC) within 30 days of designation and annually thereafter.
- c. Conduct ABO Surveillance Program indoctrination and annual refresher training.
- d. (O) Retain the I-level Performance Test Sheet (PTS) and maintenance action form (MAF) for each On-Board Oxygen Generation Systems (OBOGS) concentrator and oxygen regulator installed in the aircraft.

NOTE: 1. The lack of a PTS or MAF in the Program Manager's binder does not make the component non-ready for issue (NRFI).

2. The PTS and MAF can be disposed of when the component is transferred for rework or repair.

3. The PTS and MAF shall be submitted with the suspected component when turned in for an Engineering Investigation (EI) due to a physiological episode.

- e. (I/A) Verify ABO Analyzer Operators are qualified and remain current with proficiency requirements per [paragraph 10.4.3.4e](#).
- f. Maintain a program file to include:
 - (1) POC.

- (2) Program correspondence and message traffic.
- (3) References or cross-reference locator sheets.
- (4) Current CSEC assessment and QA Program Monitor audit.
- (5) (O) OBOGS concentrator and aircraft installed oxygen regulator PTS and MAF.
- (6) (I/A) Copies of training and course completion certificates for ABO Analyzer Operators.
- (7) (I/A) One MAF documenting each Analyzer Operator's analysis of an oxygen sample within the last 6 months.

NOTE: The last MAF documenting an Analyzer Operator's analysis of an oxygen sample shall be retained for 24 months after the Analyzer Operator transfers from the command. This provides a reference for the next command to verify the Analyzer Operator completed the required training per [paragraph 10.4.3.4](#).

- (8) (I/A) Industrial Hygienist air exchange results.
- (9) (I/A) Sample results for Analyzer periodic maintenance and Oxygen sample analyzer. Retain results for one year. Results can be filed in a separate binder, but must be cross-referenced in the program file.
- (10) (I/A) Three part correlation sample documents for the last 12 months per [paragraph 10.4.3.1b](#).

10.4.4.3 QA Officer:

Designate a QAR (normally an Aviation Structural Mechanic Egress (AME), Aircrew Survival Equipmentman (PR), or D-level equivalent QA Specialist) as the ABO Surveillance Program Monitor. Designation will be in writing via the MMP or SME listing.

NOTE: Carrier Air Wing (CVW) or Aviation Combat Element (ACE) MOs shall designate a CVW or ACE Squadron QAR as ABO Surveillance Program Monitor, if operating a consolidated ABO servicing team.

10.4.4.4 ABO Program Monitor:

- a. Read and remain current with the references and sections of this NAMPSOP and ABO procedures in maintenance technical manuals that are applicable to the aircraft and equipment maintained and serviced.
- b. Perform audits per [paragraph 10.7](#).

10.4.4.5 Work Center Supervisor:

- a. Verify all tools and toolboxes used to maintain and service oxygen systems or servicing SE comply with NAVAIR 13-1-6-4.
- b. Maintain a minimum of two ABO qualified personnel to perform servicing, testing, oxygen generation, and SE or aircraft purging.
- c. Store and maintain ready for issue material (RFI) LOX converters and oxygen servicing SE per applicable manuals.

- d. Assign only qualified personnel to perform oxygen related functions and only licensed personnel to operate oxygen servicing SE.
- e. Personally check the physical condition of each ABO tool and PPE weekly, at a minimum, and replace when necessary.
- f. Spot check work in progress involving the handling of LOX and gaseous oxygen to verify it is being performed by two or more ABO qualified personnel (except for removal and replacement of aircraft LOX converters). Check that the correct PPE, tools, and drip or drain pans are being used.
- g. Immediately notify Maintenance or Production Control of contamination or odors in oxygen systems. Assist with initiating WOs to perform conditional maintenance on affected oxygen systems, components, and SE per maintenance technical manuals.
- h. Keep equipment and areas around oxygen system components, SE, and storage areas clean, free of hydrocarbons and combustible materials.
- i. (O) Forward test pressure gauge relief valve test fixtures to IMA for testing and setting per NAVAIR 19-25D-26.
- j. Verify ABO Surveillance Program indoctrination training and annual refresher training are provided by the ABO Program Manager for personnel involved in the manufacture, analysis, use, handling, and servicing of oxygen, oxygen components, and related SE.

10.4.4.6 ABO Personnel:

- a. Check the condition of ABO PPE prior to use. Any worn or unserviceable PPE shall be immediately removed from service.
- b. Wear all PPE required per NAVAIR 13-1-6.4 and NAVAIR 06-30-501 when working with LOX and gaseous oxygen.
- c. Only use tools marked "OXYGEN USE ONLY" to perform maintenance or servicing of ABO systems or SE.
- d. Prior to starting LOX and gaseous oxygen operations, correctly position a clean, FOD and hydrocarbon free properly marked "LOX USE ONLY" 6-inch deep drip or drain pan to collect LOX overflow per NAVAIR 13-1-6.4.
- e. Immediately notify the Work Center Supervisor if contamination or odors in oxygen systems are detected or suspected.
- f. Keep equipment and areas around oxygen system components, SE, and storage areas clean, free of hydrocarbons and combustible materials.

10.4.4.7 (I/A) ABO Analyzer Operators:

- a. Perform analysis of oxygen samples, per the requirements specified in maintenance technical manuals and NAVAIR 17-15-98.
- b. Perform ABO Analyzer Correlation Sample Test per NAVAIR A6-332AO-GYD-000.
- c. Provide the following correlation documents to the Program Manager:

- (1) Submitted cover letter and sample results.
- (2) Statistical Analysis Report.

d. Analyze the results from the system performance test, optimized system energy throughput, maintenance log sheet data, and system hardware configuration parameters to detect signs of system degradation or component failures and take corrective action per NAVAIR 17-15-98 and NAVAIR 17-15-534.

e. Perform at least one oxygen sample analysis every 6 months per [paragraph 10.4.3.4e](#). Prior to transfer, obtain a hardcopy of the last MAF documenting an analysis, and present the copy to the next command as proof of currency per [paragraph 10.4.4.2d](#).

10.5 Hydraulic Contamination Control Program (NAMPSOP)

10.5.1 References

- a. NAVAIR 01-1A-17 CH-2, Aviation Hydraulics Manual.
- b. NAVAIR 01-1A-20, Aviation Hose and Tube Manual.
- c. NAVAIR 17-15-521, Operations and Intermediate Maintenance Instruction with Illustrated Parts Breakdown Particle Counting System Part Number 8011-3.
- d. NAVAIR 17-15BF-97, Operation Instructions Hydraulic Particle Counter Type I, Type II.

10.5.2 Introduction

Hydraulic fluid contamination can cause hydraulic system failures and presents a serious threat to aircraft airworthiness and the operational readiness of support equipment (SE). All personnel managing or performing maintenance on naval aircraft hydraulic systems, components, and SE must be aware of the causes and effects of hydraulic contamination, and the procedures required to prevent contamination.

10.5.3 Requirements

10.5.3.1 Navy and Marine Corps Activities

All Navy and Marine Corps activities performing maintenance on naval aircraft hydraulic systems, components, and SE must comply with the Hydraulic Contamination Control Program.

10.5.3.2 Commercial activities and Other Government Agencies

Commercial activities and other government agencies performing contract maintenance, production, or other support functions on naval aircraft, related hydraulic systems, components, and SE shall comply with the Hydraulic Contamination Control Program requirements specified in contractual documentation.

10.5.3.3 Training and Designation

- a. All newly reporting maintenance personnel will receive Naval Aviation Maintenance Program (NAMPSOP) Indoctrination Training on the Hydraulic Contamination Control Program per [paragraph 10.1](#).
- b. Work Center Supervisors and maintenance personnel responsible for performing maintenance on aircraft, or SE hydraulic components and systems, and personnel certifying aircraft Safe For Flight must receive job-specific training on the hydraulic contamination control and testing requirements. At a minimum, training will include the applicable requirements specified in:
 - (1) COMNAVAIRFORINST 4790.2, [paragraph 10.5](#).
 - (2) NAVAIR 01-1A-17, NAVAIR 01-1A-20, NAVAIR 17-15-521, and NAVAIR 17-15BF-97.
 - (3) Type/model/series (T/M/S) aircraft or equipment technical manuals.
 - (4) Wing local command procedures (LCP).
- c. Hydraulic Contamination Control Analysis Technicians must be designated on a Hydraulic Contamination Control Analysis Technician Designation form ([Figure 10.5-1](#)) or Advanced Skills

Management (ASM) equivalent. Completion of the Hydraulic Contamination Control Qualification/Certification Worksheet (Figure 10.5-2) is a prerequisite for each designated analysis method.

NOTES: 1. Personnel certified as a Hydraulic Contamination Control Analysis Technician by a previous command operating the same T/M/S aircraft do not have to complete the required reading or on-job training (OJT) portions of the Hydraulic Contamination Control Qualification/Certification Worksheet (Figure 10.5-2). Those sections shall be annotated “Previously complied with at (command)” and the previous command certification records shall be retained in the individual’s qualification/certification record or ASM equivalent.

2. (O-level and I-level, only) Hydraulic Contamination Control Analysis Technicians assigned to activities using the Electronic Particle Counter as their primary means of testing must also be trained and certified on the Electronic Particle Counter and Contamination Analysis Kit (57L414).

3. (O-level and I-level, only) Hydraulic Contamination Control Analysis Technicians must pass an annual proficiency test in each method for which they are certified. The proficiency test must be based on an actual hydraulic sample witnessed by the QA Program Monitor and documented on a work order (WO) or maintenance action form (MAF).

10.5.3.4 Contamination Control

a. The contamination control measures of NAVAIR 01-1A-17 and NAVAIR 01-1A-20 will be complied with during all maintenance affecting aircraft or SE hydraulic systems or components.

b. All aircraft and SE internal and external hoses used to service or apply pressure to aircraft hydraulic systems must be marked or etched per NA 01-1A-20 or T/M/S maintenance technical manuals.

c. Whenever aircraft or SE hydraulic system integrity is broken, all affected fittings, lines, and components will immediately be capped or plugged (using approved closures).

d. Only SE authorized per NAVAIR 01-1A-17 will be used to dispense hydraulic fluid.

e. Uninstalled hydraulic components will be handled and stored in a manner that prevents contamination.

f. Work areas, tools, and equipment used to maintain or service hydraulic systems will be kept clean and free of potential contaminants per NAVAIR 01-1A-17.

10.5.3.5 Hydraulic Fluid Sampling and Analysis

a. Hydraulic fluid sampling and analysis must be performed on aircraft, hydraulic test equipment, and hydraulic SE after any maintenance that breaks the integrity of the hydraulic system. This includes hydraulic components removed and reinstalled to facilitate other maintenance. Sampling and analysis will be completed prior to the next flight of the affected aircraft or operation of the affected test equipment or SE.

b. An Electronic Particle Counter will be used to measure hydraulic fluid contamination levels, when available. The Contamination Analysis Kit (57L414) may be used when a particle counter is not available.

c. T/M/S maintenance technical manuals will be used to determine the maximum acceptable (passing) level of hydraulic fluid particulate contamination. If limits are not specified in T/M/S maintenance technical manuals, the acceptable limits in NAVAIR 01-1A-17 apply.

d. The decontamination procedures of T/M/S maintenance technical manuals will be performed to restore contaminated hydraulic systems to acceptable Navy class levels. If decontamination procedures are not specified in T/M/S maintenance technical manuals, the procedures of NAVAIR 01-1A-17 apply.

10.5.3.6 Analysis Documentation

a. Compliance with hydraulic fluid contamination analysis must be documented in the Corrective Action block of the WO or MAF for the discrepancy that required the analysis. If analysis was required due to replacement of a hydraulic component, the type of analysis conducted (Point of Delivery System (PODS) or Patch Test Kit) and Navy class results will be annotated on the WO or MAF documenting the component's replacement.

NOTE: Equipment Operational Capability (EOC) Code Z will be applied to separate WOs or MAFs directing hydraulic fluid contamination analysis following non-hydraulic system aircraft maintenance that required breaking hydraulic system integrity. For example, opening a hydraulic line or removing and replacing a hydraulic pump to facilitate other maintenance.

b. A logbook entry must be made to document hydraulic fluid analysis performed for acceptance inspections of aircraft and SE, and whenever analysis reveals, excessive contamination. The logbook entry must include the date of the sample, type contamination, class, method of decontamination, and reference. Entries will be made in the Miscellaneous/History section of the aircraft logbook, or Aeronautical Equipment Service Record (AESR) Miscellaneous/History (OPNAV 4790/25A), or Auto-Log-Set (ALS), or SE Custody and Maintenance History Record (OPNAV 4790/51), or ALS, respectively.

c. A Hydraulic Contamination Control Trend Analysis Chart ([Figure 10.5-3](#)) shall be maintained for each assigned aircraft, hydraulic test equipment, and SE requiring hydraulic fluid analysis. Entries in the chart must be made by a Quality Assurance Representative (QAR) designated as a Hydraulic Contamination Control Analysis Technician. At a minimum, the most current chart and the last completed chart will be on file.

NOTE: Activities that have sub-custody of hydraulic SE must maintain a copy of the items Hydraulic Contamination Control Trend Analysis Chart ([Figure 10.5-3](#)).

10.5.4 Responsibilities

10.5.4.1 Type Wing or MAW Model Manager and D-level Activities:

Publish an LCP per [Appendix D](#) to direct geographic, T/M/S specific, or other command directed actions for hydraulic contamination control not addressed in this NAMPSOP. At a minimum, the LCP must include:

a. A standardized training syllabus for NAMP Indoctrination Training and for T/M/S job specific training for each T/M/S aircraft assigned.

b. A standardized open book written test for Hydraulic Contamination Control Analysis Technician qualification, to include particle counter analysis procedures. O-level tests must also cover POD or Patch Testing. Tests must be reviewed annually.

10.5.4.2 Maintenance Officer:

a. Designate a qualified Hydraulic Contamination Control Analysis Technician as the Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.

b. Designate Hydraulic Contamination Control Analysis Technicians, per [paragraph 10.5.3.3](#).

c. Develop an LCP per [Appendix D](#), if required to address geographic, T/M/S specific, or command directed actions for hydraulic contamination control not addressed in this NAMPSOP. O-level Command LCPs must be submitted to the Type Wing or MAW for consideration of inclusion in the Wing LCP.

10.5.4.3 Program Manager:

a. Perform an assessment within 30 days of designation as Program Manager and annually thereafter per [paragraph 10.7](#).

b. Provide NAMP Indoctrination Training on the Hydraulic Contamination Program per [paragraph 10.5.3.3a](#).

c. Prior to endorsing their Hydraulic Contamination Control Designation ([Figure 10.5-1](#)), verify Hydraulic Contamination Control Analysis Technician nominees are fully trained and proficient per [paragraph 10.5.3.3c](#).

d. Update the Hydraulic Contamination Control Qualification/Certification Worksheet ([Figure 10.5-2](#)) when additional or updated required reading is added. O-level activities will notify the Type Wing or MAW Model Manager for consideration of inclusion in the training syllabus.

e. Maintain a program file to include:

- (1) Points of contact (POC).
- (2) A list of all assigned equipment and aircraft requiring hydraulic fluid sampling and analysis.
- (3) Program related correspondence and message traffic.
- (4) References or cross-reference locator sheets.
- (5) Most current Computerized Self Evaluation Checklist (CSEC) assessment.

10.5.4.4 QA Officer:

Designate a QAR qualified as a Hydraulic Contamination Control Analysis Technician as the Program Monitor. Designation will be in writing via the MMP or SME listing.

10.5.4.5 Program Monitor:

a. Perform audits of the Hydraulic Contamination Control Program per [paragraph 10.7](#).

b. Maintain the Hydraulic Contamination Control Trend Analysis Charts ([Figure 10.5-3](#)) for each assigned aircraft, hydraulic test equipment, and SE requiring hydraulic fluid analysis. At a minimum, maintain the current chart and the last completed chart on file.

c. Perform the annual proficiency test of designated Hydraulic Contamination Control Analysis Technicians. Testing must be based on an actual hydraulic fluid sample and documented on a WO or MAF.

d. Provide NAMP Indoctrination Training on the Hydraulic Contamination Control Program in the absence of the Program Manager.

10.5.4.6 Maintenance Control or Production Control:

a. Issue WOs or MAFs to conduct hydraulic fluid sampling and analysis per [paragraph 10.5.3.6](#).

b. Verify Hydraulic Contamination Control Trend Analysis Charts ([Figure 10.5-3](#)) are included in the aircraft logbook, or AESR Miscellaneous History (OPNAV 4790/25A), or ALS, or SE Custody and Maintenance History Record (OPNAV 4790/51) when aircraft or SE are transferred.

c. Verify aircraft logbook, or AESR Miscellaneous History (OPNAV 4790/25A), or ALS, and SE Custody and Maintenance History Record (OPNAV 4790/51), or ALS entries are made each time hydraulic system fluid analysis is performed.

d. Screen WOs or MAFs to verify hydraulic fluid analysis was conducted and results were annotated in the Corrective Action block per [paragraph 10.5.3.6](#).

10.5.4.7 Logs and Records:

a. Make required aircraft logbook entries per [paragraph 10.5.3.6](#).

b. Obtain the current Hydraulic Contamination Control Trend Analysis Chart ([Figure 10.5 3](#)) and the last completed chart from QA and place them in the aircraft logbook or SE Custody and Maintenance History Record (OPNAV 4790/51) prior to transfer.

10.5.4.8 Work Center Supervisor:

a. Verify NAMP Indoctrination Training on the Hydraulic Contamination Control Program was given to all newly reporting personnel per [paragraph 10.1](#).

b. Verify personnel have received job specific Hydraulic Contamination Control Training per [paragraph 10.5.3.3b](#).

c. Periodically observe work in progress to verify technicians are complying with hydraulic contamination control requirements per [paragraph 10.5.3.4](#).

d. Enforce high standards of housekeeping where hydraulic maintenance and sampling is performed per NAVAIR 01-1A-17.

e. Maintain Contamination Analysis Kits (57L414) and Electronic Particle Counters in ready for issue material (RFI) status.

10.5.4.9 Technicians:

a. Comply with hydraulic contamination control requirements per [paragraph 10.5.3.4](#).

d. Immediately report suspected hydraulic system contamination to the Work Center Supervisor.

From: _____
(Department Head)

To: _____
(Individual Designated)

(Hydraulic Contamination Control Program Manager)

Subj: HYDRAULIC CONTAMINATION CONTROL ANALYSIS TECHNICIAN
DESIGNATION

Ref: (a) COMNAVAIRFORINST 4790.2

1. You are designated as a Hydraulic Contamination Control Analysis Technician and shall perform your duties per reference (a).

2. I certify that I have read and understand the duties and responsibilities of the assigned billet and shall perform the duties to the best of my ability.

Individual Designated Signature Date

Hydraulic Contamination Control Program Manager Signature Date

Department Head Signature Date

**Original to:
Individual's Qualification/Certification Record**

Figure 10.5-1: Hydraulic Contamination Control Analysis Technician Designation (Sample)

COMNAVAIRFORINST 4790.2C
15 Jan 2017

NAME _____ RATE/RANK _____

A. REQUIRED READING:

- | | | |
|----------------------------------------------|-----------------|------------|
| 1. COMNAVAIRFORINST 4790.2
paragraph 10.5 | Signature _____ | Date _____ |
| 2. NAVAIR 01-1A-17 | Signature _____ | Date _____ |
| 3. NAVAIR 01-1A-20 | Signature _____ | Date _____ |
| 4. NAVAIR 17-15-521 | Signature _____ | Date _____ |
| 5. NAVAIR 17-15BF-97 | Signature _____ | Date _____ |
| 6. | Signature _____ | Date _____ |
| 7. | Signature _____ | Date _____ |
| 8. | Signature _____ | Date _____ |
| 9. | Signature _____ | Date _____ |
| 10. | Signature _____ | Date _____ |
| 11. | Signature _____ | Date _____ |
| 12. | Signature _____ | Date _____ |
| 13 | Signature _____ | Date _____ |

Blocks (6) through (13) are for T/M/S specific maintenance technical manuals.

NOTE: All required reading shall be accomplished prior to taking hydraulic samples and performing analysis.

B. OJT: Five samples must be taken, analyzed, and witnessed by a qualified Collateral Duty Inspector (CDI). The sixth sample shall be taken and analyzed while being monitored by a qualified QAR. (This section is required for both Contamination Analysis Kit and Electronic Particle Counter qualification.)

Sample Number	Sample Analyzed (Method)	Source (Type Equip)	Date	CDI/QAR Initials
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____

C. TESTING:

1. Demonstrate proficiency by taking and analyzing a sample while being monitored by a qualified QA Hydraulic Contamination Control Program Monitor.

2. Complete an open book Hydraulic Contamination Control Program written examination (Passing score 80% minimum).

Score _____ Date _____ QAR Signature _____

D. CERTIFICATION VERIFICATION/REQUEST:

The above named individual has satisfactorily completed all prerequisites for hydraulic system sample analysis certification.

 Hydraulic Contamination Control Program Manager Signature Date

Figure 10.5-2: Hydraulic Contamination Control Qualification/Certification Worksheet (Sample)

1. AIRCRAFT BUREAU NO. _____ SIDE NO. _____ SYSTEM _____

2. SUPPORT EQUIPMENT NOMENCLATURE _____

TEC _____ SERIAL NO. _____

OIL ANALYSIS HISTORY

DATE	CLASS	JCN	TAKEN BY	REASON	QAR

CLASS= (U) UNSAT; (1-5) FOR CLASSES 1 THROUGH 5

Figure 10.5-3: Hydraulic Contamination Control Trend Analysis Chart (Sample)

10.6 Tire and Wheel Maintenance Safety Program (NAMPSOP)

10.6.1 References

- a. OPNAVINST 5100.19, Navy Safety and Occupational Health (SOH) Program Manual for Forces Afloat.
- b. OPNAVINST 5100.23, Navy Safety and Occupational Health Program Manual.
- c. NAVAIR 00-80T-96 CH-1, US Navy Support Equipment Common Basic Handling & Safety Manual.
- d. NAVAIR 01-1A-20, Aviation Hose and Tube Manual.
- e. NAVAIR 01-1A-503, Maintenance of Aeronautical Antifriction Bearings.
- f. NAVAIR 01-1A-509-2, Cleaning and Corrosion Control, Volume II, Aircraft.
- g. NAVAIR 04-10-1, Organizational, Intermediate, and Depot Maintenance Instruction Aircraft Wheels.
- h. NAVAIR 04-10-506, Inspection, Maintenance, Repair, Storage, and Disposition Instructions O-level, I-level, and D-level Maintenance Aircraft Tires and Tubes.
- i. NAVAIR 04-10-508, Application Table for Aircraft Tires and Tubes.
- j. NAVAIR 15-01-500, Preservation of Naval Aircraft.
- k. NAVAIR 17-1-123, Tire Inflator Assembly Kit Part Number M85352/1 Dual Chuck Stem Gage Part Number M85352/4.
- l. NAVAIR 17-1-125, Support Equipment Cleaning, Preservation, and Corrosion Control.
- m. NAVAIR 17-1-129, Support Equipment Tire and Wheel Assemblies, O-level and I-level Maintenance Instructions.
- n. NAVAIR 17-15G-1, Aircraft Tire Inflator/Monitor Part Number 631AS100-1.
- o. NAVAIR 17-600-174-6-1, Tire Inflator Assembly Kit Part Number M85352/1, Dual Chuck Stem Gage Part Number M85352/4.
- p. NAVAIR 19-1-55, Aircraft Wheel Holder and Tire Bead Breaking Machine Models LEE-1 and LEE-1X.

10.6.2 Introduction

10.6.2.1 The Tire and Wheel Maintenance Safety Program establishes requirements for the safe maintenance, handling, and storage of aircraft, support equipment (SE), and Armament Weapons Support Equipment (AWSE) tires and wheels.

10.6.2.2 Mishandling aviation tires and wheels can result in injury or death of aviation maintenance personnel. The destructive potential of air or nitrogen under pressure is tremendous. Inflated and partially inflated tires must be handled with the same respect and precautions normally applied to handling live

ordnance. Many accidents have been caused by failure to follow established tire and wheel maintenance procedures and safety precautions, usually due to inadequate training and supervision.

10.6.2.3 The ISSC for aircraft tires is COMMANDING OFFICER, FRCSW NORTH ISLAND, CODE 4.3.4.4, SAN DIEGO, CA 92135-7058, DSN 735-8675 or COMM (619) 545-8675.

10.6.2.4 The ISSC for SE and AWSE tires and wheels is COMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.8.6.9, LAKEHURST NJ 08733-5000, DSN 624-7906 or COMM (732) 323-7906.

10.6.3 Requirements

10.6.3.1 All activities removing, replacing, servicing, handling, or performing tear down and buildup of aircraft, SE, and AWSE tire and wheel assemblies must comply with the Tire and Wheel Maintenance Safety Program.

10.6.3.2 Only specified I-level and D-level activities are authorized to tear down and buildup aircraft, SE, and AWSE tire and wheel assemblies.

10.6.3.3 Tires will not be discarded or scrapped until determined non-serviceable per NAVAIR 04-10-506.

10.6.3.4 Ready for issue (RFI) aircraft tire and wheel assemblies must not exceed 100 pounds per square inch gauge (PSIG) or 50 percent of test pressure, whichever is less, while being stored. RFI SE or AWSE tire and wheel assemblies must not exceed 15 PSIG or 50 percent of service pressure, whichever is less, while being stored. RFI aircraft tire and wheel assemblies being transported off station must not exceed 25 PSIG of pressure.

10.6.3.5 Wheel bearing periodic inspection and lubrication requirements of NAVAIR 01-1A-503 (aircraft) and NAVAIR 17-1-129 (SE or AWSE) must be strictly adhered to. All wheel bearings must be protected from contamination from abrasives, improper grease, solids, and fluids while in storage and during handling and installation.

10.6.3.6 Activities responsible for maintaining aircraft must publish a local MRC to check tire pressure every 7 days, unless tire pressure inspection is already included in type/model/series (T/M/S) aircraft 7 day Special Inspection and Preservation Check MRCs per paragraph 3-3a of NAVAIR 04-10-506 and paragraph 3-68 of NAVAIR 15-01-500.

NOTE: D-level activities will comply with 28-day tire pressure checks for tires in Level III preservation per paragraph 3-68 of NAVAIR 15-01-500.

10.6.3.7 A current Aircraft Tires, Tubes, and Wheels Inflation and Deflation Safety Precautions poster must be displayed in each work center performing tire and wheel assembly maintenance. Posters can be obtained by contacting: COMMANDER, NAVAL SAFETY CENTER, 375 A STREET, NORFOLK VA 23511-4399, DSN 564-3520 or COMM (757) 444-3520 or at Web site <http://www.public.navy.mil/navsafecen/>.

10.6.3.8 Training and Certification Requirements

a. All personnel involved with tire and wheel servicing or maintenance must be trained and certified for the specific tire and wheel servicing and maintenance tasks they perform. Training and certification will be documented on the applicable Tire and Wheel Maintenance Qualification and Certification form (Figures 10.6-1 through 10.6-5).

b. Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level (Figure 10.6-1) lists the minimum training and certification requirements for O-level aircraft tire and wheel maintenance.

c. Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level (Figure 10.6-2) lists the minimum training and certification requirement for O-level SE or AWSE tire and wheel maintenance.

d. Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level (Figure 10.6-3) lists the minimum training and certification requirements for I-level or D-level aircraft tire and wheel maintenance, as applicable to the T/M/S supported.

e. Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements – I-Level or D-Level (Figure 10.6-4) lists the minimum training and certification requirements for I-level or D-level SE or AWSE tire and wheel maintenance, as applicable to the equipment supported.

NOTES: 1 After initial I-level or D-level certification is completed, the Supplemental Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level (Figure 10.6-5) will be used to document training and certification on additional T/M/S or part number aircraft tires and wheels.

2. Personnel certified by a previous command on the same T/M/S aircraft, SE or AWSE tires and wheels may be certified by their new command if they completed the required reading and demonstrate practical proficiency to a tire and wheel certified Quality Assurance Representative (QAR), Collateral Duty Quality Assurance Representative (CDQAR), or Quality Assurance (QA) Specialist. All other sections on the Qualification and certification form will be annotated “Previously complied with”.

3. Requalification is not required after initial certification, unless certifying personnel for tire and wheel assemblies were not trained during their initial certification.

f. Tire and wheel maintenance training will emphasize the hazards associated with servicing and maintaining tire and wheel assemblies, to include proper procedures for inflating or deflating assemblies, handling and protecting bearings, and the hazards associated with handling beryllium (if applicable). O-level and I-level personnel must receive annual refresher training in tire and wheel maintenance hazards.

g. Initial tire and wheel maintenance training and annual refresher training will include the following training aids, as applicable:

(1) Required for all levels and types of aircraft tire and wheel maintenance: High Pressure Gases in Aviation (available on-line at www.dimoc.mil by entering PIN 24795 and selecting the “Contact Us” feature to request the video, via telephone at 1-888-743-4662, DSN 795-9872, or via email at dma_heat@mail.mil).

(2) Required for all levels and types of SE and AWSE tire and wheel maintenance: Servicing Single and Multi-Piece Wheel Rims (OSHA) 3086, (available online at <https://www.osha.gov/Publications/osha3086.pdf>).

(3) Required for I-level aircraft tire and wheel maintenance: Rebuilding High-Speed High-Performance Naval Aircraft Tires (available on-line at www.dimoc.mil by entering PIN 25784 and selecting the “Contact Us” feature to request the video, via telephone at 1-888-743-4662, DSN 795-9872, or via email dma_heat@mail.mil).

h. Supply Department personnel who handle tires and wheels must be trained on the hazards and safety procedures associated with handling inflated and deflated tire and wheel assemblies and components containing beryllium.

i. Tire and wheel training and certification documentation will be filed in each member's Individual Qualification and Certification record per [paragraph 10.1](#). Personnel recertified based on training at a previous command must keep their original qualification package on file along with their current command qualification and certification record.

10.6.4 Responsibilities

10.6.4.1 Type Wing or Marine Aircraft Wing (MAW):

Publish local command procedures (LCP) per [Appendix D](#) with an O-level tire and wheel maintenance training and testing syllabus tailored for each T/M/S aircraft maintained. The syllabus must contain the minimum requirements from ([Figures 10.6-1](#) and [10.6-2](#)). Testing must include an open book written test (minimum passing score is 90 percent) with emphasis on safety requirements and a practical proficiency demonstration examination.

10.6.4.2 Maintenance Officer (MO):

a. Designate a certified tire and wheel individual as the Tire and Wheel Maintenance Safety Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.

(1) Activities performing O-level aircraft tire and wheel servicing or maintenance must designate an Aircraft Tire and Wheel Maintenance Safety Program Manager.

(2) Activities performing O-level SE or AWSE tire and wheel servicing or maintenance must designate an SE and AWSE Tire and Wheel Maintenance Safety Program Manager.

(3) I-level and D-level activities performing tear down and buildup of aircraft, SE, and AWSE wheel assemblies must designate an Aircraft Tire and Wheel Maintenance Safety Program Manager and an SE and AWSE Tire and Wheel Maintenance Safety Program Manager.

NOTE: The Aircraft Tire and Wheel Maintenance Safety Program Manager and the SE and AWSE Tire and Wheel Maintenance Safety Program Manager may be the same individual, provided they are certified in each area.

b. (O-level) Publish an LCP per [Appendix D](#), if required to direct geographic, T/M/S specific, or command directed actions for tire and wheel maintenance safety not addressed in this NAMPSOP or the Type Wing and MAW LCP. O-level LCPs will be submitted to the Type Wing and MAW for consideration of incorporation in the Wing LCP.

c. (I-level and D-level) Publish an LCP per [Appendix D](#) specific to the type of tire and wheel maintenance being performed, with a training syllabus for each T/M/S aircraft, SE, or AWSE supported that contains, as a minimum, all requirements of ([Figures 10.6-3](#) and [10.6-4](#)).

d. Certify personnel who have completed tire and wheel maintenance requirements in writing using ([Figures 10.6-1](#) through [10.6-4](#)). O-level and I-level MOs may not delegate this authority.

10.6.4.3 Supply Officer:

Verify supply personnel who handle tires and wheels are trained per [paragraph 10.6.3.8h](#). Supply Departments without the required expertise to conduct training will use tire and wheel maintenance safety certified I-level, D-level, or Naval Aviation Technical Data and Engineering Service Command (NATEC) personnel. Annual refresher training is required. Training must be documented in the Individual's Qualification and Certification record.

10.6.4.4 Tire and Wheel Maintenance Safety Program Manager:

- a. Be knowledgeable of the references listed in [paragraph 10.6.1](#) applicable to the tire and wheel maintenance performed by their command, and the procedures of this NAMPSOP.
- b. Perform a program assessment within 30 days of assignment and annually thereafter, per [paragraph 10.7](#).
- c. Provide NAMP indoctrination training on the Tire and Wheel Maintenance Safety Program per [paragraph 10.1](#).
- d. Interview personnel nominated for tire and wheel certification, prior to signing their qualification and certification form. The interview must include verification of the candidate's knowledge of all aspects of tire and wheel maintenance safety, with emphasis on hazards associated with inflating and deflating tires, procedures for handling and protecting bearings, and the hazards associated with beryllium.
- e. Provide annual refresher training to certified tire and wheel maintenance personnel per [paragraph 10.6.3.8f and 10.6.3.8g](#).
- f. Maintain a program file to include:
 - (1) POCs.
 - (2) Program correspondence and message traffic.
 - (3) References or cross-reference locator sheets.
 - (4) A current list of certified tire and wheel maintenance personnel.
 - (5) Most current Computerized Self Evaluation Checklist (CSEC) assessment.

10.6.4.5 QA Officer:

Designate a certified Tire and Wheel Maintenance QAR as the Program Monitor. Designation will be in writing via the MMP or SME listing.

10.6.4.6 QA Tire and Wheel Maintenance Safety Program Monitor:

- a. Perform program audits per [paragraph 10.7](#).
- b. (I-level and D-level) Develop an open book written exam (minimum passing score is 90 percent for aircraft tire and wheel, and 80 percent for SE and AWSE tire and wheel), with emphasis on safety precautions.
- c. (O-level) Use the written exam generated by the Type Wing or MAW (minimum passing score is 90 percent).

NOTE: Any QAR or QA Specialist may administer the written test, but only tire and wheel certified QAR or QA Specialists will administer the practical proficiency exam.

10.6.4.7 Work Center Supervisor:

- a. Verify trainees have completed all required reading and safety videos prior to permitting them to start tire and wheel maintenance on-job training (OJT).
- b. Verify personnel have been trained and certified prior to assignment to independently perform tire and wheel servicing or maintenance.
- c. Periodically spot check work in progress to verify:
 - (1) Only certified personnel are independently performing tire and wheel maintenance.
 - (2) Trainees performing OJT are under the direct supervision of a certified tire and wheel maintenance technician throughout the entire maintenance evolution.
 - (3) Personnel are complying with tire and wheel maintenance procedures and safety precautions.

10.6.4.8 Maintenance Personnel:

- a. Service or perform maintenance on tire and wheel assemblies only if certified or under the direct supervision of certified tire and wheel maintenance personnel.
- b. Strictly comply with tire and wheel servicing, handling, safety precautions, and maintenance procedures for the specific T/M/S aircraft, SE, or AWSE maintained.
- c. Handle and protect wheel bearings per NAVAIR 01-1A-503 (aircraft) and NAVAIR 17-1-129 (SE and AWSE).

COMNAVAIRFORINST 4790.2C
15 Jan 2017

Command: _____ W/C: _____ Date: _____
 Name: _____ Rate/Rank: _____
 W/C Supervisor Indoc: Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2 para. 10.6	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96 W/P 4, 5, 7	_____	_____	_____
E. NAVAIR 01-1A-20 W/P 00600 paras. 28 and 29	_____	_____	_____
F. NAVAIR 01-1A-503	_____	_____	_____
G. NAVAIR 01-1A-509-2	_____	_____	_____
H. NAVAIR 04-10-1	_____	_____	_____
I. NAVAIR 04-10-506	_____	_____	_____
J. NAVAIR 04-10-508	_____	_____	_____
K. NAVAIR 17-1-123	_____	_____	_____
L. NAVAIR 17-15G-1	_____	_____	_____
M. NAVAIR 17-600-174-6-1	_____	_____	_____
N. Applicable maintenance technical manuals (List each applicable publication)	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

2. Training Aids:	Trainee Initials	Supervisor Signature	Date
High Pressure Gases In Aviation (24795)	_____	_____	_____

NOTE: All required reading and training aids must be completed prior to starting OJT.

3. Completed Phase I and Phase II SE license training for Nitrogen Servicing Equipment

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician certified in tire and wheel maintenance will sign off and date each area of OJT each time the individual performs a task under supervision (applicable for A through J).

NOTE: Each OJT area requires a minimum of three tasks for each T/M/S.

A. (T/M/S) _____ Nose/Tail Wheel Assembly	Signature	Date
Bearings Removal/Cleaning/Inspection/Handling/ Lubrication/Installation	_____	_____
	_____	_____

Figure 10.6-1 (page 1): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level

	Signature	Date
B. (T/M/S) _____ Main Mount Wheel Bearings Removal/Cleaning/Inspection/Handling/ Lubrication/Installation	_____	_____
C. (T/M/S) _____ Outrigger Wheel Bearings Removal/Cleaning/Inspection/Handling/ Lubrication/Installation	_____	_____
D. (T/M/S) _____ Nose/Tail Wheel Assembly Deflation/Removal/Inspection/Handling/ Lubrication/Installation/Service	_____	_____
E. (T/M/S) _____ Main Mount Wheel Assembly Deflation/Removal/Inspection/Handling/ Lubrication/Installation/Service	_____	_____
F. (T/M/S) _____ Outrigger Wheel Assembly Deflation/Removal/Inspection/Handling/ Lubrication/Installation/Service	_____	_____
G. (T/M/S) _____ Operation of Remote Inflator Assembly	_____	_____
H. (T/M/S) _____ Aircraft Jacking Procedures	_____	_____
I. Documentation Procedures	_____	_____
J. Beryllium Safety Procedures (if applicable)	_____	_____

5. Certification: A QAR certified in tire and wheel maintenance will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions. One separate line for each T/M/S is required (applicable for A through J).

A. (T/M/S) _____ Nose/Tail Wheel Bearings Removal/Inspection/Handling/Installation

Signature: _____ Date: _____

Figure 10.6-1 (page 2): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level

COMNAVAIRFORINST 4790.2C
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- B. (T/M/S) _____ Main Mount Wheel Bearings Removal/Inspection/Handling/Installation
Signature: _____ Date: _____
- C. (T/M/S) _____ Outrigger Wheel Bearings Removal/Inspection/Handling/Installation
Signature: _____ Date: _____
- D. (T/M/S) _____ Nose/Tail Wheel Assembly Removal/Inspection/Handling/Installation/Serviceing
Signature: _____ Date: _____
- E. (T/M/S) _____ Main Mount Wheel Assembly Removal/Inspection/Handling/Installation/Serviceing
Signature: _____ Date: _____
- F. (T/M/S) _____ Outrigger Wheel Assembly Removal/Inspection/Handling/Installation/Serviceing
Signature: _____ Date: _____
- G. (T/M/S) _____ Operation of Remote Inflator Assembly
Signature: _____ Date: _____
- H. (T/M/S) _____ Aircraft Jacking Procedures
Signature: _____ Date: _____
- I. (T/M/S) _____ Documentation Procedures
Signature: _____ Date: _____
- J. (T/M/S) _____ Beryllium Safety Procedures (if applicable)
Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

QAR Signature: _____ Date: _____

Figure 10.6-1 (page 3): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

This is to certify: _____ has successfully completed all established requirements for aircraft tire and wheel servicing and handling and is qualified to perform tire and wheel servicing and handling on:

(T/M/S) (Main/Nose/
Tail/Outrigger Assy)

(MO Initials)

(T/M/S) (Main/Nose/
Tail/Outrigger Assy)

(MO Initials)

(T/M/S) (Main/Nose/
Tail/Outrigger Assy)

(MO Initials)

(T/M/S) (Main/Nose/
Tail/Outrigger Assy)

(MO Initials)

(T/M/S) (Main/Nose/
Tail/Outrigger Assy)

(MO Initials)

(T/M/S) (Main/Nose/
Tail/Outrigger Assy)

(MO Initials)

MO Signature: _____ Date: _____

Original to:
Individual's Qualification/Certification Record

Figure 10.6-1 (page 4): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level

Command: _____ W/C: _____ Date: _____
 Name: _____ Rate/Rank: _____
 W/C Supervisor Indoc: Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96	_____	_____	_____
E. NAVAIR 01-1A-20	_____	_____	_____
F. NAVAIR 17-1-123	_____	_____	_____
G. NAVAIR 17-1-125	_____	_____	_____
H. NAVAIR 17-1-129	_____	_____	_____
I. NAVAIR 17-600-174-6-1	_____	_____	_____
J. NAVAIR 01-1A-503	_____	_____	_____
K. NAVAIR 01-1A-509-2	_____	_____	_____
L. Applicable maintenance technical manuals. (List each applicable publication)	_____	_____	_____
	_____	_____	_____
2. Training Aids:	Trainee Initials	Supervisor Signature	Date
Servicing Single and Multi-Piece Wheel Rims (OSHA 3086)	_____	_____	_____
High Pressure Gases In Aviation (24795)	_____	_____	_____

NOTE: All required reading and training aids must be completed prior to starting OJT.

3. Completed Phase I and Phase II SE license training for Nitrogen Servicing Equipment (if used):

NOTE: Not required for AWSE qualifications and certifications.

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician certified in tire and wheel maintenance will sign off/date each area of OJT each time the individual performs a task under supervision (applicable for A through H).

NOTE: Each OJT area requires a minimum of three tasks for each type assembly.

Figure 10.6-2 (page 1): Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level

	Signature	Date
A. Bearings/Removal, Cleaning/ Inspection/Handling/Lubrication/Installation (if applicable)	_____	_____
B. Solid Rim Deflation/Removal/ Replacement/Service	_____	_____
C. Split Rim Deflation/Removal Replacement/Service	_____	_____
D. Demountable Flange Deflation/ Removal/Inspection/Service	_____	_____
E. SD-2 Spotting Dolly Deflation/ Removal/Replacement/Service (if applicable)	_____	_____
F. Operation of Ship's Nitrogen/ Air Servicing Equipment/Remote Inflator Assembly (if applicable)	_____	_____
G. Equipment Jacking Procedures	_____	_____
H. Documentation Procedures	_____	_____

5. Certification: A QAR certified in tire and wheel maintenance will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.

A. Bearing Removal/Cleaning/Inspection/Handling/Lubrication/Installation (if applicable)

Signature: _____ Date: _____

B. Solid Rim Deflation/Removal/Replacement/Service

Signature: _____ Date: _____

C. Split Rim Deflation/Removal/Replacement/Service

Signature: _____ Date: _____

Figure 10.6-2 (page 2): Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level

D. Demountable Flange Deflation /Removal/Replacement /Service

Signature: _____ Date: _____

E. SD-2 Spotting Dolly Deflation/Removal/Replacement/Service (if applicable)

Signature: _____ Date: _____

F. Operation of Ship's Nitrogen/Air Servicing Equipment/Remote Inflator Assembly

Signature: _____ Date: _____

G. Equipment Jacking Procedures

Signature: _____ Date: _____

H. Documentation Procedures

Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

QAR Signature: _____ Date: _____

Figure 10.6-2 (page 3): Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements - O-Level

Program Manager Recommendation

Program Manager Signature: _____

Date: _____

This is to certify: _____ has successfully completed all established requirements for SE and AWSE servicing and handling and is qualified to perform tire and wheel servicing and handling on:

_____ Solid Rim (Type Assembly)	_____ (MO Initials)	_____ Split Rim (Type Assembly)	_____ (MO Initials)
_____ Demountable Flange (Type Assembly)	_____ (MO Initials)	_____ SD-2 Spotting Dolly (Type Assembly)	_____ (MO Initials)
_____ (Type Assembly)	_____ (MO Initials)	_____	_____

MO Signature: _____

Date: _____

Original to:

Individual's Qualification and Certification Record

Figure 10.6-2 (page 4): Support Equipment and Armament Weapons Support Equipment Tire/Wheel Maintenance Qualification and Certification Requirements - O-Level

COMNAVAIRFORINST 4790.2C
15 Jan 2017

Command: _____ W/C: _____ Date: _____

Name: _____ Rate/Rank: _____

W/C Supervisor Indoc: Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96	_____	_____	_____
E. NAVAIR 01-1A-20, para 5-4, a/b	_____	_____	_____
F. NAVAIR 01-1A-503	_____	_____	_____
G. NAVAIR 01-1A-509-2	_____	_____	_____
H. NAVAIR 04-10-1	_____	_____	_____
I. NAVAIR 04-10-506	_____	_____	_____
J. NAVAIR 04-10-508	_____	_____	_____
K. NAVAIR 17-1-123	_____	_____	_____
L. NAVAIR 17-15G-1	_____	_____	_____
M. NAVAIR 17-600-174-6-1	_____	_____	_____
N. NAVAIR 19-1-55	_____	_____	_____
Applicable maintenance technical manuals (List each applicable publication)	_____	_____	_____

2. Training Aids:	Trainee Initials	Supervisor Signature	Date
High Pressure Gases In Aviation (24795)	_____	_____	_____
Rebuilding High-Speed High-Performance Naval Aircraft Tires (25784)	_____	_____	_____

NOTE: All required reading and training aids must be completed prior to starting OJT.

3. Completed Phase I and Phase II SE license training for Nitrogen Servicing Equipment:

NOTE: Not required for AWSE qualifications and certifications.

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician certified in tire and wheel maintenance will sign off and date each area of OJT each time the individual performs a task under supervision (applicable for A through I).

NOTE: Each OJT area requires a minimum of three tasks for each P/N.

	Signature	Date
A. (P/N) _____ Tire /Wheel Assembly	_____	_____
Bearings Removal/Cleaning/Inspection	_____	_____
Lubrication/Installation	_____	_____

Figure 10.6-3 (page 1): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

B. (P/N) _____ Tire /Wheel Assembly
Tear Down/Build-Up

C. (P/N) _____ Tire /Wheel Assembly
Bearings Removal/Cleaning/Inspection
Lubrication/Installation

D. (P/N) _____ Tire /Wheel Assembly
Tear Down/Build-Up

E. Use of Bead Breaker (if applicable)

F. Use of Inflation Cage

G. Operations of Nitrogen Servicing
Equipment/Remote Inflator/Monitor
Assembly

H. Documentation Procedures

I. Use/Handling of Beryllium

5. Certification: A QAR or QA Specialist, certified in tire and wheel maintenance, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions. One separate line for each T/M/S is required (applicable for A through I). An artisan certified in tire and wheel maintenance and designated in writing by the Production Control officer or equivalent officer as certifier for tire and wheel practical examinations, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.

A. (P/N) _____ Tire/Wheel Assembly Bearings Removal/Cleaning/Inspection/Lubrication
Installation

Signature: _____ Date: _____

B. (P/N) _____ Tire/Wheel Assembly Tear Down/Build-Up

Signature: _____ Date: _____

Figure 10.6-3 (page 2): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

C. (P/N) _____ Tire/Wheel Assembly Bearings Removal/Cleaning/Inspection/Lubrication
Installation

Signature: _____ Date: _____

D. (P/N) _____ Tire/Wheel Assembly Tear Down/Build-Up

Signature: _____ Date: _____

E. Use of Bead Breaker (if applicable)

Signature: _____ Date: _____

F. Use of Inflation Cage

Signature: _____ Date: _____

G. Operation of Ship's Nitrogen Servicing Equipment/Remote Inflator/Monitor Assembly (if applicable)

Signature: _____ Date: _____

H. Documentation Procedures

Signature: _____ Date: _____

I. Use/Handling of Beryllium Assemblies (if applicable)

Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

QAR, QA Specialist, or
Certified Artisan Signature: _____ Date: _____

Figure 10.6-3 (page 3): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

This is to certify: _____ has successfully
completed all established requirements for aircraft tire and wheel tear down and build-up and is qualified to
perform tire and wheel maintenance on:

(P/N Tire/Wheel Assembly) (MO Initials) (Type Assembly) (MO Initials)
MO or FRC Equivalent Officer Signature: _____ Date: _____

Original to:

Individual's Qualification and Certification Record

Figure 10.6-3 (page 4): Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

COMNAVAIRFORINST 4790.2C
15 Jan 2017

Command: _____ W/C: _____ Date: _____

Name: _____ Rate/Rank: _____

W/C Supervisor Indoc Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96	_____	_____	_____
E. NAVAIR 01-1A-20, para 5-4, a/b	_____	_____	_____
F. NAVAIR 17-1-123	_____	_____	_____
G. NAVAIR 17-1-125	_____	_____	_____
H. NAVAIR 17-1-129	_____	_____	_____
I. NAVAIR 17-600-174-6-1	_____	_____	_____
J. NAVAIR 19-1-55	_____	_____	_____
K. Applicable maintenance technical manuals (List each applicable publication)	_____	_____	_____

2. Training Aids:	Trainee Initials	Supervisor Signature	Date
Servicing Single and Multi-Piece Wheel Rims (OSHA 3086)	_____	_____	_____
High Pressure Gases In Aviation (24795)	_____	_____	_____

NOTE: All required reading and training aids must be completed prior to starting OJT.

3. Completed Phase I and Phase II SE license training for Nitrogen Servicing Equipment (if used):

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician certified in tire and wheel maintenance will sign off and date each area of OJT each time the individual performs a task under supervision (applicable for A through I).

NOTE: Each OJT area requires a minimum of three tasks for each type assembly.

	Signature	Date
A. Bearings/Removal Cleaning/Inspection Handling/ Lubrication/Installation (if applicable)	_____	_____
	_____	_____

Figure 10.6-4 (page 1): Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

- B. Tear Down/Build-Up Inflation of Solid Rim Assembly _____

- C. Tear Down/Build-Up Inflation of Split Rim Assembly _____

- D. Tear Down/Build-Up Inflation of Demountable Flange Assembly _____

- E. Tear Down/Build-Up Inflation of SD-2 Spotting Dolly (if applicable) _____

- F. Use of Bead breaker (if applicable) _____

- G. Use of Inflation Cage _____

- H. Operation of Nitrogen/Air Servicing Equipment/Remote Inflator
Assembly _____

- I. Documentation Procedures _____

5. Certification: A QAR or QA Specialist certified in tire and wheel maintenance will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.

- A. Bearing Handling/Lubrication Procedures (if applicable)

Signature: _____ Date: _____

- B. Tear down/Build-Up/Inflation of Solid Rim Assembly (if applicable)

Signature: _____ Date: _____

Figure 10.6-4 (page 2): Support Equipment/Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

C. Tear Down/Build-Up/Inflation of Split Rim Assembly

Signature: _____ Date: _____

D. Tear Down/Build-Up/Inflation of Demountable Flange Assembly

Signature: _____ Date: _____

E. Tear Down/Build-Up/Inflation of SD-2 Spotting dolly Assembly (if applicable)

Signature: _____ Date: _____

F. Use of Bead Breaker (if applicable)

Signature: _____ Date: _____

G. Use of Inflation Cage

Signature: _____ Date: _____

H. Operation of Air Servicing Equipment/Remote Inflator Assembly

Signature: _____ Date: _____

I. Documentation Procedures

Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

QAR or QA Specialist Signature: _____ Date: _____

Figure 10.6-4 (page 3): Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification/Certification Requirements - I-Level or D-Level

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

has successfully

This is to certify: _____
completed all established requirements for SE and AWSE servicing and handling and is qualified to perform tire
and wheel servicing and handling on:

<u>Solid Rim</u> (Type Assembly)	<u>(MO Initials)</u>	<u>Split Rim</u> (Type Assembly)	<u>(MO Initials)</u>
<u>Demountable</u> <u>Flange</u> (Type Assembly)	<u>(MO Initials)</u>	<u>SD-2 Spotting</u> <u>Dolly</u> (Type Assembly)	<u>(MO Initials)</u>
<u>(Type Assembly)</u>	<u>(MO Initials)</u>	<u>(Type Assembly)</u>	<u>(MO Initials)</u>

MO Signature: _____ Date: _____

Original to:

Individual's Qualification/Certification Record

Figure 10.6-4 (page 4): Support Equipment and Armament Weapons Support Equipment Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

SUPPLEMENTAL TIRE AND WHEEL CERTIFICATION

1. Required Reading: (applicable sections) Trainee Initials Supervisor Signature Date
 A. Applicable maintenance technical manuals _____

2. OJT: A certified technician will sign off and date each area of OJT each time the individual performs a task under supervision (applicable for A and B).

NOTE: Each OJT area requires a minimum of three tasks for each P/N.

		Signature	Date
A. (P/N) _____	Tire/Wheel Assembly	_____	_____
	Bearings Removal/Cleaning/Inspection	_____	_____
	Lubrication/Installation	_____	_____
B. (P/N) _____	Tire/Wheel Assembly	_____	_____
	Tear Down/Build-Up	_____	_____
		_____	_____

3. Certification: A QAR or QA Specialist certified in tire and wheel maintenance will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.

A. (P/N) _____ Tire/Wheel Assembly Bearings Removal/Cleaning/Inspection/Lubrication
 Installation

Signature: _____ Date: _____

B. (P/N) _____ Tire/Wheel Assembly Tear Down/Build-Up

Signature: _____ Date: _____

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

This is to certify _____ has successfully completed all established requirements for aircraft tire and wheel tear down and build-up and is qualified to perform tire/wheel maintenance on:

 P/N Tire/Wheel Assembly (MO Initials) P/N Tire/Wheel Assembly (MO Initials)

MO Signature: _____ Date: _____

Original to:
 Individual's Qualification/Certification Record

Figure 10.6-5: Supplemental Aircraft Tire and Wheel Maintenance Qualification and Certification Requirements - I-Level or D-Level

10.7 NAMP Compliance Auditing Program (NAMPSOP)

10.7.1 Reference

NAVAIRINST 4855.1, Corrective and Preventive Action Process Instruction

10.7.2 Introduction

10.7.2.1 The NAMP Compliance Auditing Program is a systematic process for aviation maintenance activities to verify their adherence to the NAMP.

10.7.2.2 Auditors are responsible for verifying compliance by thoroughly examining aircraft, equipment, records, documentation, and personnel involved in the process. The key factors to the effectiveness of an audit are the auditor's knowledge of the process being examined, their attention to detail, and sampling a sufficient percentage of the aircraft, equipment, records, and personnel involved.

10.7.2.3 For the purpose of this NAMPSOP, all maintenance processes listed in Figure 10.7-1 and 10.7-2 are referred to as "programs". Figure 10.7-1 lists the programs audited by O-level and I-level activities. Figure 10.7-2 lists the programs audited by D-level activities.

10.7.2.4 NAMP Compliance Audit Categories:

a. Program Manager assessments are in-depth examinations of the status of a program throughout the activity, and are performed by the designated Program Manager.

b. Quality Assurance (QA) audits are random sample audits conducted on certain programs throughout the activity, and are performed by the QA Representative designated as Program Monitor.

c. O-level and I-level work center audits are compliance reviews performed jointly by the Division Officer and Division or Branch Chief to assess individual work centers for:

- (1) Correct manning per the authoritative manpower document.
- (2) Adequate numbers of certified or designated personnel assigned to accomplish the workload, for example; Collateral Duty Quality Assurance Representatives (CDQAR), Collateral Duty Inspectors (CDI), and Plane Captains.
- (3) Adequate material condition of equipment, tools, and facilities.
- (4) Compliance with maintenance safety requirements and Navy Occupational Safety and Health or Occupational Safety and Health Administration regulations.
- (5) Cleanliness and condition of workspaces.
- (6) Compliance with all processes or programs the work center is required to comply with, for example; tool inventory procedures, foreign object damage (FOD) prevention, and electrostatic discharge protection.
- (7) Compliance with fire and safety regulations.

d. Special audits are performed to investigate suspected or known compliance problems in specific programs or work centers.

10.7.2.5 The Computerized Self Evaluation Checklist (CSEC) is the standardized list of questions and references for conducting NAMP Compliance Audits. Additionally, the CSEC database serves as the repository for collecting and tracking discrepancy and corrective action data.

NOTE: D-level activities will maintain the CSEC within Electronic Continual Analysis and Metrics (eCAM), and will use the eCAM Audit Tracking System (ATS) to track and collect audit data and generate audit reports.

a. The CSEC database is divided into three categories that denote which activity is conducting the audit: Aviation Maintenance Management Team (AMMT), Type Wing, and Activity.

(1) The AMMT database is used by COMNAVAIRFOR and COMNAVAIRSYSCOM AMMTs when conducting Aviation Maintenance Inspections (AMI) and Maintenance Program Assessments (MPA).

(2) The Wing database is used by Type Wings and Marine Aircraft Wing (MAWs) when conducting MPAs.

(3) The Activity database is used by O-level and I-level activities when auditing programs and individual work centers.

b. COMNAVAIRFOR N422C NAMP Policy is the lead for the O-level and I-level CSEC. COMNAVAIRSYSCOM 5.0D is the lead for the D-level CSEC. CSECs can be downloaded from the NAVAIR Web site at (<http://www.navair.navy.mil/logistics/csec>).

10.7.3 Requirements

10.7.3.1 O-level and I-level activities must conduct Program Manager assessments, QA audits, and work center audits for applicable programs (Figure 10.7-1) at least once every 12 months.

10.7.3.2 D-level activities must audit all programs listed in D-Level NAMP Compliance Audits (Figure 10.7-2) at least once every 12 months.

10.7.3.3 The most current version of the CSEC will be used for conducting audits. Type Wing or MAW Supplemental CSECs will be used, if applicable.

10.7.3.4 Audit discrepancies and corrective actions will be entered in QAs CSEC database.

NOTE: D-level activities will maintain the CSEC within eCAM and use the eCAM ATS to track and collect audit data and generate audit reports.

a. Discrepancies will be corrected within 10 working days from the completion of the audit.

NOTE: D-level activities will comply with the corrective action timelines specified in NAVAIR Instruction 4855.1.

b. Corrective action for Program Manager assessments and QA audits will be tracked by the designated Program Manager.

c. Corrective action for work center audits will be tracked by the responsible Division Officer or Division Chief.

10.7.3.5 Special audits will be conducted as necessary.

10.7.4 Responsibilities

10.7.4.1 COMNAVAIRSYSCOM:

- a. (AIR-6.8.2.2) Maintain the CSEC software and core question database on the NAVAIR Web site at (<http://www.navair.navy.mil/logistics/csec/>).
- b. (AIR-5.0D) Approve changes to the CSEC used by D-level activities.

10.7.4.2 COMNAVAIRFOR N422C:

- a. Approve changes to the O-level and I-level CSEC.
- b. Review and update the O-level and I-level CSEC database no later than the first week of January, April, July, and October.

10.7.4.3 Type Wings and MAWS:

Publish CSEC Supplemental questions if needed to address requirements specific to the type of aircraft maintained or unique processes covered by Wing LCPs.

10.7.4.4 Maintenance Officer (MO):

- a. Designate a Program Manager for each applicable program ([Figure 10.7-1](#) or [Figure 10.7-2](#)). If a specific billet is not specified to be Program Manager, or is not specified in a NAMPSOP, the MO will designate the individual whose rate or experience best qualifies them to be the Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.
- b. Review Program Manager assessments and QA audits and provide direction on corrective actions, as required.
- c. Direct special audits when deemed necessary, and specify the scope of the audit and who will conduct it.
- d. Publish an LCP per [Appendix D](#), if required to specify command audit procedures not addressed in this NAMPSOP. Squadron LCPs will be submitted to the Type Wing or MAW for consideration of developing a Wing LCP.

10.7.4.5 Quality Assurance Officer:

- a. Designate Program Monitors for each applicable program ([Figure 10.7-1](#) or [Figure 10.7-2](#)). Designation will be in writing via the MMP or SME listing:
 - (1) Program Monitors must be qualified as specified in the applicable NAMPSOPs per [Chapter 10](#). If qualifications are not specified in a NAMPSOP, the QAR whose rate or experience best qualifies them to perform the audit will be designated as Program Monitor.
 - (2) Program Monitors will be assigned for a minimum of one year.
- b. Provide the Program Manager and MO with recommendations for improving quality and preventing recurrence of common discrepancies.

10.7.4.6 NAMP Compliance Auditing Program Manager:

- a. Perform a Program Manager assessment of the NAMP Compliance Auditing Program within 30 days of designation and annually thereafter.
- b. Provide indoctrination training on the NAMP Compliance Auditing Program per [paragraph 10.1](#).
- c. Provide training to Program Managers, Program Monitors, Division Officers, Division Chiefs, and Work Center Supervisors on their auditing responsibilities, and procedures for entering data in the CSEC and printing audit reports.
- d. Maintain the CSEC database on a QA Division computer.

NOTE: D-level activities will maintain the CSEC within eCAM and use the eCAM ATS to track and collect audit data and generate audit reports.

- e. Check for an updated CSEC the second week of January, April, July, and October. Download the updated CSEC and distribute copies of applicable sections to designated Program Managers.
- f. Coordinate the auditing schedule with Program Managers and Division Officers, and publish an annual schedule of Program Manager assessments, QA audits, and work center audits in January of each year.

NOTE: D-level activities will publish an annual schedule of Program Manager assessments and QA audits in October of each fiscal year.

- g. Track the completion of audits and verify results are entered in the CSEC database (eCAM ATS for D-level activities).
- h. Review discrepancies in QA audits and special audits for indications of poor quality or unsafe maintenance practices. Provide corrective action recommendations to the QA Officer to improve quality and prevent recurrence.
- i. Route completed QA audits and special audits to the MO, via the QAO. When returned from the MO, provide copies of the audit to the designated Program Manager.

NOTE: D-level audit data is electronically routed via eCAM ATS RSuper distribution list selected by assigned lead auditors.

- j. Maintain the last two QA audits (electronic or hardcopy) on file. The audit file must include, at a minimum, the completed CSEC discrepancy sheets, corrective actions, and accompanying routing forms.

NOTE: D-level activities will maintain audit files for a minimum of two years.

- k. Maintain a program file to include:
 - (1) POCs.
 - (2) Program related correspondence and message traffic.
 - (3) References or cross-reference locator sheets.
 - (4) Most current CSEC assessment.

10.7.4.7 Program Monitors:

- a. Be thoroughly familiar with the CSEC sections applicable to their programs, including the policy in the references cited in each CSEC question.
- b. Perform the annual QA audit for designated programs.
- c. Conduct a random sample of at least 25% of the population of aircraft, equipment, records, documentation and personnel. If a program affects multiple divisions, the sample must include at least 25% of the process in each division.

10.7.4.8 Program Managers:

- a. Be thoroughly familiar with the CSEC sections applicable to their programs, including the policy in the references cited in each CSEC question.
- b. Complete an initial Program Manager assessment of their programs within 30 days of assignment and annually thereafter. The initial assessment must examine at least 25% of the population of aircraft, equipment, records, documentation, and personnel. The annual assessment must examine at least 50% of the aircraft, equipment, records, documentation, and personnel involved in the process. Workload permitting, 100% of the process should be covered.

NOTES: 1. The annual assessment may be divided into segments over the course of the year; for example, the Logs and Records Program Manager for a squadron with 12 aircraft may elect to examine three different logbooks per quarter in order to achieve the desired 100% annual review.

2. The Maintenance In-Service Training Program audit does not have to examine 50% of the training records of all personnel, but must sample a minimum of 10% of the records from each work center.

3. For D-level activities, the scope of Program Manager assessments will be determined by the QA Supervisor.

- c. No later than 10 days after completion of a Program Manager assessment, forward the completed CSEC and a memorandum to the MO with amplifying information on any outstanding discrepancies with the program.
- d. Notify Division Officers and Division Chiefs of discrepancies in their division, and track completion of corrective actions.
- e. Analyze Program Manager assessments and QA audits, and take action to correct contributing factors to common recurring discrepancies.
- f. Provide Division Officers and Division Chiefs with training on the critical requirements to inspect during work center audits.
- g. As deemed necessary, seek assistance from experts from within or outside the command to perform or assist in assessments.

10.7.4.9 Division Officers and Division or Branch Chiefs:

- a. Jointly perform a work center audit of each work center at least once every 12 months (annually).
- b. No later than 10 days after completion of a work center audit, forward a memorandum to the MO with amplifying information on any outstanding discrepancies.

c. Track corrective action for discrepancies in work center audits, Program Manager assessments, and QA Audits.

d. (O-level and I-level activities) Maintain a file of the last two work center audits (electronic or hardcopy). The audit file must include, at a minimum, the completed CSEC with corrective actions.

10.7.4.10 O-level and I-level Work Center Supervisors:

a. Within 30 days of assignment and annually thereafter, perform an assessment of the programs applicable to the work center.

b. Correct discrepancies within 10 working days of completion of an audit and forward a memorandum to the Division or Branch Chief with amplifying information on actions in-work on outstanding discrepancies.

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CSEC Area	Program Title	Applicable To		Program Assessment	QA Audit
		O	I		
200	Maintenance In-Service Training	X	X	Program Manager	N/A
300	Fuel Surveillance	X	X	Program Manager	Program Monitor
400	Navy Oil Analysis Program (NOAP) and Oil Consumption Monitoring	X	X	Program Manager	Program Monitor
500	Aviators Breathing Oxygen (ABO) Surveillance	X	X	Program Manager	Program Monitor
600	Hydraulic Contamination Control	X	X	Program Manager	Program Monitor
700	Tire and Wheel Maintenance Safety	X	X	Program Manager	Program Monitor
800	Quality Assurance	X	X	QA Supervisor	QA Officer
900	Maintenance Department Safety Program	X	X	QA Supervisor	QA Officer
1000	Naval Aviation Maintenance Discrepancy Reporting Program	X	X	Program Manager	N/A
1100	Aircraft Confined Space Program (ACSP)	X	X	Program Manager	Program Monitor
1200	Foreign Object Damage (FOD) Prevention	X	X	Program Manager	Program Monitor
1300	Tool Control	X	X	Program Manager	Program Monitor
1400	Corrosion Prevention and Control	X	X	Program Manager	Program Monitor
1500	Plane Captain Qualification	X		Program Manager	Program Monitor
1600	Egress System Checkout	X		Program Manager	Program Monitor
1700	Support Equipment Operator Training and Licensing	X	X	Program Manager	N/A
1800	Support Equipment Planned Maintenance System	X	X	Program Manager	N/A
1900	Technical Data Management	X	X	Program Manager	Program Monitor
2000	Naval Aviation Metrology and Calibration	X	X	Program Manager	Program Monitor
2100	Nondestructive Inspection (NDI)	X	X	Program Manager	Program Monitor
2200	Hazardous Material Control and Management	X	X	Program Manager	Program Monitor
2300	Component Repair Review and Individual Component Repair List (ICRL) Validation		X	Program Manager	N/A
2400	Electrostatic Discharge (ESD) Protection / Electromagnetic Interference (EMI) Reporting	X	X	Program Manager	Program Monitor
2500	Miniature/Microminiature (2M)		X	Program Manager	Program Monitor
2600	Technical Directive (TD) Compliance	X	X	Program Manager	N/A
2800	Manpower Management	X	X	AMO	N/A

Figure 10.7-1 (page 1): O-Level and I-Level NAMP Compliance Audits

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CSEC Area	Program Title	Applicable To		Program Assessment	QA Audit
		O	I		
2900	Maintenance Control	X		MMCO / PCO	N/A
3000	Production Control		X	MMCO / PCO	N/A
3100	Weight and Balance	X		MMCO	N/A
3200	Aircraft Records and Reports/Engine Accounting	X	X	MMCO / PCO	N/A
3300	Logs and Records	X	X	MMCO / PCO	N/A
3400	Phase Maintenance	X		MMCO / PCO	N/A
3600	Data Analysis	X	X	MMCO / PCO	N/A
3700	Material Control	X	X	MMCO / PCO	N/A
3800	Aircraft Maintenance Material Readiness List (AMMRL)	X	X	Program Manager	N/A
3900	Vibration Analysis	X		Program Manager	Program Monitor
4000	Aircraft Engine/APU Turn-up Licensing	X		Program Manager	Program Monitor
4100	Gas Turbine Engine Maintenance		X	Program Manager	Program Monitor
4200	Engine Test Facilities		X	Program Manager	Program Monitor
4300	Aerial Refueling Stores (ARS)	X	X	Program Manager	Program Monitor
4400	Aeronautical Equipment Welder		X	Program Manager	Program Monitor
4500	Battery Maintenance Safety	X	X	Program Manager	Program Monitor
4600	Aircraft Compass Calibration	X		Program Manager	Program Monitor
4700	Laser Hazard Control	X	X	Program Manager	Program Monitor
4800	NOMP AWCAP	X	X	Program Manager	Program Monitor
4900	Explosives Handling Personnel Qualification and Certification	X	X	Program Manager	Program Monitor
5000	Aircraft Armament Systems (AAS)	X	X	Program Manager	Program Monitor
5100	Armament Weapons Support Equipment (AWSE)		X	Program Manager	Program Monitor
5200	Aviation Life Support Systems (ALSS)	X	X	Program Manager	Program Monitor
5500	Mobile Facilities		X	Program Manager	N/A
5600	CDI Periodic (Monitor)	X	X	N/A	Program Monitor
5700	Plane Captain Periodic (Monitor)	X		N/A	Program Monitor
5800	Hydraulic Contamination Periodic (Monitor)	X	X	N/A	Program Monitor
5900	Gas Turbine Engine Test System Operator Training and Certification		X	Program Manager	Program Monitor
31000	AIRSpeed		X	Program Manager	N/A

Figure 10.7-1 (page 2): O-Level and I-Level NAMP Compliance Audits

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CSEC	Program Title	Applicable to D-Level
6000	(D-level) Preservation	x
6100	(D-level) Aircraft Inventory Records	x
6200	(D-level) Material Management	x
6300	(D-level) Hazardous Material Control and Management Program	x
6400	(D-level) Naval Aviation Maintenance Discrepancy Reporting Program	x
6500	(D-level) Fuel Surveillance Program	x
6600	(D-level) Flight Check Department	x
6700	(D-level) Miniature/Microminiature (2M) Program	x
6800	(D-level) Tool Control Program	x
6900	(D-level) Foreign Object Damage (FOD) Prevention Program	x
7000	(D-level) Maintenance Department/Division Safety Program	x
7100	(D-level) Aircraft Battle Damage Repair (ABDR)	x
7200	(D-level) Corrosion Prevention Control Program	x
7300	(D-level) Hydraulic Contamination Control Program	x
7400	(D-level) Nondestructive Inspection (NDI) Program	x
7500	(D-level) Aircraft Preservation	x
7600	(D-level) Tire and Wheel Maintenance Safety Program	x
7700	(D-level) Aeronautical Equipment Welder Program	x
7800	(D-level) Aviators Breathing Oxygen (ABO) Surveillance Program	x
7900	(D-level) Egress System Checkout Program	x
8000	(D-level) Explosives Handling Personnel Qualification and Certification	x
8100	(D-level) Aviation Life Support Systems (ALSS)	x
8200	(D-level) Electrostatic Discharge (ESD) Program	x
8300	(D-level) Central Technical Publication Library (CTPL) Program	x
8500	(D-level) Technical Directive (TD) Compliance Program	x
8600	(D-level) Aircraft Records and Reports/Engine Accounting	x
8700	(D-level) Weight and Balance	x
8800	(D-level) Logs and Records	x
9000	(D-level) Data Analysis	x
9100	(D-level) Navy oil Analysis and Oil Consumption Program	x
9200	(D-level) Aircraft Confined Space (ACSP) Program	x
9300	(D-level) Vibration Analysis Program	x
9400	(D-level) Aircraft Taxi and Aircraft Engine/APU Turn-up Licensing Program	x
9500	(D-level) Engine Test Facilities	x
9600	(D-level) Support Equipment Operator Training and Licensing Program	x
9700	(D-level) Support Equipment Planned Maintenance System Program	x

Figure 10.7-2 (page 1): D-Level NAMP Compliance Audits

CSEC	Program Title	Applicable to D-Level
9800	(D-level) Naval Aviation Metrology and Calibration Program	x
9900	(D-level) Laser Hazard Safety Program	x
10000	(D-level) Battery Maintenance Safety Program	x
10100	(D-level) Aircraft Compass Calibration Program	x
10200	(D-level) Quality Policy and Procedures	x
10300	(D-level) Aircraft Armament Equipment	x
10400	(D-level) NOMP Airborne Weapons Corrective Action Program	x
10500	(D-level) Plane Captain Qualification and Certification Program	x
10600	(D-level) Three-Degree Gas Turbine Engine Repair	x
10700	(D-level) SE Misuse/Abuse Program	x
10800	(D-level) Training and Certification Program	x
10900	(D-level) Manpower Management	x
11100	(D-level) Aircraft Maintenance Material Readiness List (AMMRL)	x

Figure 10.7-2 (page 2): D-Level NAMP Compliance Audits

10.8 Technical Data Management (NAMPSOP)

10.8.1 References

- a. DOD Instruction 8500.01, Cybersecurity.
- b. DOD Instruction 8560.01, Communications Security (COMSEC) Monitoring and Information Assurance (IA) Readiness Testing.
- c. OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions.
- d. NAVAIRINST 13630.5, Optimizing Weapon System Avionics Support Using Automatic Test Systems.
- e. NAVAIRINST 13650.1D, Aircraft Maintenance Material Readiness List (AMMRL) Program.
- f. NAVAIR 00-25-100, Naval Air Systems Command Technical Publications Library Management Program.
- g. COMNAVAIRFORINST 13650.3, Aircraft Maintenance Material Readiness List (AMMRL) Program.
- h. NAVAIR 00-25-604, Naval Air Systems Command Fleet Support/Integrated Program Team Acquisition and Sustainment of NAVAIR Technical Manuals.
- i. Department of Defense Federal Acquisition Regulation Supplement (DFARS) Clause 52.227-7013.

10.8.2 Introduction

10.8.2.1 Aviation maintenance activities are responsible for using approved, up-to-date technical data to perform maintenance. This NAMPSOP directs the requirements and responsibilities for managing the technical data held by maintenance activities of all levels.

NOTE: Proprietary Data (drawings, specifications, processes, etc.) will not be released to contractors. Material containing proprietary data cannot be discussed with, forwarded, carried, or provided to any contractor or person outside the Department of Defense without the written permission from the owner of the data per Department of Defense Federal Acquisition Regulation Supplement Clause 52.227-7013.

10.8.2.2 NAVAIR 00-25-100 is the governing policy document for the Naval Air Systems Command (NAVAIR) Technical Publications Library Management Program, and provides procedures related to technical manuals (TM) and Technical Publications Library (TPL) operations.

10.8.2.3 Procedures of this NAMPSOP are applicable to all forms of technical data used to perform or support aviation maintenance, to include:

- a. TMs and other publications listed in NA 00-25-100, WP 004 00, NAVAIR Related Documentation Controlled By Other Navy or DOD Elements.
- b. NAVAIR approved and numbered technical publications.
- c. Commercial technical publications.

d. Publications issued by Naval Sea (NAVSEA), Naval Ordnance (NAVORD), Naval Supply (NAVSUP), Naval Facilities (NAVFAC), and Marine Corps (MARCORPS) used to perform or support aviation maintenance.

e. NAVAIR Pre-Final Technical Data approved for use by COMNAVAIRFOR (N422).

NOTE: Activities must contact the NATEC (AIR-6.8.5) Customer Service Division by phone at (619) 545-1888/DSN 735-1888 or by e-mail at nani_customerservice@navy.mil for disposition when pre-final technical data does not contain a current authorization letter signed by COMNAVAIRFOR (N422).

f. Military Specifications and Standards (MILSPEC/STD).

g. Technical data issued by other U.S armed services (Army, Air Force, and Coast Guard).

h. Technical data issued by NAVAIR In-Service Support Center (ISSC), such as Engineering Dispositions (ED).

i. Maintenance related policy instructions, such as OPNAVINST 3710.7 (NATOPS), COMNAVAIRFORINST 4790.2 (NAMP), COMNAVAIRPAC/COMNAVAIRLANTINST 4790.23 (FAME), Type Wing and MAW instructions, and local command procedures (LCP).

NOTES: 1. Operational Test Program Sets (OTPS) are, managed per NAVAIRINST 13630.5.

2. Media Trax training aids are not classified as TMs. Media Trax training aids will not be placed in the Enhanced Library Management System (ELMS), and TMs will not be placed in Media Trax.

10.8.2.4 NATEC Customer Service can provide assistance in obtaining technical data. Requests may be submitted on line via (<https://mynatec.navair.navy.mil>), by email to nani_customerservice@navy.mil, or by phone to (619) 545-1888/DSN 735-1888.

10.8.3 Requirements

10.8.3.1 Authorized Technical Publications

Technical publications specified in [paragraph 10.8.2.3](#) are the only authorized references for performing aircraft and aviation equipment maintenance.

NOTE: Electronic media technical publications should be used whenever available.

10.8.3.2 NATEC Technical Manual Application System (TMAPS)

TMAPS and the Joint Knowledge Caching Server (JKCS) are the only approved sources for NAVAIR TMs.

10.8.3.3 Technical Data Inventory and Currency Verification

All technical data held by an activity will be inventoried and verified for currency at least once every 6 months. The inventory and verification may be completed in segments, as long as 100 percent of the technical data is verified every 6 months.

NOTE: The latest issue dates for most technical publications not issued by NAVAIR can be found in the NAVSUP Naval Logistics Library (NLL) at (<https://nll2.ahf.nmci.navy.mil/>). For other technical documents, access the publishing agency's Web site. Refer to NAVAIR 00-25-100, WP 006 00, NATEC Product Data Division.

10.8.3.4 Portable Electronic Maintenance Aids (PEMA)

a. PEMAs are the only authorized hardware device for installing electronic TMs and Automated Logistics Environment (ALE) programs. Instructions and other non-TM technical data will not be stored on PEMAs.

b. PEMAs will be used to support maintenance only. PEMAs will not be used for personal or non-maintenance purposes.

c. Only software approved by the applicable T/M/S Program Office will be installed on PEMAs. No other software is allowed, including any Microsoft applications, unless approved by COMNAVAIRFOR (N422).

NOTE: Installation or use of any personally owned software or removable storage media on a PEMA is prohibited.

d. PEMA system software will be updated no later than 10 working days after receipt of a PEMA Service Pack. PEMA Service Packs are issued quarterly, via the Naval Data Distribution System (NDDS) Web site (<https://ndds.navair.navy.mil>).

NOTE: Only System Administrators and designated CTPL personnel will have administrative privileges for updating PEMA software and technical data. Maintenance personnel will not be granted PEMA administrative privileges of any level.

e. The Cybersecurity Procedures of DOD Instruction 8500.01 and DOD Instruction 8560.01 will be adhered to.

f. T/M/S-specific ALE software will be managed per the T/M/S NAVAIR Program Office requirements posted on the NAVAIR PMA260 Web site (<https://pma260.navair.navy.mil>).

g. PEMAs will be managed as Common Support Equipment (CSE) per NAVAIRINST 13650.1.

h. PEMA misuse will be reported as SE Misuse and Abuse per [Chapter 7](#).

NOTE: PEMAs are not subject to Support Equipment Preventative Maintenance System, Optimized Organizational Maintenance Activity (OOMA) Automated Log Sets (ALS), or Support Equipment History/Maintenance Records (OPNAV 4790/51).

i. Requests for assistance in resolving PEMA hardware or software operation problems, and questions regarding PEMA replacement, warranty repair, software imaging, and software updates will be submitted via email to the PEMA Fleet Support Team (FST) at pema@navy.mil.

NOTE: General information on PEMA certifications, PEMA training, PEMA system software, PEMA FAQ, and PEMA Users Logistics Support Summary (ULSS) is available from the NAVAIR PMA 260 Web site (<https://pma260.navair.navy.mil>).

j. PEMAs will be stored in a locked space, container, or locker when not in use.

10.8.3.5 Local Maintenance Requirements Cards (LMRC)

a. LMRCs for scheduled maintenance requirements not covered by other TM must be published:

- (1) When directed in a technical directive (TD) or Interim Rapid Action Change (IRAC).
- (2) When required for SE, per [paragraph 10.17](#).

(3) When required to add new requirements to existing NAVAIR MRC decks.

(4) When the operating activity determines Periodic Maintenance (PM) is required and no other source of information specifies PM procedures.

b. LMRC decks will be numbered with the activity's three-digit Organization Code and a sequential number containing the following elements:

(1) The applicable two digit general subject classification listed in NAVAIR 00-25-100, WP 004 00, Figure 2, followed by "600" to denote MRC. For example, 19-600 denotes a ground servicing equipment MRC.

(2) A locally assigned two digit sequential number to identify the deck.

(3) Either "6-1" to identify a Pre-Operational Inspection or "6-2" to identify a PM requirement.

Example: "PK2 19-600-22-6-1" is an LMRC issued by Organization Code PK2 for a Pre-Operational Inspection (6-1) SE (19-600), it is the 22nd LMRC deck issued by PK2, and it is for PM (6-1).

(4) Cards that do not relate to other steps in the existing LMRC or MRC deck will be placed after the last card in the deck and numbered with the next consecutive number. Cards added to an existing LMRC deck or NAVAIR MRC deck will be inserted within the existing cards in the most efficient sequence for accomplishing the task. The inserted card will be numbered with the preceding card number followed by an alphabetic suffix. For example, three cards inserted between cards 12 and 13 would be numbered 12A, 12B, 12C. Cards inserted between alphabetical suffix cards are numbered with a decimal and numeric suffix, for example, two cards inserted between 12A and 12B would be numbered 12A.1 and 12A.2.

(5) All card numbers will be listed on the deck's A Card (List of Effective Cards) or a separate 5x8 card formatted like the A Card.

c. LMRC title cards for SE must list the model number, designation, and part number. Generic nomenclatures, such as "Grinder", "Metal Shears", and "Radar Test Bench" are unacceptable.

d. The PM interval, such as "Daily", "28 Day", or "364 Day" will be entered in the block between CHANGE No. and ELECT PWR. Any reference directing the LMRC, such as a TD or IRAC, will be entered immediately below the interval.

e. Personnel rate and military occupational skill (MOS) requirements will be listed in the rating (RTG) and MOS block.

f. Power and air conditioning requirements will be listed in the electric power (ELEC PWR), hydraulic power (HYD PWR) and air conditioning (COND AIR) blocks.

g. Detailed information on consumables, tools, personal protective equipment (PPE), and WARNING or CAUTION requirements will be listed in the body (lower right hand block). Specific tools and materials will be listed, for example, "Wrench, 3/8, Open End"(not just "Wrench") and "Oil, VV-L-800 or Equivalent" (not just "Oil").

h. Inspection and maintenance procedures will be numbered and listed in sequence in the body.

- Example:
1. Unfold the ladder.
 2. Inspect and verify braces are not bent and hardware is secure.
 3. Inspect each step for security, rivets in place, and no corrosion.
 4. Place the ladder on a flat surface and verify it is not bent or warped.

i. O-level activities must submit LMRCs (except those directed by TD or IRAC) to their Type Wing or MAW for approval. LMRCs will be submitted by naval letter with a statement of why the LMRC is needed, a summary of the proposed inspection or maintenance procedures, and a statement of whether the LMRC is recommended for local use only or has Fleet-wide impact. [Figure 10.8-1](#) is an example. If the Type Wing or MAW approves the LMRC, they will distribute it to other affected Wing activities, and provide an information copy to the ACC Class Desk and the T/M/S aircraft or equipment ISSC. Any LMRC deemed to have wider than local application will be forwarded by naval letter to the ISSC with sufficient information on why a Fleet-wide LMRC is recommended.

NOTE: IMA Maintenance Officer is authorized to approve LMRCs for their activity.

j. LMRCs must be reviewed and updated every 12 months, based on the date block. LMRCs inserted into NAVAIR MRCs must also be reviewed when there is a change or revision to the MRC. The review will be documented by initialing the LMRC A Card.

NOTE: LMRCs do not have to be resubmitted for approval if requirements are not changed during the annual review.

10.8.3.6 Pre-Final Technical Data

Pre-final technical data is preliminary TMs, interim manuals, interim maintenance support packages, and redline manuals, to include technical publications, schematics, and drawings. Pre-final technical data may be used only if certified by COMNAVAIRSYSCOM (6.8.5) and authorized by COMNAVAIRFOR (N422) per NAVAIR 00-25-604, WP 009 01, Requests for Deviation to use Preliminary TMs.

10.8.4 Responsibilities

10.8.4.1 NATEC (Code 6.8):

- a. Control, distribute, and archive NAVAIR technical data.
- b. Manage TMAPS and Enhanced Library Management System (ELMS) applications.
- c. Post pre-final technical data in TMAPS only if approved for use by COMNAVAIRFOR (N422).
- d. Provide Technical Publications Specialists to assist activities with CTPL management per NAVAIR 00-25-100, WP 003 00, Naval Air Technical Data and Engineering Service Center Customer Service Support Division.

10.8.4.2 NAVAIR PMA260 PEMA FST:

- a. Prepare and deliver PEMA Service Pack updates.
- b. Monitor PEMA related foreign object damage (FOD) and act as the central point of contact for dissemination of information related to PEMA FOD issues.
- c. Coordinate with the Support Equipment Controlling Authority (SECA) for PEMA transfers between AMMRL Activity Identifiers (AAI).

10.8.4.3 Type Wings and MAWs:

- a. Comply with LMRC responsibilities per [paragraph 10.8.3.5](#).
- b. Each month review the NATEC ELMS Library Audit Report for each squadron and provide direction on correction of discrepancies, as required.
- c. Provide semi-annual training to CTPL Managers, to include:
 - (1) IRAC management, including bookmarking procedures for Interactive Electronic Technical Manual (IETM) Interim Rapid Action Changes (IRAC).
 - (2) ELMS management procedures.
 - (3) PEMA management procedures.
 - (4) Common discrepancies noted during Aviation Maintenance Inspections (AMI) and Maintenance Program Assessments (MPA).

10.8.4.4 Maintenance Officer (MO):

- a. Designate the Quality Assurance Officer as the Technical Data Management Officer. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) list.
- b. (O-level) Review and validate the requirement for proposed LMRCs prior to forwarding to the Type Wing or MAW for approval.
- c. (I-level) Review and approve LMRCs.

10.8.4.5 Quality Assurance (QA) Officer:

- a. Perform program assessments per [paragraph 10.7](#).

NOTE: When able, the QA Officer should complete the CNATTU Aeronautical Technical Publication Library Management course (Course C-555-0007) to gain knowledge in TPL requirements.

- b. Designate a Central Technical Publications Library (CTPL) Manager for the QA CTPL (Work Center 04A). Designation will be in writing via the MMP or SME listing.

NOTES: 1. A QAR will be designated to manage the CTPL as a collateral duty if the activity does not have a CTPL Manager specified in the applicable QA organization chart ([Chapter 7](#)).

2. Personnel assigned to the CTPL should be retained in the billet for a minimum of 12 months.

- c. If needed, designate Dispersed Technical Publications Library (DTPL) Assistants. Designation will be in writing via the MMP or SME listing.

NOTE: DTPL Assistants are not required for every Work Center or location where technical publications are maintained outside the CTPL. DTPL Assistants will be assigned only if the CTPL Manager is unable to manage the technical data held in the DTPL.

- d. Designate a Quality Assurance Representative (QAR) as the Technical Data Management QA Monitor.
- e. Review proposed LMRCs, prior to forwarding to the MO.

- f. Maintain a program file, to include:
 - (1) POCs.
 - (2) References or cross-reference locator sheets, correspondence, messages, and lesson guides.
 - (3) Memorandums documenting completion of technical data inventories and verifications.
 - (4) Copies of the most current Program Manager Assessment and QA Audit.

10.8.4.6 Technical Data Management QA Monitor:

- a. Complete the CNATTU Aeronautical Technical Publication Library Management course (Course C-555-0007) within 90 working days of assignment.
- b. Perform audits per [paragraph 10.7](#).

10.8.4.7 Quality Assurance Representatives (QAR):

- a. Review newly received technical publications and directives to determine application to the Maintenance Department.
- b. Verify work guides, FCF booklets, check-off lists, check-sheets, and MRCs are complete and current.
- c. Review new LMRCs for accuracy and correct procedures, prior to submission to the QA Officer.
- d. Verify scheduled MRC and LMRC requirements are entered in the NALCOMIS OOMA or Support Equipment Standardization System (SESS) database, and are updated as changes occur.

NOTE: MRC tasking will be pushed down from the Baseline Manager for activities operating NALCOMIS Optimized Organizational Maintenance Activity (OOMA); however, tasking will not be activated until receipt of the MRC.

- e. Submit Technical Publications Deficiency Reports (TPDR) per [paragraph 10.9](#).

10.8.4.8 CTPL Manager (O-level and I-level):

NOTES: 1. Depot CTPL procedures are delineated in [paragraph 10.8.4.14](#).

2. Weapons Departments will maintain a TPL containing publications necessary to perform its maintenance responsibilities for AWSE. If the Weapons Department is supported by an IMA, the Weapons Department TPL will be a dispersed library of the supporting IMA CTPL. Requests for publications will be processed and ordered through the supporting IMA.

- a. Be responsible for the currency of all technical data held by the command, to include technical data dispersed outside the CTPL.
- b. Complete the CNATTU Aeronautical Technical Publication Library Management course (Course C-555-0007) prior to assignment.
- c. On assignment and turnover, inventory and verify the currency of all technical data held in the CTPL and at least 25 percent of the technical data held in each DTPL. The incoming and outgoing CTPL Manager should jointly perform the turnover inventory and verification whenever possible. Completion will be documented in a memorandum signed by the Quality Assurance Officer.

NOTE: Turnover CTPL and DTPL inventories may be credited for the annual inventory and verification requirement per [paragraph 10.8.3.3](#).

d. On assignment and prior to each inventory, review the ELMS Frequently Asked Questions (FAQ) section located on the ELMS Main Menu.

e. Maintain a CTPL Transaction file, and the directives and manuals required to operate a TPL per NA 00-25-100, WP 013 00, Central/Dispersed Technical Publications Library Operating Procedures.

f. Download electronic NAVAIR manuals from the NATEC TMAPS Web site and JKCS server.

g. Incorporate IRACs, Rapid Action Changes (RAC), and Electronic Rapid Action Changes (ERAC) within 2 working days of receipt and incorporate formal changes, routine revisions and notices within 5 working days of receipt.

NOTE: If changes are given to a DTPL Assistant to incorporate, the CTPL must issue a Change Entry Certification Record (CECR) per NAVAIR 00-25-100, and must physically inspect the manual for correct incorporation prior to closing the CECR.

h. Dispose of cancelled or updated technical data on receipt of the new version, update the ELMS Program, and record disposed manuals in the ELMS History File, per NAVAIR 00-25-100, WP 013 00, paragraph 10-3.

NOTE: Requests to use cancelled technical data will be submitted as a NAMP deviation, per [Chapter 1](#).

i. Coordinate with the Command Security Manager on classified technical data receipt, stowage, distribution, inventory, and disposition.

j. Coordinate NATOPS manual requirements with the Operations Department.

k. Provide training to DTPL Assistants on assignment, and provide refresher training as needed.

l. Register with NATEC as the ELMS Customer Account POC, and act as the activity's single POC for the Automatic Distribution Requirements List (ADRL).

m. Maintain an accurate ADRL for all TMs used by the activity.

NOTE: NATEC will send automatic email notifications of updates to all TMs listed on the ADRL.

n. Enter locally produced reference materials into ELMS. Examples include LCPs, LMRCs, and printed copies of all or portions of electronic TMs.

o. List the location of all manuals held in ELMS using the Locator Listing option.

p. Enter pre-final technical data into ELMS.

q. Maintain a master file of applicable Technical Directives (TD) per [paragraph 10.10](#).

r. Manage PEMAs per [paragraph 10.8.3.4](#), to include:

(1) Maintain PEMA administrative privileges for updating technical data and installing PEMA Service Pack updates.

(2) List all PEMA technical data and system software in the ELMS PEMA Management Module on the NATEC Web site (<https://mynatec.navair.navy.mil>) per reference (h).

(3) Install PEMA system software updates per the applicable PEMA T/M/S specific directions on the NAVAIR PMA260 Web site at (<https://pma260.navair.navy.mil>).

(4) Sub-custody PEMAs to work centers.

(5) Tailor the tech data loaded on PEMAs to the needs of the work center assigned.

(6) Maintain accurate accounting in ELMS of each PEMA serial number, work center issued to, and most current PEMA Service Pack update (if required).

(7) Inventory all PEMAs and verify PEMA Service Pack currency at least once per quarter.

(8) Maintain a current local PEMA inventory sheet with hardware nomenclature, serial number, LAN number (if applicable), quantity, location, operational status, and part number.

(9) Coordinate with the IMRL Manager to return PEMAs for repairs and replacement.

(10) Track PEMAs in shipment per NAVAIRINST 13650.1 and COMNAVAIRFORINST 13650.3, as applicable.

s. At least once every 6 months, physically inventory and compare all technical publications (including TMs on PEMAs) against the activity's ADRL, per the procedures of NAVAIR 00-25-100, WP 010 00, Naval Air Technical Data and Engineering Service Center Technical Publications Library Program. The review will include Work Center Supervisor verification that each publication is required. Annotate changes and discrepancies on the Complete Work Center Listing Report, take corrective action, update the ADRL in ELMS, and maintain the annotated listing in the CTPL transaction files.

t. Reconcile ELMS each week per the following procedures:

(1) Perform the ELMS Library Audit function and compare the activity's database to the latest information in TMAPS. Any manuals flagged as discrepant with a red "D" will be verified for need and placed on order, if required.

(2) Verify incorporation of TM updates by reviewing Checked Out TMs, Issued CECRs, and Overdue CECRs in ELMS per the procedures of NAVAIR 00-25-100, WP 010 00.

(3) Verify the Weekly IRAC and TM Tracker (NAVAIR 00-25-100, WP 014 00, Central/Dispersed Technical Publications Library Verification/Audit Requirements). This report is issued weekly by naval message and is also available on the NATEC Web site (<https://mynatec.navair.navy.mil/>). On receipt, an appropriate review and annotation must be conducted by the CTPL Manager and SME to verify that all applicable IRACs and TMs have been received.

(4) Verify the Weekly Summary for Issued TDs per the procedures of the Technical Directive Compliance NAMPSOP per [paragraph 10.10](#). This report is issued by naval message and is also available on the NATEC Web site (<https://mynatec.navair.navy.mil/>).

u. Reconcile TMs on order each month per the following procedures:

(1) Verify the currency of the Requisition Log per NAVAIR 00-25-100, WP 009 00, Technical Data Requisition Procedures.

(2) Query the Pubs on Order report from the Tech Manual Search link of ELMS.

(3) Follow-up on requisitions submitted via either Defense Automatic Addressing System (DAAS) or “on-line” when utilizing the ELMS Requisition Log. Requisition status may also be checked via the Naval Logistics Library (NLL) P2003 Online Search, Order, and Status Tool.

v. Reconcile technical data held in DTPLs each quarter per the following procedures:

(1) Verify accuracy of the ELMS “Locator” listing associated with each DTPL.

(2) Check every page of at least 25 percent of the publications in the DTPL against the List of Effective Pages or List of Effective Cards.

NOTE: 100 percent of publications held in DTPLs must be checked over the course of a year.

(3) Verify paper manuals for correct control stamp, binder spine identification strip annotation, and arrangement per NAVAIR 00-25-100, WP 013 00.

(4) Document completion of the DTPL Quarterly Review in a memorandum signed by the Quality Assurance Officer. The memorandum will be kept in the CTPL Manager’s transaction file.

w. Prior to transfer, debrief the QAO on the status of the library, including any inventory requirements and publication update actions that have not been completed.

10.8.4.9 Dispersed Technical Publications Library (DTPL) Assistants:

a. On assignment, complete an inventory and verify the currency of all technical data held in the DTPL. The inventory and verification will be conducted jointly with the CTPL Manager.

b. Maintain the currency of all technical data held in the dispersed library.

c. Coordinate with the CTPL to maintain the accuracy of ELMS.

d. Maintain publication binders in accordance with NAVAIR 00-25-100, WP 013 00.

e. Give the CTPL any maintenance publication received directly from other sources, for example, commercial maintenance publications delivered with new equipment.

f. Correct inventory and audit discrepancies within five working days.

10.8.4.10 IMRL Manager:

a. Accept, inventory, and transfer PEMAs as CSE, per NAVAIRINST 13650.1 and COMNAVAIRFORINST 13650.3, as applicable, and this instruction.

b. Sub-custody all PEMAs to Work Center 04A (CTPL) on a Controlled Equipage Custody Record (NAVSUP 306).

c. Update LAMS to reflect “F2” (NRFI) status for non-operable PEMAs, and coordinate PEMA repairs and replenishment. When the SECA provides the authorization number, transfer the PEMA to Jacksonville Cass Staging Facility (JAXCSF) with a copy of Transaction Report and information on the failure.

d. Resolve PEMA allowance shortages.

10.8.4.11 Maintenance or Production Control

Include LMRCs when issuing PM requirements.

10.8.4.12 Work Center Supervisors:

- a. Accept custody and accountability for work center PEMAs.
- b. Provide technical data indoctrination training to work center personnel per the Maintenance In Service Training NAMPSOP per [paragraph 10.1](#). Training will include:
 - (1) Responsibilities for using only approved technical data.
 - (2) TPDR procedures.
 - (3) PEMA procedures, to include responsibility to utilize PEMAs for work-related functions only, PEMA inspection procedures, and storage and security requirements when not in use.
- c. Return non-operable PEMAs to the CTPL Manager as soon as discovered.
- d. Maintain technical data in the work center only if authorized to do so, and only in the quantity required to accomplish work center responsibilities.
- e. Submit requests for technical data to the CTPL.
- f. Inform the CTPL when technical data held by the work center is no longer required.

10.8.4.13 Maintenance Technicians:

- a. Only use authorized and current technical data.
- b. Report problems with technical data to the Work Center Supervisor.
- c. Thoroughly inspect PEMAs for missing or loose parts prior to starting and on completion of each task, and prior to entering or leaving the flight deck or flight line. If parts are missing, immediately inform the Work Center Supervisor.
- d. Only use authorized cleaning and sealing compounds on PEMAs.

NOTE: Unauthorized sealants and cleaners may void the PEMA manufacturer's warranty.

10.8.4.14 Depot Fleet Readiness Center (FRC) Procedures

10.8.4.14.1 Each Depot FRC will maintain a Central Technical Publications Library (CTPL), and as many dispersed libraries, satellite libraries, and library service areas as required, based on its size and organizational construct.

10.8.4.14.2 All dispersed library functions will be under the direct control of the Central Technical Publications Library (CTPL). The CTPL will:

- a. Coordinate and manage the Depot FRCs TM functions, to include:
 - (1) Analysis of TM requirements.
 - (2) Procurement, receipt, and distribution of documents to all local and off-site locations.
 - (3) Security compliance.
 - (4) Maintain and update of all TM held by the Depot FRC.

(5) Review audits for repeat discrepancies, identify trends, and take action to prevent reoccurrence.

b. Maintain a Transaction File, in digital or paper format in accordance with the NA 00-25-100, WP 13 01.

10.8.4.14.3 Depot Training. Personnel assigned to a CTPL, or dispersed, or satellite technical libraries must receive indoctrination and follow-on training in library operation, as necessary. The CTPL supervisor is responsible for developing a written training plan. Training of DTPL librarians is the responsibility of the CTPL librarian or the appropriate Depot Departments. DTPL librarian training will be provided quarterly or as required to indoctrinate the new librarian or to facilitate the passing of new information.

a. Minimum Depot CTPL training will include:

(1) General library operations.

(2) Types of libraries.

(3) Processing Changes and Revisions.

(4) Weekly Interim Rapid Action Change or TM Tracker Message.

(5) Technical Directives (TDs) including Local Engineering Directives (LEDs).

(6) Weekly Summary of Issued TD Message.

(7) Naval Logistics Library (NLL) publication requisitions.

(8) ELMS/TMAPS.

(9) Auditing.

(10) TPDRs.

(11) JDRS.

(12) Technical Data Management Information System.

(13) ETM or IETMs.

(14) PEMAs.

(15) Technical Order Distribution Office.

(16) Enhanced Technical Information Management System.

(17) Joint Engineering Data Management Implementation Control System (JEDMICS)/F/A-18 CITRIX.

(18) Joint Technical Data Integration (JTDI) or Joint Knowledge Caching Servers (JKCS).

(19) Engineering Drawings.

(20) Local processes International Standards Organization.

b. Minimum Depot DTPL training will include:

- (1) Accessing technical manuals.
 - (2) Downloading or printing manuals for a one time use.
 - (3) How to check out and return technical manuals from your DTPL.
 - (4) JDRS.
 - (5) Technical Directives (including LEDs) & Management Procedures.
 - (6) Engineering Drawings.
 - (7) JEDMICS/CITRIX.
 - (8) IHS (Haystacks).
 - (9) Uncontrolled Technical Data.
- c. Follow-on training will be conducted as required and may include:
- (1) Training received during all types of inspections.
 - (2) Training conducted by the Technical Publication Specialist.
 - (3) Team Fleet Library Management Training Review & Working Group.
 - (4) Technical Publications Library Information Sheets.
 - (5) On the Job Training (OJT).
 - (6) Locally developed formal training.

d. Artisans and Shop or Work Center Supervisors will receive end-user training in the usage of technical libraries, local digital data delivery systems, JEDMICS, IETMs or other data delivery methods, as required.

e. Completed training will be documented via the command's official Training Management System of Record.

NOTE: Information on formal schools may be obtained from Center for Naval Aviation Technical Training Unit (CNATTU). For quota information, utilize the Catalog of Navy Training Courses (CANTRAC) or Enterprise Navy Training Reservation System (eNTRS) at the Corporate Enterprise Training Activity Resource System (CeTARS) Web site (<https://main.prod.cetars.training.navy.mil/>). Attending CNATTU ATPL course (Course C-555-0007) is optional for civilian and contractor personnel.

10.8.4.15 Depot Technical Directives Management

a. Each Depot level activity must develop and document their processes and procedures for managing, tracking, and documenting TDs per [paragraph 10.10](#), and NAVAIR 00-25-100, WP 013 01.

b. On receipt of a TD, the CTPL librarian must apply the control stamp (which will include the date received) to those TD copies received. TDs may be received via Defense Messaging System, automatic distribution from NATEC, from the weekly TD tracker messages or as LEDs from the ISSC, cancelled LEDS from the program Integrated Product Teams or LEDs from external sources.

- c. Implement a process to track and control TDs, such as workflow management system.
- d. Route a copy of the TD to the appropriate Depot FRC section in accordance with local procedures for review of the TD for applicability to assigned equipment. This may necessitate use of other work centers within the activity, i.e. supply, Hazardous Material (HAZMAT), etc.
- e. Once applicability of the TD has been determined, the CTPL will distribute applicable copies to work centers identified by the local procedures for the purpose of requisitioning required material or compliance.
- f. A master file copy of the TD will be filed in the CTPL either in paper or in electronic format. Distribution information will be recorded as to location of issued TD copies in the ELMS program or locally managed system.
- g. Positive control must be maintained by the CTPL, as often TDs will be issued as Amendments, Revisions, etc.
- h. When TD copies are returned, the CTPL librarian will dispose of them in accordance with local procedures established for disposal of unclassified TMs.
- i. On receipt by the CTPL, the Weekly Summary for Issued TDs message should be processed and retained for reference for a period of six months. The file of TD summaries may be retained in either paper or digital format.

NOTE: FRC work centers may hold copies of TDs considered to be ongoing or until all applicable aircraft or components have been completed. The NATEC ELMS Program record for return copies must be wiped from the database if the TD had been entered.

10.8.4.16 Depot Audit Requirements

- a. Annual and Turnover Audits. The QA Specialist monitor must complete the Computerized Self Evaluation Checklist (CSEC) for the CTPL annual and turnover audits. Only those manuals and metadata assigned to Work Center 04A must be inspected. The 04A library consists of all the publications that the CTPL directly manages. This includes dispersed libraries where there is no assigned dispersed librarian. Activities are encouraged to expand on the audit requirements to meet individual needs.
- b. DTPL Semi-annual Audit. The CTPL manager with the assistance of assigned QA personnel as required must complete the CSEC for the semi-annual dispersed library audits. These audits may be conducted more often as directed by higher authority. The CTPL must review dispersed library audit results prior to each semi-annual audit for repeat discrepancies. Additional items may be reviewed at the discretion of the CTPL.
- c. Annual Audit. Audits of the CTPL must be conducted by a SME, or at designated representative at the Depot FRC facilities, to ensure manuals and TDs used by the activity are up-to-date. As a minimum, the Annual Audit must consist of the following:

NOTE: When an annual CTPL audit is performed, only those manuals and other technical data physically maintained in the CTPL work center will be inspected.

- (1) A complete wall-to-wall inventory of all CTPL publications held within the CTPL and all DTPLs, satellite, and library service area (LSA) must be conducted whenever the CTPL Librarian is replaced or when directed by higher authority.

(2) All manuals must be verified that they are properly stamped, arranged properly, and identification strips in binder spines are correctly annotated.

(3) Perform the audit function in ELMS. (The audit function compares the activity database contents to the latest information in TMAPS.

(4) Requisition any manuals or changes necessary to update the CTPL.

(5) Compare the verified or corrected work center list to the current copy of the activity's ADRL and update the record in ELMS as necessary.

(6) Complete CSEC.

d. Quarterly Audit. The Depot FRC CTPL or designated representative will perform a Quarterly Audit on all DTPL, satellite libraries and LSA operations. If the CTPL is not available, Quality Assurance/D-level activities Manager personnel will perform the audit. Additional audits will be conducted when directed by higher authority, a new Work Center Supervisor and dispersed, satellite libraries, or LSA librarian is assigned. Dispersed library audit results with copies of the annotated audit inventory list must be retained by the CTPL in work center order, for four consecutive audits (one year) and must be reviewed for repeat discrepancies. As a minimum, the Quarterly Audit must consist of the following:

(1) A complete inventory of all DTPL publications media, which include TMs contained on PEMAs using the ELMS Program Work Center List or ELMS Work Center Report as the primary inventory tool. Discrepancies identified on the Program Work Center List or ELMS Work Center Report must be annotated with the error and corrected as they are detected.

(2) Reproduced pages of manuals properly controlled and disposed of.

(3) Manuals and media properly stored and readily available to the user.

(4) Review Part 2 of CECRs against manuals.

(5) IRACs properly handled to include properly placed in manuals, i.e., directly behind the TM title page and in IRAC number order.

(6) For manuals media on CD-ROM, affix adhesive label to the CD case, annotated with the following information: The NAVAIR publication number to which the IRAC applies and the message number. Maintain the IRAC on file until receipt of the superseding CD. The information on the adhesive label should be legible and positioned to allow for additional updates as they occur.

(7) Work center audit listing.

(8) Page check of DTPLs, Satellite libraries, or LSAs publications. Twenty five percent of publications held are to be page-checked during each quarterly audit. This will ensure that all manuals have been page checked during any calendar year.

(9) For electronic media, such as JTDI or JKCS-Server, perform access verification to ensure all hands are able to search and find applicable manuals at a reasonable time.

NOTE: Additional items may be reviewed at the discretion of the CTPL.

e. Turnover Audit. Turnover Audits of the CTPL must be conducted by a SME on library management to ensure that the manuals and TDs used by the activity are up-to-date. A Turnover Audit will consist of a completed wall-to-wall inventory of publications held within the CTPL and all DTPLs, satellite libraries, or

LSAs. The audit must be conducted whenever one of the following events occurs: the CTPL librarian is replaced or any change in mission or deck load or aircraft assignment. As a minimum, the Turnover Audit must consist of the following:

(1) A complete inventory of all CTPL publications media which include TMs contained on PEMAs using the ELMS Program Work Center List or ELMS Work Center Report must be annotated with the error and corrected as they are detected.

(2) All manuals must be verified that they are properly stamped, arranged properly, and identification strips in binder spines are properly annotated.

(3) Perform the audit function in ELMS. The audit function compares the activity database contents to the latest information in TMAPS.

(4) Requisition any manuals or changes necessary to update the CTPL.

(5) Compare the verified or corrected work center list to the current copy of the activity's ADRL and update the record in ELMS as necessary.

(6) Complete CSEC (COMNAVAIRFORINST 4790.2).

f. Weekly Audit. The ELMS Library Audit function must be performed weekly. The Library Audit function in ELMS compares database contents to the latest information in TMAPS. In ELMS, discrepancies are indicated by anything other than a normal Adobe icon. The Weekly ELMS Library Audit must consist of the following:

(1) Perform the library audit function in ELMS.

(2) Research and requisition any manuals or changes necessary to update the CTPL ELMS Program.

(3) Perform the ELMS PEMA audit function.

(4) Research and requisition any manuals or changes necessary to update the CTPL ELMS Program.

COMNAVAIRFORINST 4790.2C
15 Jan 2017

4790
Ser N42/123
18 May 2017

From: Maintenance Officer, Strike Fighter Squadron ONE TWO THREE
To: Commander, Strike Fighter Wing
Subj: LOCAL MAINTENANCE REQUIREMENT CARD (LMRC) FOR FA-18E CHAFF
DISPENSER, P/N 123456789-10
Ref: (a) COMNAVAIRFORINST 4790.2C
Encl: (1) VFA-123 LMRC number PK3-01-600-33-6-2, FA-18E CHAFF DISPENSER
PREVENTATIVE MAINTENANCE

1. Per reference (a), enclosure (1) LMRC is submitted for Wing approval.
2. Justification of need: FA-18E Chaff Dispensers are often stored uninstalled for long periods after deployment, and it is not unusual to find corrosion on a dispenser's electrical connections when preparing the dispenser for first use after deployment. Enclosure (1) LMRC directs a 28-day PM to inspect uninstalled dispenser electrical connections for corrosion and treat as necessary.
3. This LMRC has Fleet-wide application for all uninstalled FA-18 chaff dispensers.
4. VFA-123 POC: AMEC Scott Barefoot, phone (123) 456-7899, DSN 456-7899, email: aero.professional@navy.mil.

R. T. TAYLOR
By direction

Figure 10.8-1: Local Maintenance Requirement Card (LMRC) Submission Letter (Sample)

10.9 Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) (NAMPSOP)

10.9.1 References

- a. OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions.
- b. OPNAVINST 3750.6, Naval Aviation Safety Management System.
- c. NAVAIRINST 4423.12, Assignment and Application of Uniform Source, Maintenance and Recoverability Codes.
- d. OPNAVINST 5102.1, Navy and Marine Corps Mishap and Safety Investigation, Reporting, and Record Keeping Manual.
- e. OPNAV M-8000.16, The Naval Ordnance Management Policy (NOMP) Manual.
- f. SECNAVINST 4855.3, Product Data Reporting and Evaluation Program.
- g. DTR 4500.9-R, Defense Transportation Regulation, Part II - Cargo Movement.
- h. NAVSUP Publication 485, Naval Supply Procedures.
- i. NAVSUP Publication 723, Navy Inventory Integrity Procedures.
- j. DOD Instruction 4000.25, Military Standard Requisitioning and Issue Procedures (MILSTRIP).

10.9.2 Introduction

10.9.2.1 The Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) establishes requirements for reporting material deficiencies, substandard workmanship, and improper procedures in technical publications.

10.9.2.2 NAMDRP Discrepancy Reports (DR) consist of Hazardous Material Reports (HMR), Product Quality Deficiency Reports (PQDR), Technical Publication Deficiency Reports (TPDR), Baseline Trouble Reports (BTR), Acceptance Inspection Deficiency Reports (AIDR), Aircraft Delivery Deficiency Reports (ADDR), Explosive Mishap Reports (EMR), Explosive Event Reports (EER), and Conventional Ordnance Deficiency Reports (CODR).

NOTES: 1. HMR, PQDR, and EER do not fulfill the requirement for submitting a Hazard Report per OPNAVINST 3750.6, whenever Safety of Flight incidents or other significant safety issues arise. Commands are required to submit a NAMDRP HMR, PQDR, or EER DR and a separate OPNAVINST 3750.6 Hazard Report when the incident or discrepancy meets the intent of both instructions.

2. Commands must ensure DRs related to aircraft mishaps do not contain privileged information per OPNAVINST 3750.6.

3. SECNAVINST 4855.3 provides policy guidance for the Navy's overall PQDR Program.

4. COMNAVAIRSYSCOM Industrial Quality (AIR 6.4) is the process owner for the naval aviation PQDR, AIDR, and ADDR Programs.

10.9.2.3 DRs are categorized by the severity of risk. Category 1 (CAT 1 or CAT I) discrepancies create a safety risk that could result in death or injury to personnel, risk of damage to or loss of aircraft, equipment, or facilities. Category 2 (CAT 2 or CAT II) discrepancies do not create a safety risk or potential for damage, but do pose a widespread risk to the quality of maintenance and operational readiness.

10.9.2.4 HMR, PQDR (CAT I and II only), TPDR, AIDR, ADDR, and BTR are reported and monitored via the Joint Deficiency Reporting System (JDRS) (<https://jdrs.mil>), outlined in [paragraph 10.9.3](#). JDRS enables the creation, transmission, and tracking of DRs. JDRS automatically routes reports to assigned In-Service Support Center (ISSC), Quality Teams, and other concerned activities, based on the report type submitted and the ISSC, Quality Team, and Software Product Team (SWPT) selected via the Support Team Points of Contact (STPOC) ST Lookup tool. Activities can receive reports, request other information, and conduct technical dialog with the originator, exhibit holding activity, ISSC Engineer, and Quality Teams within JDRS.

10.9.2.5 EMR, EER, and CODR are used to report explosive incidents, dangerous defects, and malfunctions or failures involving explosive systems, launch devices, and Armament Weapons Support Equipment (AWSE). EMR are reported and monitored via the Web Enabled Safety System (WESS) at (<http://www.public.navy.mil/navsafecen/pages/wess/wess.aspx>). EER, CODR, and ordnance related PQDR are reported and monitored via the All Weapons Information System (AWIS) at (<https://awis.navair.navy.mil/awis>). Refer to OPNAVINST 5102.1 and OPNAV M-8000.16 for EMR, EER, and CODR requirements.

10.9.2.6 The following discrepancies are not covered under NAMDRP:

- a. Discrepancies related to aircraft NATOPS or tactical manuals are reported per OPNAVINST 3710.7.
- b. Damage or deficiencies caused by incorrect packaging, preservation, marking, handling, or during shipment, such as overage, shortage, expired shelf life, or misidentified material are reported on a Supply Deficiency Report (SDR) per NAVSUP Publication 723.
- c. Defects in locally procured material are reported per SECNAVINST 4855.3.
- d. Discrepancies in command instructions and notices are reported to the issuing command.
- e. Source, Maintenance and Recoverability (SM&R) Code errors are submitted per NAVAIRINST 4423.12.
- f. Recommendations for improvements (vice corrections) to procedures in technical publications are reported by letter to the In-Service Support Center (ISSC).
- g. Transportation discrepancies that occur while the shipment is in-transit, for example, loss, or damage in transit, are reported on a Transportation Discrepancy Report (SF 361) per DTR 4500.9-R. To report a Transportation Discrepancy or find printable paper copies of DD Form 361, refer to USTRANSCOM's public Web site <http://www.transcom.mil>.
- h. NALCOMIS deficiencies are reported using the BTR and change proposal procedures per the OMA Systems Administrator Manual and the JDRS at (<https://jdrs.mil>).
- i. Foreign Military Sales (FMS) PQDR will be submitted to NAVSUP WSS as a SDR. NAVSUP WSS will convert the SDR to a PQDR, if appropriate, and will forward it to the applicable screening point (NAVSEA or NAVAIR) for review and further processing per DOD Instruction 4000.25.

10.9.3 Deficiency Report Procedures

10.9.3.1 JDRS

JDRS (<https://jdrs.mil>) must be used for submitting all NAMDRP DRs.

NOTES: 1. When JDRS is not accessible, CAT I and CAT II DRs will be transmitted by naval message via HMR Report Message Template (Figure 10.9.1), Category 1 Technical Publication Deficiency Report (Figure 10.9-2) or Baseline Trouble Report Message (Figure 10.9-3). Priority precedence will be used for CAT I DR messages. Routine precedence will be used for CAT II messages.

2. If the ISSC, Quality Team, or SWPT cannot be determined, contact the JDRS Clearinghouse Representative via the JDRS Web site (<https://jdrs.mil>), using the Technical Dialog tool or the “Help Menu”, under the “Contact Us” link.

3. If a Weapons Department is receiving AWSE maintenance support from an I-level activity, they will provide each other with a copy of all AWSE DRs submitted.

10.9.3.2 RCN Elements

The originating activity will assign a Report Control Number (RCN) to each DR:

- a. Element (1) - Service Designator Code (N, V, or R) of originating activity.
 - (1) Use “N” for Navy and Marine Corps aviation non-deploying units.
 - (2) Use “V” for Navy and Marine Corps aviation Atlantic Fleet operating forces.
 - (3) Use “R” for Navy and Marine Corps aviation Pacific Fleet operating forces.
- b. Elements (2) through (6) - DODAAC/UIC of the originating activity, for example, 54056.
- c. Elements (7) and (8) - Calendar Year, for example, 10.
- d. Elements (9) through (12) - Locally assigned control numbers (numeric only), sequentially numbered throughout the calendar year without regard for type of report. For example, the first report of the year is an AIDR assigned control number 0001; the second report is an HMR assigned control number 0002; the third report is another AIDR assigned control number 0003; the fourth report is a TPDR assigned control number 0004.
- e. Elements (13 and 14). Supplemental AIDR Sequence Code; for example, S1 and S2 (leave blank if not submitting a supplemental report.)

NOTE: The RCN or message report Date Time Group (DTG) must be referenced on all supplemental correspondence.

10.9.3.3 Hazardous Material Report (HMR)

NOTE: Due to DOD service differences in JDRS terminology, an HMR is submitted in JDRS as a “CAT I EI with HMR intent” per JDRS Web site procedures.

- a. HMR must be submitted on material deficiencies, which, if not corrected, could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities.

NOTE: HMR must be submitted regardless of how or when the discrepant condition was detected.

- b. All HMR are considered CAT I safety discrepancies and must be submitted within 24 hours of discovery of any of the following conditions:
 - (1) Malfunction or failure of a component, which, if not corrected, could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities.

(2) A configuration deficiency in aeronautical equipment (aircraft, engines, support equipment (SE), or components) that creates a safety hazard.

(3) A design flaw that allows incorrect installation of parts resulting in possible system malfunction or failure.

(4) In-flight or ground loss of aircraft parts (things falling off aircraft) in which maintenance or material factors are involved.

c. HMR material will be processed in accordance with [paragraph 10.9.4](#).

NOTES: 1. When JDRS is not accessible, HMR will be reported by priority precedence message, within 24 hours of discovery, using the HMR and PQDR Message Template ([Figure 10.9-1](#)).

2. For HMR incidents where lack of training or improper training in maintenance procedures is a contributor to the discrepancy or incident, the Center for Naval Aviation Technical Training Unit, Pensacola, FL will be included in the “info” block of the HMR PLA: CENNAVAVNTECHTRA PENSACOLA FL.

3. Things falling off aircraft related to Aircraft Armament System (AAS) parts or components will be dual-reported as an HMR and a CODR. The applicable platform ISSC will be an information addressee on the HMR. AAS CODRs must be submitted per OPNAVINST 8000.16.

10.9.3.4 Product Quality Deficiency Report (PQDR)

a. PQDRs must be submitted for deficiencies in new or newly reworked material, products, and software. The deficiency must be attributable to the use of poor quality material, or substandard workmanship by the supplier, contractor, or rework facility and must have been noted during receipt inspection, or found during initial installation, initial operational check, or first flight.. PQDRs will also be submitted for materials that fail prematurely during the specified warranty period and for materials manufactured or maintained under a Performance Based Logistics (PBL) or Contract Logistics Support (CLS) contract.

NOTES: 1. New material is defined as material procured under contract from commercial or government sources or manufactured by an organic facility. Material is considered new until it has been proven in actual operation.

2. Newly reworked material is defined as material overhauled, rebuilt, repaired, or modified by a depot or commercial activity, but unproven in actual operation.

3. Warranted material is considered new for PQDR reporting purposes by D-level activities until warranty expiration.

4. Deficiencies discovered after initial use will be reported as an HMR if they impact safety.

5. PQDRs will not be submitted for material repaired by an I-level activity. Defective material received from an I-level activity will be returned to Supply as a Y-Code action, and will be investigated by the repairing I-level activity’s Quality Assurance (QA) per [Chapter 7](#) procedures.

6. “Suspected” counterfeit material will be reported on a PQDR, regardless of the cost of the material. Annotate the “Suspect Counterfeit” intent box and enter “Suspect” Counterfeit in the description block 3B with a description of the defect. Enter code 766 (Specification, Out of) in block 3C Malfunction Defect Code.

7. JDRS will not be used to recall quality deficient components. Technical Directives (TD) must be issued to recall and inspect quality deficient components per NAVAIRINST 5215.12.

b. CAT I PQDRs will be submitted for quality deficiencies with the potential to cause death, injury, or severe occupational illness; loss of or major damage to a weapons system; critically restrict combat capabilities; or result in a production line stoppage at original equipment manufacturer (OEM), contractor, and D-level activities manufacturing and rework facilities. Discrepancies that potentially impact a safety critical characteristic on a product specified as a critical safety item (CSI) will be categorized as a CAT I PQDR. Discrepancies with CSIs that do not impact safety will be categorized as CAT II PQDR.

c. CAT II PQDR will be submitted for quality deficiencies that do not affect safety or impair combat efficiency.

d. PQDR submission procedures:

(1) Submit CAT I PQDR via the JDRS Web site (<https://jdrs.mil>) within 24 hours of deficiency discovery. Submit CAT II PQDR within 5 calendar days of deficiency discovery.

NOTE: If urgency dictates, report CAT I PQDRs by telephone or in person. Telephone and in-person reports will be followed by a JDRS report (or priority precedence HMR and PDQR Message Template (Figure 10.9-1), if JDRS is unavailable) within 24 hours of discovery.

(2) Verify the last rework activity and the manufacturer information is correct. Upload a copy of the Ready for Issue Material (RFI) tag or the Certificate of Conformance, the original Issue Release or Receipt Document Number (DD Form 1348), and the contract number (if applicable) into JDRS. Additional supporting documentation may also be uploaded, such as photographs, test reports, and other pertinent data. Write the PQDR RCN on all uploaded documents.

NOTE: Failure to submit the RFI tag (or Certificate of Conformance), the original Issue Release or Receipt Document Number (DD Form 1348), and the contract number (if applicable) may result in premature record closure without an investigation being performed and/or loss of credit for the defective material.

(3) For Depot Level Repairables (DLR), input the supporting Supply Department and designated STPOC information addressees.

(4) PQDR material will be processed per [paragraph 10.9.4](#).

10.9.3.5 Technical Publications Deficiency Report (TPDR)

a. TPDR will be submitted to correct deficiencies in technical publications. Fleet Support Teams (FST) will also use TPDR to correct deficiencies found, initiate changes to technical publications, and to incorporate new data, such as TD changes.

NOTES: 1. Technical publications include MRC, checklists, WUC manuals, shop process cards, MIM, IETMs, weapons or stores loading manuals, conventional or nuclear weapon checklists, stores reliability cards, IPB, and TD.

2. TPDR are not used to report problems with instructions or notices.

3. Conflicts between procedures in technical publications and HAZMAT or HAZWASTE Environmental Compliance Regulations must be reported to the ISSC on an environmental report, HMR, or TPDR with the Fleet Readiness Center Southeast (FRCSE) (Code 4.3.4) and Aircraft Controlling Custodian (ACC) or Type Commander (TYCOM) as information addressees.

b. CAT 1 TPDR will be submitted on safety related technical publication deficiencies that could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities.

c. CAT 2, 3, and 4 TPDR will be submitted on non-safety related technical publication deficiencies that impact mission readiness, but do not create a risk of death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities. CAT 2, 3, and 4 TPDR include technical errors, incorrect measurement values, incorrect use of SE, incorrect sequence of adjustments, part number (P/N) errors or omissions, and List of Effective Pages errors. CAT 2, 3, and 4 definitions:

(1) CAT 2 TPDR is non-safety related technical publication deficiencies that cause maintenance delays of 8 hours or more. All non-safety related measurement value discrepancies, such as position sensitive indicator, rate of flow, torque values, or electrical readings will be submitted as a CAT 2 TPDR. List of Effective Pages errors will be reported as CAT 2 TPDR. In addition, P/N discrepancies causing a maintenance delay of 8 hours or more will be submitted as a CAT 2 TPDR.

(2) CAT 3 TPDR is non-safety related technical publication deficiencies that cause maintenance delays of less than 8 hours. In addition, P/N discrepancies resulting in supply requisition errors causing maintenance delays of less than 8 hours will be submitted as a CAT 3 TPDR.

(3) CAT 4 TPDR is non-safety related technical publication deficiencies of a non-technical or administrative nature that do not delay maintenance. CAT 4 TPDR include misspelled words or typographical errors.

NOTES: 1. CAT 4 will not be used to report errors in measurement values (position sensitive indicator, rate of flow, torque values, electrical readings, or other measurement readings), or illegible or incorrect P/N. These types of errors must be reported as CAT 1, 2 or 3 TPDR, as previously defined.

2. CAT 4 TPDRs are not required to list in the List of Effective Page errors.

d. TPDR submission procedures:

(1) Submit TPDR directly to the JDRS Web site (<https://jdrs.mil>) or indirectly to JDRS via Interactive Electronic Technical Manual (IETM) interface (if available).

(2) Submit separate TPDR for each deficiency, whether the deficiencies are in the same or a different publication. This facilitates tracking and final resolution of TPDR. IETM users will also submit separate TPDRs for each deficiency.

(3) Submit CAT 1 TPDR within 24 hours of discovery. If the TPDR is submitted by naval message on a Category 1 Technical Publication Deficiency Report ([Figure 10.9-2](#)), include NATEC SAN DIEGO CA//6.8.5// as an addressee.

NOTES: 1. Contact the JDRS Clearinghouse, listed on the JDRS Web site (<https://jdrs.mil>) under the “Help” menu, “Service Contacts” link or the local JDRS Clearinghouse Representative for assistance in resolving problems with submitting a TPDR via JDRS. For additional information on TPDR, contact the NATEC TPDR Clearinghouse Coordinator (NATEC Code 6.8.5) at DSN 735-4425, or COMM (619) 545-4425. Information is also available in NAVAIR 00-25-100.

2. TPDR submitted by naval message must include NATEC SAN DIEGO CA//6.8.5// as an addressee.

3. TPDR status is tracked on the JDRS Web site. The TPDR Drafter and Submitter will receive e-mail notification of changes in the status of the TPDR. Additionally, if e-mail addresses are provided during TPDR submission, the originator and other addressees will also receive status feedback.

4. Requests for deviation to TPDR submission policy will be addressed via naval letter or message to COMNAVAIRSYSCOM (AIR-6.8.5), subject “JDRS TPDR Waiver Request.”

10.9.3.6 Baseline Trouble Report (BTR)

a. BTR will be submitted for Optimized Organization Maintenance Activity (OOMA) Naval Aviation Logistics Command Management Information System (NALCOMIS) baseline deficiencies that prevent the issuance of work orders (WO) for inspections, TDs, or unscheduled maintenance against aircraft or tracked components. Baseline deficiencies include:

- (1) Wrong work unit code (WUC) to CAGE or part number (P/N) relationship.
- (2) Items with no WUC.
- (3) Incorrect removal intervals for a life limited component.
- (4) TDs received by the activity and not in the baseline.
- (5) Incorrect inspection intervals for an aircraft or tracked component, such as aircraft armament equipment, mission mounted equipment, and aerial refueling stores.

b. When JDRS is not accessible, BTRs will be submitted by priority naval message, addressed to the Baseline Help Desk (COMNAVAIRSYSCOM AIR-6.8) with info copy to COMNAVAIRFOR (N421) and the appropriate Type Wing, per the Baseline Trouble Report Message ([Figure 10.9-3](#)).

10.9.3.7 Acceptance Inspection Deficiency Report (AIDR)

a. AIDR will be submitted for all newly received, manufactured, modified, or reworked aircraft (including Planned Maintenance Intervals (PMI) and other scheduled Depot events).

b. AIDR will only list deficiencies attributed to the manufacture, modification, or rework processes.

NOTE: 1. An AIDR is required even if no deficiencies attributable to manufacturing, modification, or rework processes are found. In this case, the AIDR will state “No Deficiencies Noted” and no deficiencies will be listed.

2. AIDR does not apply to Depot In-Service Repairs (ISR). Document discrepancies with ISR work on a Field Maintenance Team Feedback Report per local instructions.

3. Discrepancies not directly pertaining to the quality of rework, manufacture, or not covered in the negotiated work package or rework specification will not be reported in an AIDR.

4. Do not report equipment shortages, ferry or shipping damages, or deterioration during pool storage.

5. Malfunction Code 174 will be used on AIDRs, WOs, or maintenance action forms (MAF) related to AIDR deficiencies.

c. AIDR procedures:

(1) AIDR (including No Deficiencies Noted responses) must be submitted within 5 calendar days after completion of the acceptance inspection functional check flight. If no functional check flight is required, the AIDR will be submitted within 5 calendar days after completion of the acceptance inspection. The AIDR will include discrepancies noted by the ferry aircrew, if attributable to manufacture, modification, or rework processes.

NOTES: 1. Manufacturing, modification, or rework process deficiencies found within 30 calendar days of the initial AIDR will be reported on a supplemental AIDR using the same RCN as the initial AIDR, and a Supplemental Report Sequence Code ([paragraph 10.9.3.2e](#)). Add “Supplemental”

to the title in block 6; i.e., change from Initial AIDR to Supplemental AIDR. Continue numbering from the deficiencies on the initial AIDR, for example, N00019-15-0001-S1, -S2, -S3, etc.

2. AIDR for aircraft that were reworked, modified, or stored by a D-level activity will be submitted to the D-level Screening Point.

3. AIDR for aircraft that were manufactured, stored, or modified by an OEM or contractor will be submitted to the Commercial Screening Point. Refer to the JDRS ST Look-up tool, under Aircraft T/M/S select "Lower Level" and select Commercial Screening (New or COMM Reworked).

4. AIDR for aircraft that were reworked, stored, modified, or PMI events by an Organic facility, i.e. Fleet Readiness Center will be submitted to the Organic Screening Point. Refer to the JDRS ST Look-up tool: Under Aircraft T/M/S select "Lower Level" and select ORGANIC Screening (NAVAIR Reworked).

(2) AIDR remarks must include detailed descriptions of defects, corrective actions taken by the originator, and any parts involved. Each AIDR deficiency will be categorized as Critical, Major, or Minor, using the following guidance:

(a) Critical: Defects that create a hazardous or unsafe condition with risk to the airworthiness of the aircraft or the safety of personnel.

(b) Major: Defects that are not an airworthiness or safety risk, but do materially reduce the operational capability of the aircraft.

(c) Minor: Defects that do not materially reduce operational capability of the aircraft, but do depart from established quality standards.

NOTE: Components or parts deficiencies discovered during initial acceptance of newly manufactured, modified, or reworked aircraft must also be reported as PQDR per [paragraph 10.9.3.4](#). The PQDR will be referenced in block 3B of the AIDR.

10.9.3.8 Aircraft Delivery Deficiency Report (ADDR)

a. ADDR will be submitted to document deficiencies associated with inadequate periodic maintenance (PM) found by D-level Aircraft Examiners during the following depot events: Rework, modification, PMI, Integrated Maintenance Concept/Program (IMC/P) or long-term storage where the Depot has accepted custody of the aircraft.

b. ADDR requirements:

(1) To assist squadrons with improving the quality of their maintenance procedures, ADDRs will be sent to the squadron that inducted the aircraft.

(2) D-level must submit the initial ADDR (including zero deficiency responses) via JDRS within 20 calendar days of completion of the initial evaluation. Initial ADDRs will include detailed descriptions of material condition, corrosion discrepancies, associated O-level periodic maintenance and requirements, and focus area lists (as applicable).

c. D-level must submit supplemental ADDRs within 30 calendar days of completion of the Depot event. Supplemental ADDRs are a continuation of the initial ADDR report and uses the same RCN as the initial ADDR. Add "Supplemental" to the title in block 6, and continue numbering from the deficiencies on the initial ADDR. Supplemental ADDRs will include a Maintenance Requirements Card (MRC) Deck or IETM Special Inspection correlation and turnaround and material costs summary, man-hours, engineering

hours, and corrective actions taken by the originator. Remarks must contain details that clearly identify the problem, corrective actions, and parts required.

10.9.4 Engineering Investigation (EI) Procedures.

10.9.4.1 All HMR and PQDR are automatically considered for EI.

10.9.4.2 An EI may also be requested for the following reasons:

a. To support investigations of material associated with aircraft or ground mishaps, lightning strikes, electromagnetic interference, and stray voltage problems.

b. To investigate a component rejected by the Navy Oil Analysis Program (NOAP) after all authorized repairs are attempted.

c. To support the mandatory investigation requirements of Activated Aircraft Emergency Egress Systems per OPNAVINST 3750.6.

10.9.4.3 The ISSC engineer for the discrepant material or equipment is responsible for determining whether an EI will be conducted, closed with a final response, or closed administratively.

10.9.4.4 The supporting Supply Department will hold HMR and PQDR material (EI exhibits) pending ISSC notification of whether or not an EI will be performed.

10.9.4.5 Exhibit Handling Procedures.

NOTES: 1. Preparation and handling guidelines must be strictly followed to ensure the EI exhibit is properly prepared for storage and shipment, and reaches the ISSC or Quality Team responsible for conducting the investigation.

2. EI or PQDR exhibits will only be stored or shipped by activities identified in block 20A of the Deficiency Report.

3. All EI or PQDR exhibits must be turned into the Supply Department, except for environmentally sensitive material, which must be held in a HAZMAT storage area pending disposition instructions.

4. Uploading “Classified” information or images to the JDRS Web site is strictly prohibited.

a. The Work Center responsible for the item will protect and package the EI exhibit immediately upon removal in order to prevent corrosion, contamination, or other damage. Protection and packaging requirements:

(1) Use electrostatic discharge caps or tape on all electrostatic discharge sensitive exhibits.

(2) Cap or plug all fluid openings to prevent contamination or loss of fluids during storage and transportation.

(3) Do not adjust, disassemble, or perform any type of cleaning on the exhibit. If any adjustment, disassembly, or cleaning was done during a local investigation, attach a memorandum to the material describing the actions in detail.

(4) Maintain EI exhibits in an “as is” condition. Do not attempt to reassemble fragments of failed material or remove any component for future use. Wrap each fragment separately to prevent additional damage.

(5) When feasible, forward associated accessories, components, or materials suspected of contributing to the malfunction.

(6) Mark the turn-in WO or MAF with "EI" or "PQDR" in 3-inch red letters. Do not obscure other data on the WO or MAF.

(7) Annotate the RCN in the discrepancy block.

(8) Annotate BCM-8 and EI or PQDR in the Corrective Action block.

NOTE: Consumables will be treated as a DLR and placed in BCM-8 status so the exhibit can be placed in Litigation "L" Code condition by the Supply Department.

b. The activity's QA Department will prepare EI or PQDR exhibits as follows:

(1) Whenever possible, take photographs showing the condition of the exhibit when the deficiency was discovered. Digital pictures can be uploaded to the JDRS Web site in the Miscellaneous Attached Message/Document section of the Report Summary page.

(2) Prior to packaging the exhibit, ensure all pertinent information is recorded.

(3) For PQDR exhibits:

(a) Scan or digitally photograph the RFI Tag (DD 1574) and upload or attach to the DR, prior to submittal. If the RFI Tag is added after DR submittal, upload it in the Miscellaneous Attached Messages/Documents section of the Report Summary page in the JDRS Web site. Including the RFI Tag will assist the report screener in determining and verifying the repair activity.

(b) Record the contract number under which the material was manufactured or repaired in block 13A of the DR. The contract number may be found on the Manufacturer's Invoice (DD Form 250), on the Requisition and Invoice/Shipping Document (DD Form 1149), on package markings, or stamped or printed on the defective item or data plate. Use logistic tools, such as FEDLOG, to assist in determining the contract number.

(c) Record the Re-Order Requisition Number/Turn-in Document Number in block 13B. The requisition number is mandatory for consumable charge reversal, or Depot Level Repair (DLR) charge reversal.

(d) Attach the WO or MAF, PQDR Exhibit Tag (DD Form 2332), a copy of the PQDR or EI request, and a copy of the shipping instructions (Preliminary Disposition Report) to the component or assembly.

(e) If the component or assembly has a SRC or an EHR card, ensure the appropriate card accompanies the exhibit.

(f) Verify all service records, for example, ASR, MSR, or AESR, have the appropriate logbook entries and are stored in the appropriate shipping container.

(g) Forward fluid samples in a clean, sealed, and authorized container. If contamination is suspected, annotate the sample bottles accordingly.

(h) Request special shipping instructions from the ISSC if any hazardous conditions are evident.

(i) For aircraft engine and gas turbine compressor or engine related EI and PQDR exhibits, annotate the engine logbook as transferred for EI or PQDR investigation.

c. Supply Department must:

(1) Verify the exhibit is correctly packaged and marked in accordance with NAVSUP P-700. The EI or PQDR exhibit WO or MAF and external packaging will be clearly marked "EI" or "PQDR" in 3-inch red letters.

(2) Quarantine and store the exhibit separately from material being processed through normal repair channels.

(3) Hold the EI or PQDR exhibit until shipping or disposition instruction (Preliminary Disposition Report) is received from the ISSC or the directing authority. If shipping instructions are not received within 20 calendar days of the initial submission of the EI or PQDR, Supply will send a Technical Dialog via the JDRS Web site to the ISSC or Quality Team, requesting status. If connectivity prevents the use of JDRS, contact the JDRS Clearinghouse for assistance.

NOTE: The technical dialogue within JDRS is critical to providing a permanent record and timeline of follow-up action taken via phone calls or email correspondence. If multiple follow-ups have been made without disposition instructions being provided, Supply will request assistance from the JDRS Clearinghouse. If no response received, contact NAVAIR Industrial Quality (AIR-6.4.1.2), Commercial: 301-757-8716.

(4) Once disposition instruction is received and BCM action is completed, process and mark all EI or PQDR material using Condition Code "L" in the eRetrograde Management system (eRMS).

NOTE: Components held in Condition Code "L" will not generate a carcass bill for 45 days vice 30 days for components held in "F" condition.

(5) Verify the following information is correct and properly entered into the eRMS Web site:

- (a) Document number.
- (b) National Stock Number (NSN).
- (c) Serial number.

(6) Process the exhibit document number through eRMS for shipment to Advanced Traceability and Control (ATAC) (afloat units) or in accordance with local shipping procedures (shore activities) for further transfer to final destination.

NOTES: 1. Unless otherwise directed by the ISSC or directing authority, all EI or PQDR exhibits must be shipped using the Premium Shipping tool on the JDRS Web site (<https://jdrs.mil>).

2. Under no circumstances will shore activities ship EI or PQDR exhibits within the ATAC system.

3. Afloat units will process all NRFI retrograde components, including EI or PQDR exhibits, via eRMS using "BEI" or "BQD" Document Identifier and ship via ATAC for further transfer to final destination.

4. Regardless of the method of shipment, all EI or PQDR exhibit shipments must be documented in JDRS to enable the JDRS Material Management Branch and all POCs involved with the investigation to track the shipment.

5. A request for Tracer Response can only be generated by the Originating Unit Submitter or Exhibit Holding Point personnel having Ship Exhibit with Tracer assigned user roles within JDRS (DR) Message Release Authority.

6. The COMNAVAIRSYSCOM JDRS Clearinghouse will provide assistance in resolving JDRS Web site shipping issues, overweight and oversized exhibits, connectivity issues, and waybill assistance. The JDRS Clearinghouse can be reached at 1-888-832-5972 or by contacting the local Clearinghouse Representative, listed on the JDRS Web site under the “Help” menu, “Service Contacts” or “Contact Us” link.

7. Material to be released to an authorized contractor’s representative or shipped directly to a contractor’s plant will be processed through the supporting Supply Department. Supply may issue the material on a custody basis only after receiving authority from the ISSC. DLR exhibits sent to commercial contractors will be shipped per the instructions received from the Action or Support Point.

d. JDRS Customer Service Team (CST) will:

(1) Complete the JDRS Exhibit Receipt tool upon receipt of an EI or PQDR exhibit per Discrepancy Report Workload Priority (Figure 10.9-4).

NOTE: After record closure, the JDRS Exhibit Receipt tool remains live to allow the Customer Service Team to document the receipt of shipments and notify the POCs of exhibits that were assumed lost.

(2) Complete D-Level Repairable Carcass Tracking or TIR.

(3) Assist all POCs when tracking lost exhibits.

(4) Complete the JDRS Material Disposition tool, when the ISSC or Quality Team has completed their investigation, returned the material from Condition Code “L”, and placed the material back into supply per disposition instructions.

(5) Approve EI Exam Plans.

10.9.5 O-level and I-level Activity Responsibilities

10.9.5.1 Type Wing or Marine Aircraft Group (MAG)

a. Act as the ADDR final approver or closing authority for aircraft under their cognizance.

b. Coordinate actions to meet the ADDR Process Timeline (Figure 10.9-10).

c. Review the ADDR report for accuracy, completeness, and validity.

d. Use the JDRS Web site (<https://jdrs.mil>) to verify accurate information has been received from the originator. When incomplete or incorrect information is noted, contact the originating Depot to make the necessary changes.

e. Follow-up on ADDRs not received from the Depot within 45 calendar days after the aircraft is transferred to the Depot.

f. Ensure squadrons investigate discrepancies identified in the ADDR.

g. Review the squadron’s investigative report for completeness and validity.

- h. Conduct the necessary follow-up action to reduce the possibility of like occurrences.
- i. Provide closing or final response, via JDRS Web site (<https://jdrs.mil>), on all ADDRs as soon as possible, but not later than 30 calendar days after receipt of the squadron's investigative report and applicable FST corrective actions or resolutions.
- j. Evaluate ADDRs and squadron responses to identify T/M/S trends and take action to prevent recurrence per [paragraph 10.13](#).

10.9.5.2 Maintenance Officer (MO):

- a. Enroll in JDRS (<https://jdrs.mil>) as a DR Submitter (Approve and Submit Web site DR Message Release Authority).

NOTE: The MO may delegate DR Submitter privileges to the AMO, QA Officer, or NAMDRP Program Manager.

- b. Review and authorize DRs, prior to submission in JDRS.
- c. Designate DR Submitters (Approve and Submit Web site DRs Message Release Authority) and DR Drafters (draft only). Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.
- d. Forward ADDR investigation results to the Type Wing or MAG for screening and closing.

NOTE: The final response timeline may be extended for a thorough quality investigation. Submit technical dialog, via JDRS Technical Dialog tool, informing the originator of the investigation progress every 30 days until the final response is submitted. Include the originator and all concerned activities in the distribution of the investigation report.

- e. Coordinate with the Mishap Board and the Aviation Safety Officer (ASO) prior to releasing DRs related to a mishap.

10.9.5.3 Quality Assurance (QA) Officer:

- a. Enroll in JDRS (<https://jdrs.mil>) as a DR Submitter (Approve and Submit Web site DRs Message Release Authority) (if delegated).
- b. Designate the Quality Assurance Supervisor or a Quality Assurance Representative to be the NAMDRP Program Manager. Designation will be in writing via the MMP or SME listing.

NOTE: The NAMDRP Program Manager must be assigned for a minimum of 12 months.

- c. Review DRs for accuracy and completeness prior to forwarding to the MO.
- d. Manage and coordinate the submission of DRs within specified timeframes.
- e. Provide copies of DR correspondence relating to aviation ground, flight, flight related, and explosive mishaps to the ASO.
- f. Review NAMDRP Computerized Self-Evaluation Checklist (CSEC) audits and direct corrective actions for process improvement.
- g. Take corrective action to preclude or minimize repeat deficiencies.

h. Investigate and address each deficiency listed on the ADDR within ADDR Process Timeline ([Figure 10.9-10](#)). The investigation will include a determination, if FST assistance is required to resolve ADDR deficiencies, and if maintenance procedures need to be modified to mitigate discrepancy trends.

10.9.5.4 NAMDRP Manager:

a. Perform a CSEC program manager assessment within 30 days of designation as Program Manager and annually thereafter.

b. Keep current on the DR requirements of OPNAVINST 3710.7, NAVSUP Publication 723, DTR 4500.9-R, OPNAVINST 8000.16, NAVAIRINST 4423.12, OPNAVINST 3750.6, OPNAVINST 5102.1, SECNAVINST 4855.3, NAVSUP Publication 485, and this NAMPSOP.

c. Assist work centers with determining which DRs are needed, and assist them with preparing DRs.

d. Prior to submission to the QAO, screen DRs and verify all data fields are complete and accurate, and the discrepancies are sufficiently detailed and clearly described.

e. Review DRs for discrepancy trends and provide the QAO with recommendations for corrective action to resolve deficiencies.

f. Respond to ADDRs, via the JDRS (<https://jdrs.mil>) Acknowledge Receipt Tool, within the process timeline per ADDR Process Timeline ([Figure 10.9-10](#)).

NOTE: If the ADDR was not sent to the correct squadron, the program manager will use the JDRS Acknowledge Receipt tool to reject the ADDR to the originating D-level activity. Immediate Acknowledge/Reject action will be taken to ensure the correct squadron completes the Acknowledge Receipt process within the ADDR Process Timeline ([Figure 10.9-10](#)).

g. Maintain an RCN log to ensure each DR, including EER, EMR, and CODR, is assigned a unique RCN. For detailed procedures refer to [paragraph 10.9.3.2](#). The RCN log must contain the following:

- (1) Date.
- (2) RCN.
- (3) DR Type.
- (4) Nomenclature.
- (5) BUNO Number (for AIDRs).
- (6) P/N.
- (7) S/N (if applicable).
- (8) NSN or NIIN.
- (9) Brief description of deficiency.
- (10) Status (filled in upon issuance of final or closing report).

h. Review JDRS technical dialog pertaining to the unit's DRs. Initiate JDRS FST Input Request or technical dialog correspondence to the ISSC, FST and Quality Team when:

- (1) DR responses have not been received within prescribed timeframes.
- (2) Shipping instructions have not been released within 20 days of DR submission.
- (3) DRs have not met process timeline goals specified in AIDR Process Timeline ([Figure 10.9-5](#)), 10.9-6 (EI), and 10.9-7 (PQDR).
- (4) Support is required to resolve ADDR deficiencies, or ADDR trends indicate the need for an update to maintenance procedures/specifications.
 - i. Provide JDRS training to DR Drafters and DR Submitters.

NOTE: Web site tool handbooks are available under the JDRS Help Menu, “Handbooks” link to assist users with tool operation.

j. Perform a monthly validation and update of personal information, such as phone number, e-mail address, PLA, office code, rank, and job title, for DR Drafters and DR Submitters, and notify JDRS via the “Contact Us” tool to update or delete profiles.

k. Maintain a program file to include:

- (1) Program POCs.
- (2) ISSC, FST, or manufacturer responses received external to JDRS. Retain for 1 year or until final ISSC, FST, or manufacturer response (closing response/action) is received, whichever is greater.
- (3) Follow-up messages or correspondence and JDRS technical dialogs.

NOTE: DRs and technical dialog correspondence stored on JDRS do not require hard copy files. JDRS maintains all DR and related correspondence and closing reports electronically. A paper copy of the DR may be retained when connectivity with JDRS is an issue.

- (4) References or cross reference locator sheets.
- (5) Most current completed CSEC program manager assessment.

10.9.5.5 Division Officers:

- a. Enroll in JDRS as a DR Drafter.
- b. Review DRs submitted by the division and coordinate with QA when recurring deficiencies are noted.

10.9.5.6 Work Center Supervisors:

- a. Enroll in JDRS as DR Drafters.
- b. Submit DRs to QA whenever a discrepancy occurs that meets the reporting requirement.
- c. Verify NAMDRP Indoctrination training is provided to personnel per [paragraph 10.1](#).

10.9.6 NAVAIR Activity Responsibilities

10.9.6.1 ISSC and Quality Teams for PQDRs, AIDRs, and ADDRs:

a. Respond to DRs, via JDRS Web site (<https://jdrs.mil>) in the Acknowledge Receipt tool, within the AIDR Process Timeline (Figure 10.9-5), EI Process Timeline (Figure 10.9-6), PQDR Process Timeline (Figure 10.9-7), and ADDR Process Timeline (Figure 10.9-10):

- (1) One calendar day after receipt of a CAT I EI, CAT I PQDR, or CAT 1TPDR.
- (2) Four calendar days after receipt of a CAT II PQDR or AIDR.
- (3) Thirty calendar days after receipt of a CAT 2, 3 or 4 TPDR.

NOTES: 1. Acknowledging receipt of a DR is considered a response.

2. DRs submitted via command e-mail will be imported into JDRS upon receipt by the ISSC or Quality Team. The ISSC or Quality Team will make every effort to acknowledge the DR within this instruction's timeframes.

3. DRs received during scheduled facility shutdown periods (weekends/holidays) will be acknowledged the next working day.

b. Take timely action on all EI requests per COMNAVAIRSYSCOM (AIR-4.0) EI Process Timeline (Figure 10.9-6). ISSC may request assistance in completing an EI or initiating an EI within the ISSC organization when a problem is suspected and has not been reported.

c. If the ISSC is unable to complete an EI because of equipment or facility limitations, specialized engineering discipline requirements, or other reason(s), ISSC will request assistance from an appropriate Navy technical activity or contractor establishment. Assistance from other ISSCs will be requested by message with an information copy to the PMA and COMNAVAIRSYSCOM. Assistance from other Navy technical activities or contractors will be requested by the ISSC to the appropriate COMNAVAIRSYSCOM code on the Partial Listing of ISSC (Equipment Supported) (Figure 10.9-8). When contractor assistance is required and a support contract exists, request for assistance may be sent directly to the appropriate ACO by message. Approval by the PMA is required prior to obligating funds for any contractor assistance services.

d. Process investigations as follows:

(1) Determine if the HMR or PQDR was sent to the correct ISSC. If not, readdress the request to the correct ISSC, via JDRS Web site (<https://jdrs.mil>) Acknowledge Receipt tool, for action and inform the originator of the action taken.

(2) If the correct ISSC cannot be identified, forward the report to the JDRS Clearinghouse, via the JDRS Web site (<https://jdrs.mil>) Acknowledge Receipt.

NOTE: Immediate acknowledge receipt or forward action must be taken to ensure the correct ISSC completes the Acknowledge Receipt Process within EI Process Timelines (Figure 10.9-6).

(3) Liaison with the report originator (as required) to obtain amplifying or clarifying information on the reported discrepancy or failure.

(4) Study the history of failures and determine if an EI is needed on the equipment or material in question.

(5) Confirm the criticality (CSI, CAI, or noncritical) of the discrepant item or establish the criticality if a determination had not previously been made. Every HMR and PQDR processed through JDRS contains a link by which criticality determinations or recommendations can be submitted to appropriate Critical Item Managers. This facilitates updating the official Critical Item database to ensure the DOD community is aware and responsive to issues relating to critical parts.

(6) Close EI requests via a JDRS Closing Report when an investigation will not be conducted.

NOTE: Include the Supply Department or unit holding the material as an action addressee within the Closing Report. Provide instructions stating the material will not be required for investigation and may be released for repair via normal supply channels.

(7) Complete the JDRS Web site Go or No Go tool to determine the engineering risk, cost analysis, or other factors that indicate whether an EI is required. Use the Technical Dialog tool to communicate with the report originator or other POCs when additional information is required.

NOTE: The ISSC engineer must summarize the factors that led to a decision when an investigation will not be conducted via JDRS Closing Report or Reclassification.

(8) When it is determined that an investigation is required, assign an ICN and provide shipping instructions, via JDRS Preliminary Disposition Report, for the discrepant equipment or material or describe the arrangements for an onsite investigation. All EI exhibits must be shipped as directed by the shipping instructions (Preliminary Disposition Report).

(9) Use the HMR or PQDR investigation control numbering system, for example, WC3EI-AV8-0001-04S, for deriving ICNs per the following:

(a) The first elements of the ICN must be the three character D-level identifier (Organization Code) per the NALDA Organization Code Translator (<http://www.navair.navy.mil/logistics/orgtranslator>), followed by "HMR" or "PQDR" and a dash (-).

(b) The second element of the ICN must be the two, three, or four character system identifier (H60, T400, ACCY, ELEC, AVNC, etc.), followed by a dash (-). For PQDR, the investigative quality organization may be used vice system identifier.

(c) The third element of the ICN must be a four character sequentially assigned number beginning with "0001" for the first assigned HMR/PQDR in a new calendar year, followed by a dash (-).

(d) The fourth element of the ICN must be the two digit calendar year identifier, (ex. "07" for calendar year 2007), followed by a request urgency indicator of "R" for Routine (CAT II), "S" for Safety, or "M" for Mishap related (CAT I).

(10) Develop an EI Exhibit Examination Plan via JDRS. Ensure the examination plan is provided to the investigating activity and customer service team. Notify local investigating activity receiving personnel of the request for the equipment/material exhibit so the exhibit can be properly identified and routed when received.

(11) Follow-up on equipment or material non-receipt. Under normal circumstances, follow-up must be made within 4 calendar days for CONUS (8 calendar days for OCONUS shipping) after the response message. The period may be extended if it is known that shipment will take longer than 20 calendar days. Follow-up includes a JDRS Tracer Request to the originator and supply activity responsible for shipping the material. Checks are also conducted with the local supply activity, Customer Service Team charged with receiving the material, site delivery points, and repair receiving points to ensure the material is delivered to the correct destination.

NOTE: All possible follow-up actions must be taken, particularly on equipment/material related to CATI EIs and PQDRs, and aircraft mishaps.

(12) Conduct or arrange for the completion of the EI. EIs must be assigned Priority 1 or 2 depending on the ISSCs assessment of the probable impact or effect of the reported problem. EIs in support of aircraft mishaps must be assigned Priority 1.

NOTE: The originator's recommended or requested priority must be given serious consideration.

(13) Convert the EI to a PQDR if the investigation determines the failure was the result of poor quality.

(14) If completion of an EI requires assistance from another ISSC, request assistance directly from the ISSC, with information copy to the PMA. If another Navy technical activity or a contractor will complete the investigation, forward a letter or message to the appropriate COMNAVAIRSYSCOM program office requesting assistance. In either case, the report originator must be officially notified of the change in Action Points and provided with new contact points. Any Navy activity or contractor performing an EI must submit a report of findings, conclusions, and recommendations to the ISSC only. The ISSC will review or amend the report, and then issue a final report or closing action.

(15) Final EI reports must be completed within the T7 timeframes shown in EI Process Timeline (Figure 10.9-6). Total time allowed to complete the Final EI Report from receipt of the exhibit (or the beginning of the FST EI Examination Cycle) varies dependent upon whether the EI is a result of a CAT I mishap, a CAT I non-mishap, or a CAT II failure. If the final report cannot be completed within the timeframe shown in T7 on EI Process Timeline (Figure 10.9-6), an interim report or message must be provided to the originator at the T7 specified intervals until the Final Report is released.

(16) Return, or provide for the return of, the unserviceable equipment or material to the CST for disposition. Use the JDRS Web site (<https://jdrs.mil>) Material Disposition tool to inform the CST of the condition of the material and disposition direction. Serviceable RFI material will be certified as such, and applicable documentation (RFI Tag, etc.) will accompany the component. If the equipment or material is extensively disassembled and salvageable, it may be inducted for rework and should be entered into the Supply System inventory under the proper condition code. In the case of EIs supporting mishap investigations, no disposition of the equipment or material will be made until released by the senior member of the AMB per OPNAVINST 3750.6.

NOTE: Mishap material must be managed and maintained by the cognizant ISSC. It is the responsibility of the Engineering Team to conduct follow up actions or disposition requests to the AMB. Once the AMB approves the material disposition, the Engineering ISSC will contact the JDRS Clearinghouse for workflow assistance to reopen the DRs Disposition tool. The ISSC will then dispose of the material, via normal Material Disposition means. The Customer Service Team (CST) will return the material from "L" condition to "A", "F" or "H" and process accordingly.

e. Support the processing of PQDRs for assigned material per paragraph 10.9.6.2. Activities responsible for investigations must take action on PQDR requests per requirements of COMNAVAIRSYSCOM (AIR-6.0).

NOTE: The D-Level Quality Department will serve as the lead for coordinating the internal effort to ensure PQDR are processed, investigated, and responded to within the PQDR Process Timeline (Figure 10.9-7).

10.9.6.2 PQDR Quality Team Screening Point:

a. Examine the PQDR request to determine if the DR has been sent to the correct Quality Team or screening point. If not, readdress the request to the correct Quality Team or screening point, via JDRS Web site (<https://jdrs.mil>) Acknowledge Receipt tool, for action and inform the originator of the action taken.

b. If the correct Quality Team cannot be identified, forward the report to the JDRS Clearinghouse, via the JDRS Web site (<https://jdrs.mil>) Acknowledge Receipt tool, for action.

NOTES: 1. COMNAVAIRSYSCOM (AIR-4.1) acts as the screening point for PQDR when the ISSC cannot be determined or for commercial contracts administered by a COMNAVAIRSYSCOM PCO.

2. Immediate acknowledge receipt or forward action will be taken to ensure the correct Quality Team complete the Acknowledge Receipt Process within the PQDR Process Timelines (Figure 10-9.7).

c. Evaluate incoming and outgoing PQDR to determine urgency, action required, and category using JDRS. When incomplete or incorrect areas are noted, obtain the necessary information by contacting the originator, make the necessary changes, and complete the required processing as follows:

(1) Import PQDRs received by D-level via command e-mail message into JDRS.

(2) Use the JDRS Data Review tool to verify accurate information has been received from the originator via JDRS Technical Dialog tool. When incomplete or incorrect areas are noted, obtain the necessary information by contacting the originator, make the necessary changes via the Data Review tool, and complete JDRS processing.

(3) Determine if the PQDR category (CAT I or CAT II) assigned by the originator is properly assigned. Using the Data Review tool, the Screening Point may make necessary changes in category assignment, but must notify and provide justification to the originator via JDRS Technical Dialog tool within 5 calendar days of the date of change.

(4) Provide an immediate reply, via JDRS Technical Dialog tool, to other participating components (to include engineering ISSC) and activities when the report concerns safety in peculiar and common use items.

(5) Determine (where possible) if a contract warranty applies or initiates any special actions required. When the deficiency involves an item covered under a reliability improvement warranty, the PQDR must be processed per SECNAVINST 4855.3 (unless a Warranty Clause governs this workload).

(6) Identify material processed or reworked by another service component, such as Army, Coast Guard, or Air Force. Send the original PQDR to the inter-service PQDR Quality Team Action Point via JDRS Data Review tool. Provide the originator a copy of the request or transmittal.

(7) Forward PQDR, via JDRS, to COMNAVAIRSYSCOM (AIR-4.1) when the Screening Point is unknown.

(8) Forward PQDR to the appropriate PQDR Quality Team Action Point, via JDRS, within the following timeframes:

(a) CAT I PQDR within 1 calendar day after Acknowledge Receipt.

(b) CAT II PQDR within 10 calendar days after Acknowledge Receipt.

10.9.6.3 PQDR Quality Team Action Point:

- a. Provide the interim or final reply within 28 calendar days for CAT I PQDRs not requiring exhibits or 45 calendar days after receipt of exhibit for CAT I PQDR with exhibits.
- b. Provide the interim or final reply within 45 calendar days for CAT II PQDR not requiring exhibits or 60 calendar days after receipt of exhibit for CAT II PQDR with exhibits.
- c. Complete JDRS Shipping Instructions (Preliminary Disposition Report) to provide disposition instructions to the Supply Activity holding the PQDR exhibit.
- d. Initiate a Tracer Request to the holding activity via JDRS for overdue delivery of requested exhibits or samples. Under normal circumstances, Tracer Requests will be made 20 calendar days after Preliminary Disposition Report release, but the period may be extended if it is known that shipment will take longer than 20 calendar days. At a minimum, the Tracer Request must include action addressees to the PQDR originator, the supply activity holding the exhibit, and the Customer Service Team responsible for receipt of the exhibit.
- e. Follow-up on equipment or material related to safety.
- f. Determine if the deficiency has been previously reported.
- g. Determine if the previously reported deficiency is under investigation or has been resolved.
- h. Notify the originator, within the timeframes previously outlined, that the problem is under investigation or has been previously resolved.
- i. Determine if a quality investigation should be conducted, what action will prevent recurrence, and what reports of findings will be required from affected support points. Provide affected support points with action copies stating desired support.
- j. Initiate appropriate action on CAT I PQDR to inform other activities (to include engineering ISSCs), that may have received material with similar defects, and identify specific lot shipment suspected.
- k. Initiate appropriate action to the Inventory Control Point (ICP) or Procurement Contracting Officer (PCO) or Administrative Contracting Officer (ACO), which could preclude further procurement or acceptance of deficient material. The ICP and PCO or ACO will request distribution activities, inspect or screen their stock, and issue ALERT notifications (when needed).
- l. Provide an immediate reply, via JDRS Technical Dialog tool, to other participating components (to include engineering ISSC) and activities when the report concerns safety in peculiar or common use items.
- m. Determine if a contract warranty applies and initiate any special actions required. When the deficiency involves an item covered under a reliability improvement warranty, the PQDR will be processed for information only per SECNAVINST 4855.3.
- n. Verify CAT I Final Reports are reviewed by the Engineering ISSC. The Quality Team must send their final draft, via JDRS Technical Dialog tool, allowing the engineering team 24 hours to provide any comments and/or changes.
- o. Adhere to the PQDR Process Timeline ([Figure 10.9-7](#)).
- p. Process assigned FMS PQDR investigations via JDRS. Conduct communications with the FMS customer via NAVSUP WSS and D-level FMS Coordinator, to include requests for additional documentation, funding, exhibits, and material disposition instructions.

10.9.6.4 PQDR Support Point:

- a. When requested, assist the PQDR Quality Team Action Point under the established timeframes specified in this NAMPSOP.
- b. Furnish report of findings as requested by the PQDR Quality Team Action Point.
- c. Review and take appropriate action on DRs received from cross-component lines (Army, Air Force, Coast Guard, NASA, FMS, etc. source of supply).
- d. Return, or provide for the return of, the equipment and material to the supply system after completing the investigation unless otherwise directed or unless the material or equipment is beyond salvage. The equipment or material may be inducted for rework if the item is extensively disassembled and salvageable. In the case of CAT I PQDR in support of mishap investigations, no disposition of the equipment or material will be made until released by the senior member of the AMB per OPNAVINST 3750.6.
- e. Provide an information copy of PQDRs and subsequent correspondence to COMNAVAIRSYSCOM (AIR-4.1.9) and COMNAVAIRSYSCOM (AIR-6.0) for organic and commercially reworked aircraft and related components.

10.9.6.5 NATEC (Code 6.8.5.3):

- a. Provide a TPDR Clearinghouse function staffed to coordinate TPDR actions, ISSC, or FST responsibilities, reassignment of TPDR between sites, ISSC, or FST, and to monitor, follow up, and ensure responses are provided within prescribed timeframes.
- b. Maintain an active and historical record of all technical publication deficiencies within the JDRS Web site (<https://jdrs.mil>) and the TMAPS link on the NATEC Web site (<https://mynatec.navair.navy.mil>).
- c. Monitor the status of all CAT 1 TPDR and assign an action to the responsible ISSC or FST, if acknowledgement has not taken place within 1 working day after receipt of a CAT 1 TPDR by the TDA.
- d. Coordinate action with responsible technical publication authoring activities (ISSC, FST, OEMs or subcontractors) to ensure correction of technical publication(s).
- e. Provide TPDR status (as requested).
- f. ISSC or FST must provide the following TPDR support:
 - (1) Screen and acknowledge all incoming TPDR to ensure they have been submitted using the correct categories (CAT 1, CAT 2, CAT 3, or CAT 4). Change or update status on each within the JDRS Web site. TPDR acknowledgment timeframe is defined as:
 - (a) Acknowledge within 1 working day of receipt of a CAT 1 TPDR.
 - (b) Acknowledge within 30 working days of receipt of a CAT 2, 3, or 4 TPDR.
 - (c) Safety triage screening within 5 working days of acknowledgement of CAT 2, 3, or 4 TPDR to ensure TPDR does not contain any safety issue(s) which requires submission as a CAT 1 TPDR.
 - (2) Provide resolution of TPDRs per the following timeframes:
 - (a) CAT 1 TPDR. Issue corrective actions within 30 days of receipt of CAT 1 TPDR, corrective action is defined as an IRAC, RAC, change, or revision to applicable technical publication(s).

NOTES: 1. If resolution is not determined within 5 working days of receipt of CAT 1 TPDR, a preliminary response must be provided. In all cases, a response or report must be provided within 5 working days of receipt of a CAT 1 TPDR. Responses may be a preliminary response message or a final report message, including the actual IRAC, or a combination thereof. Responses to CAT 1 TPDR must be via JDRS message format and addressed to the same PLA as the original CAT 1 TPDR.

2. If resolution is not determined within 30 days and for every 30 days thereafter, an interim response(s) must be provided until final resolution.

3. On final resolution, a final report will be provided indicating final disposition and pending/closing action(s). A final report may take the place of a preliminary response, if final resolution is determined within 5 working days of receipt of CAT 1 TPDR.

(b) CAT 2 TPDR. Complete validation and annotate TPDR status within JDRS to indicate validity and additional steps to be taken. Every effort must be made to complete resolution and issue corrective action within 120 days of receipt of CAT 2 TPDRs. Corrective action for CAT 2 TPDRs must include incorporation into a planned technical publication change or revision, issue as a separate emergent change or revision, or as urgency demands, issue as an IRAC or RAC to the applicable technical publication(s). Multiple CAT 2 TPDRs may be consolidated and resolved in a single corrective action.

(c) CAT 2, 3, and 4 TPDRs. Screen for safety related technical publication deficiencies within 5 working days and acknowledge that the "Safety triage has been completed" within JDRS Web site.

NOTES: 1. If changing the category of a CAT 2, 3, or 4 TPDR to a CAT 1 TPDR, ISSC or FST must create a new CAT 1 TPDR within JDRS by selecting the "Upgrade" feature, to initiate a Category 1 TPDR Priority Message. ISSCs or FSTs must indicate in the message that the original CAT 2, 3, or 4 TPDR has been upgraded.

2. Before downgrading a CAT 1 TPDR to a CAT 2, 3, or 4 TPDR, ISSC or FSTs must contact the TPDR originator to discuss the reason(s) for downgrading the TPDR. If the decision to downgrade is made, the ISSC or FST will select the "Downgrade" feature in JDRS, to indicate the TPDR has been downgraded to a CAT 2, 3, or 4.

3. CAT 3 and 4 TPDRs must be held for additional review, validation, and incorporation as funding permits. The ISSC or FST will attempt to incorporate CAT 3 and 4 TPDR with higher priority manual changes. Program offices will review the volume of CAT 3 and CAT 4 TPDR accumulated against active technical publications biannually and fund their incorporation, at a minimum, once every 3 years.

(3) Provide TPDR status to the ACC, TYCOM, or PMA.

(4) Coordinate with the NATEC TPDR Clearinghouse to resolve problems with the identification of responsibilities, to ensure they are:

(a) Assigned to the correct engineering and data management authorities.

(b) Managed effectively to provide technical publication users timely and accurate corrective actions.

(5) Initiate changes to technical publications under their engineering authority, to correct deficiencies found by the FST or to revise publications by incorporating acquisition related technical data, such as formal TDs. The FST will use JDRS "Fast Track" option to initiate TPDRs for any changes made to their publications, using each TPDR initiated to establish a Technical Manual Source Data Record as the authorized method of effecting a change to a publication.

10.9.6.6 AIDR Screening Points:

a. The AIDR Screening Points are:

- (1) The D-level activity for those aircraft reworked (organic) under their cognizance.
- (2) COMNAVAIRSYSCOM (cognizant PMA) for aircraft manufactured or reworked under commercial contracts.
- (3) The ISSC for aircraft reworked under Depot Maintenance Inter-Service Support Agreement.
- (4) The cognizant government PCO for aircraft manufactured or reworked under commercial contract or inter-Service agreement not administered by COMNAVAIRSYSCOM PCO.
- (5) FRC WESTPAC for those aircraft reworked under their cognizance or at contractor facilities under their cognizance.

b. AIDR Screening Points must:

- (1) Determine if the AIDR has been sent to the correct Quality Team or AIDR Screening Point. If not, use JDRS Acknowledge Receipt tool to readdress the request to the correct Quality Team or AIDR Screening Point for action and inform the originator of the action taken.
- (2) If the correct ISSC cannot be identified, forward the report to the JDRS Clearinghouse, via JDRS Acknowledge Receipt tool for action.

NOTE: Immediate acknowledge receipt or forward action will be taken to ensure the correct ISSC completes the Acknowledge Receipt Process within the AIDR Process Timeline (Figure 10.9-5).

- (3) Evaluate all incoming and outgoing AIDR to determine urgency, action required, and category, using JDRS.
- (4) Use the JDRS Web site (<https://jdrs.mil>) Data Review tool to verify accurate information has been received from the originator. When incomplete or incorrect areas are noted, obtain the necessary information by contacting the originator. Make the necessary changes via the JDRS Data Review or Data Edit tools, and complete the JDRS processing prior to issuing a closing or final report.
- (5) Follow-up on AIDR not received from the aircraft reporting custodian within 45 calendar days after the aircraft is delivered to the reporting custodians.
- (6) Review the AIDR report for accuracy, completeness, and validity.
- (7) Identify those deficiencies requiring a response from the AIDR Action Point.
- (8) Request the AIDR Action Point investigate discrepancies identified.
- (9) Review the AIDR Action Point's investigative report for completeness and validity.
- (10) Provide final response, via JDRS Web site (<https://jdrs.mil>), on all reported AIDR deficiencies as soon as possible, but not later than 45 calendar days after receipt of the AIDR. The final response timeline may be extended for a thorough quality investigation. A technical dialog will be submitted, via JDRS Technical Dialog tool, informing the originator of the investigation progress every 45 days until the final report is submitted. Include the originator and all concerned activities in the distribution of the investigation report.

- (11) Review all AIDR for compliance to D-level maintenance specifications.
- (12) Conduct the necessary follow-up action to reduce the possibility of like occurrences.
- (13) Adhere to the AIDR Process Timeline ([Figure 10.9-5](#)).

10.9.6.7 AIDR Action Point:

- a. Perform an investigation and address each deficiency as requested by the AIDR Screening Point.
- b. Forward investigative results to the AIDR Screening Point.
- c. Take corrective action to preclude/minimize repetitive deficiencies.

NOTE: Some D-level activities serve as both the AIDR Screening and Action Points.

- d. Adhere to the AIDR Process Timeline ([Figure 10.9-5](#)).

10.9.6.8 ADDR Support Point:

- a. ISSC or FST must provide the following ADDR support:

(1) In the event the squadron needs assistance in resolving deficiencies listed in the ADDR, they will request support via the JDRS FST Input Request Tool. ISSC or FST will screen and acknowledge all incoming ADDR FST Input Requests within 3 working days of receipt.

(2) Provide resolution or issue corrective actions for squadron requested ADDR support within 30 days of receipt of FST Input Request.

(3) Initiate changes to the T/M/S O-level periodic maintenance requirements to correct deficiencies noted in the FST or squadron investigation.

(4) Initiate changes to T/M/S D-level PMI specifications to correct deficiencies noted in the FST or squadron investigation.

NOTES: 1. An interim response will be provided via JDRS technical dialog if resolution is not determined within 30 days and a status update every 30 days thereafter, until final resolution.

2. Corrective action is defined as a TPDR, IRAC, RAC, change, or revision to the applicable technical publication(s). Corrective actions will be tracked via the JDRS Action Tracker tool.

10.9.6.9 NAVAIR (AIR-6.8)

a. AIR-6.8 serves as the central manager for baselines. AIR-6.8 will provide POC and e-mail addresses of their baseline managers to the Fleet. Responsibilities for BTR include, but are not limited to, the following:

- (1) Maintain a record of all BTRs.
- (2) Acknowledge receipt of each BTR and assign action, as required, within 1 working day after receipt of a BTR.
- (3) Coordinate action with Depot baseline managers and contractors to ensure correction of baselines.
- (4) Monitor the status of BTR to ensure corrective action is completed.

- (5) Provide BTRs statuses, as requested.
 - (6) Monitor BTRs for possible software changes and coordinate baseline management document changes.
 - (7) Coordinate resolution of NAMP policy deficiencies.
- b. PMA or ISSC Baseline Managers:
- (1) Follow-up each BTR to ensure corrective action is completed.
 - (2) Provide BTR status to ACC or TYCOM and Type Wings, MAGs, or CVWs.

HMR and PQDR Message Template

Precedence: Priority for CAT I or Routine for CAT II

FM: Message Originator PLA

TO: PLA of NAVAIR ISSC or Screening Point AIG 423

INFO: Enter PLAs of other activities, as applicable

SUBJ: (ex. FA-18 CAT II PQDR)

REFS: (include COMNAVAIRFORINST 4790.2)

RMKS

1. Reporting Custodian/UIC	(ex. VFA-122/09355)
2. PLA of ISSC Unit	(ex. FRCSE NORTH ISLAND CA)
3A. RCN	(ex. R09355-03-0030)
3B. Description of failure/discrepancy	(Narrative Field)
3C. Malfunction Defect Code	(ex. 766, Specification, Out of)
4. Julian Date/Location Deficiency Discovered	(ex. 03126/NAS LEMOORE CA)
5. COG Symbol, NSN, SMIC	(ex. 7RH, 1234-00-123-1234, EY)
6. Nomenclature	(ex. TRANSDUCER, MOTION PICK-UP)
7. Operating time at failure/Measurement Unit	(ex. 0430 FLIGHT HOURS)
8. Manufacturer's Part Number	(ex. 140-203-1)
9. Mfr CAGE, Mfr Name, City, State	(ex. 81982, NOMO MFG CO, ALBANY, NY)
10. Qty Received, Qty Inspected, Qty Deficient, Qty In Stock	(ex. 1, 1, 1, 3)
11. Serial Number, Lot or Batch Number, Haz Mat/Procedure/ DMWR/TM	(ex. 172, N/A, N/A)
12A. New, Reworked, or Repaired	(ex. NEW)
12B. Date Manufactured, Reworked, or Repaired	(ex. DDMMMYYYY)
12C. LRA CAGE, LRA Name, City, State	(ex. 54321, GOOD2GO INC., NEWARK, DE)
13A. Contract Number	(ex. N12345-01-C-1234)
13B. Re-Order Requisition/Turn-in Document Number	(ex. N03300-5032-GD00) (for EIs: enter N/A)

NOTE: For AVDLRs, the Re-Order Requisition/Turn-in Document Number is required for credit or charge reversal.

13C. Purchase Order Number	(ex. N1234599PO1234)
13D. Dollar Value of Deficient Material, Man-Hours to Repair, Estimated Cost/Net Price	(ex. 5790.00 DOLLARS, 3 MHRS, 500.00 DOLLARS)
14. Government Furnished Material? (Yes, No, N/A or UNK)	(ex. NO)
15A. Item under warranty?	(ex. UNK)
15B. Warranty expiration date	(DDMMMYYYY)
16. WUC	(ex. 13A1210)
17. NHA NSN, Nomenclature, Part Number, Serial Number, Cage	(ex. 4321-00-321-5432, WHEEL ASSY, 617018, N/A, 81982)
18. End Item NSN, Nomenclature, Part Number, Serial Number, Cage	(ex. UNK, FA-18E, UNK, 161201, UNK)

Figure 10.9-1 (page 1): HMR and PQDR Message Template

COMNAVAIRFORINST 4790.2C
15 Jan 2017

20A. Identify Supply Unit to Ship Exhibit	(ex. NAS LEMOORE SUPPLY)
20B. Action/Disposition Narrative	(ex. HOLDING EXHIBIT, TRANSDUCER PICK-UP AT NAS LEMOORE SUPPLY PENDING DISPOSITION INSTRUCTION)
21. Requested Exhibit Action (Replacement, Credit, Repair, Other)	(ex. REQUEST CREDIT)
22A. How Safety of personnel or activity mission is affected	(Describe Operational, Safety, Suitability, or Effectiveness Impacts)
22B. Number of similar deficiencies in like items reported by the originating activity	(ex. FIVE IN THE PAST FOUR MONTHS)
22C. How deficiency was detected or confirmed	(ex. DURING ACCEPTANCE INSPECTION)
22D. Storage and handling information	
22E. Indicate if supporting documents will be supplied	(ex. PHOTOGRAPHS AVAILABLE)
22F. Description of incorrectly identified new material	
22G. Recommendations	(EI: N/A; PQDR: Fleet - N/A, Depot - list process recommendations)
22H. Name of Submitting Official	(ex. Name, Phone Number, E-mail address, Deployed)
22I. Aircraft model and bureau number	(ex. SH-60F / 164069)
22J Engine model, Serial number, TSN, TSO	(ex. F404-GE-402, 0360419, 1.5 HOURS, 0 HOURS)
22K. TFOA? (Yes or No)	(ex. NO)
22Kl. Date Last Repaired/Replaced	(EI: enter date; PQDR: enter N/A)
22K1. Last maintenance performed	(EI: enter description; PQDR: enter N/A)
22K1. Date of last major inspection (ISO, Phase, HPO, HSC, etc.)	(EI: enter information as required; PQDR: enter N/A)
22K2. Description of damage to TFOA item and any remaining portions attached to aircraft	(EI: enter description; PQDR: enter N/A)
22K3. Type mission and mission profile	(EI: enter description; PQDR: enter N/A)

NOTE: Do NOT display information that will make the DR Classified.

Figure 10.9-1 (page 2): HMR and PQDR Message Template

PRIORITY

FM USS RONALD REAGAN

TO NATEC SAN DIEGO CA//TPDR//NAVAIRWARCENWPNDIV CHINA LAKE CA AIG FOUR TWO THREE
INFO COMSTRKFITWINGSPAC LEMOORE CA

BT

UNCLAS //N04790//

MSGID/GENADMIN/USS USS RONALD REAGAN //

SUBJ/CAT 1 TPDR NES-12 PARACHUTE ASSY//

REF/A/DOC/COMNAVAIRFORINST 4790.2//

REF/B/DOC/NA 13-1-6.2//

NARR/REF A IS NAVAL AVIATION MAINTENANCE PROGRAM.//

REF B IS EMERGENCY PERSONNEL AND DROGUE PARACHUTE SYSTEM MANUAL.//

RMKS/1. USS RONALD REAGAN AIMD/03370

2. NAVAIRWARCENWPNDIV CHINA LAKE CA

3. R20993-96-0014

4. 6010/USS RONALD REAGAN

5. 0513-LP-000-2150

6. THROUGH 21. NA

22. DETAILS

A. NA 13-1-6.2

B. NES-12 PARACHUTE ASSY

C. 01 OCT 95

D. NA

E. NA

F. 15-12C

G. 15-18A-14

H. 15-12C

I. THROUGH K. NA

L. ASSY INDUCTED INTO AIMD FOR SCHEDULED REPACK AND USE AS A TRAINING AID BY PARALOFT PERSONNEL. DURING TRAINING AND ACTIVATION OF THE FOUR LINE RELEASE SYSTEM, THE DAISY CHAIN SECURING LINES 1 AND 2 FAILED TO UNCHAIN. INVESTIGATION REVEALED THAT THE FF THREAD ENTERS AND EXITS THE FLUTE TOO CLOSELY, THE INDIVIDUAL THREADS OF THE FLUTE WEBBING WILL BREAK INSTEAD OF THE FF THREAD. IF THE LAST LOOP OF THE DAISY CHAIN IS NOT PULLED INTO THE FLUTE TO POSITION IT DIRECTLY UNDER THE ENTRY AND EXIT POINTS OF THE FF THREAD IN THE FLUTE, THE THREAD WILL BREAK BUT COULD BE PULLED THROUGH THE FLUTE WEBBING AND BE OF SUFFICIENT LENGTH TO BECOME ENTANGLED IN THE DAISY CHAIN. THIS COULD CAUSE A LOCKING OF THE REMAINING DAISY CHAIN AS IT DID IN THIS CASE. IF THE FF THREAD DOES NOT PIERCE THE LANYARD THROUGH THE CENTER, BUT ONLY CATCHES A PORTION OF THE OUTER CASING, IT IS POSSIBLE TO RUPTURE THE OUTER CASING OF THE LANYARD AND FAIL TO BREAK THE FF THREAD TACKING. PHOTOGRAPHS ARE AVAILABLE UPON REQUEST.

M. RECOMMENDATIONS:

1. RECOMMEND FOLLOWING WARNING BE INSERTED BETWEEN STEPS 13 AND 14 OF PARA 15-18A OF REF B: WARNING - ENTRY AND EXIT POINTS OF THE FF THREAD ARE AT LEAST 1/4 INCH APART. THE LAST LOOP OF THE DAISY CHAIN IS PULLED FAR ENOUGH INTO THE FLUTE TO POSITION IT DIRECTLY BENEATH THE ENTRY AND EXIT POINTS OF THE FF THREAD.

2. RECOMMEND FIG 15-12C BE CHANGED TO SHOW EMPHASIS ON SEPARATION OF ENTRY AND EXIT POINTS OF THE FF THREAD AND POSITIONING OF THE LAST LOOP.

N. J. P. TURNER, PRCM, ALSS LCPO, DEPLOYED//

BT

Figure 10.9-2: Category 1 Technical Publication Deficiency Report (Example)

PRIORITY
FM STRKFITRON TWENTY TWO
TO COMNAVAIRSYSCOM PATUXENT RIVER MD//6.8//PMA-265//
INFO COMNAVAIRFOR SAN DIEGO CA
COMSTRKFITWINGPAC LEMOORE CA
FRC SAN DIEGO CA//
BT
UNCLAS //04790//
MSGID/GENADMIN/VFA-22//
SUBJ/BASELINE TROUBLE REPORT FOR F/A-18C TD PPC 117//
REF/A/DOC/COMNAVAIRFORINST 4790.2/15FEB08//
AMPN/REF A IS NAVAL AVIATION MAINTENANCE PROGRAM//
RMKS/1. VFA-22/PA3/09561
2. F/A-18C/PMA-265.
3. BTR VFA-22 CALENDAR DATE/SN
4. 00118/NAS LEMOORE CA
5. F/A-18C/96406/3103821-01
6. PPC 117
7. COMNAVAIRFOR 291630Z APR 04
8. N/A
9. TD PPC 117 IS MISSING FROM IN THE OPTIMIZED OMA BASELINE.
10. CHANGE BASELINE TO REFLECT PPC 117.
11. J. L. TACKETT, AMCS, LCPO, DSN 949-1111, COMM 409-998-1111
BT

Figure 10.9-3: Baseline Trouble Report Message (Sample)

Discrepancy Report Workload Priority

Priority Number & Type of Work Load

1. Special Projects. Reserved for specific assignment by COMNAVAIRSYSCOM to fulfill emergency requirements of the CNO.

Investigations required by aircraft accident boards, boards of investigations, boards of inquiry, or safety DRs (CAT I EIs and CAT I PQDRs) under JDRS.

2. CAT II PQDRs under JDRS. Prototypes and projects of an urgent nature directed by COMNAVAIRSYSCOM

Component Level Schedule Level One B08.

Emergency in-use SE requirements (carrier deployments, aircraft down for SE).

3. Acceptance and transfer of aircraft/missiles in delivery. Aircraft in COMNAVAIRSYSCOM field activity custody awaiting delivery and requiring correction of discrepancies/compliance with mandatory technical directives (including modifications).

Manufacturing, B08 weekly level two (including SE components).

Emergency repairs to missiles, aircraft, power plants, components, and customer services to meet operational requirements established by command authority.

Regularly scheduled in- use SE requirements, including calibration and related support activities.

Industrial field team modifications and on-site SE (including calibration) industrial field team support.

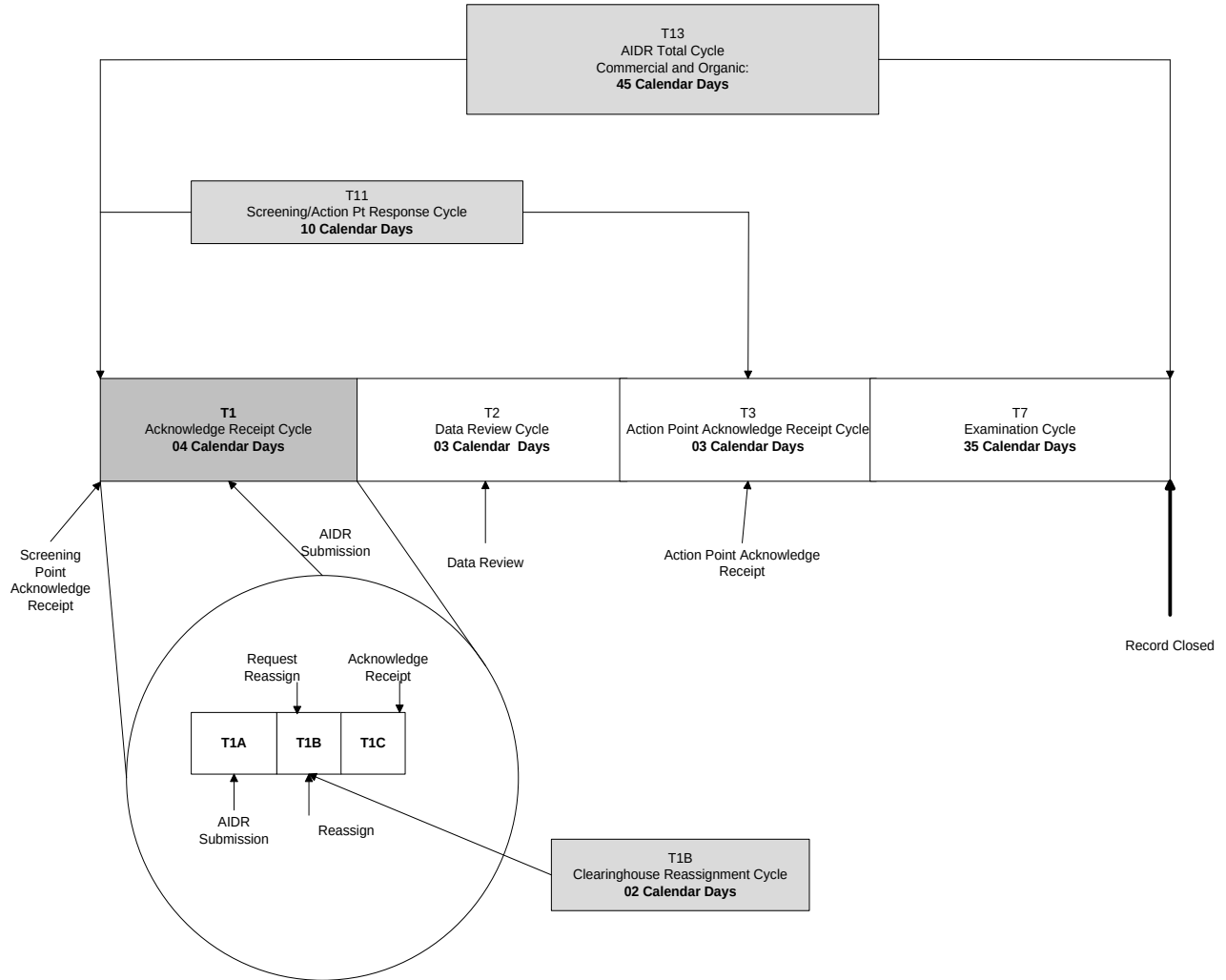
4. Programmed D-level industrial workloads. Aircraft SDLM; rework of missiles, power plants, B08 weekly three or four level requirements (including SE components), SE and related routine supporting programs.

Routine prototypes and projects not specified under priority 2 above.

5. Preparation of aircraft for delivery to long term storage points.

Salvage and reclamation.

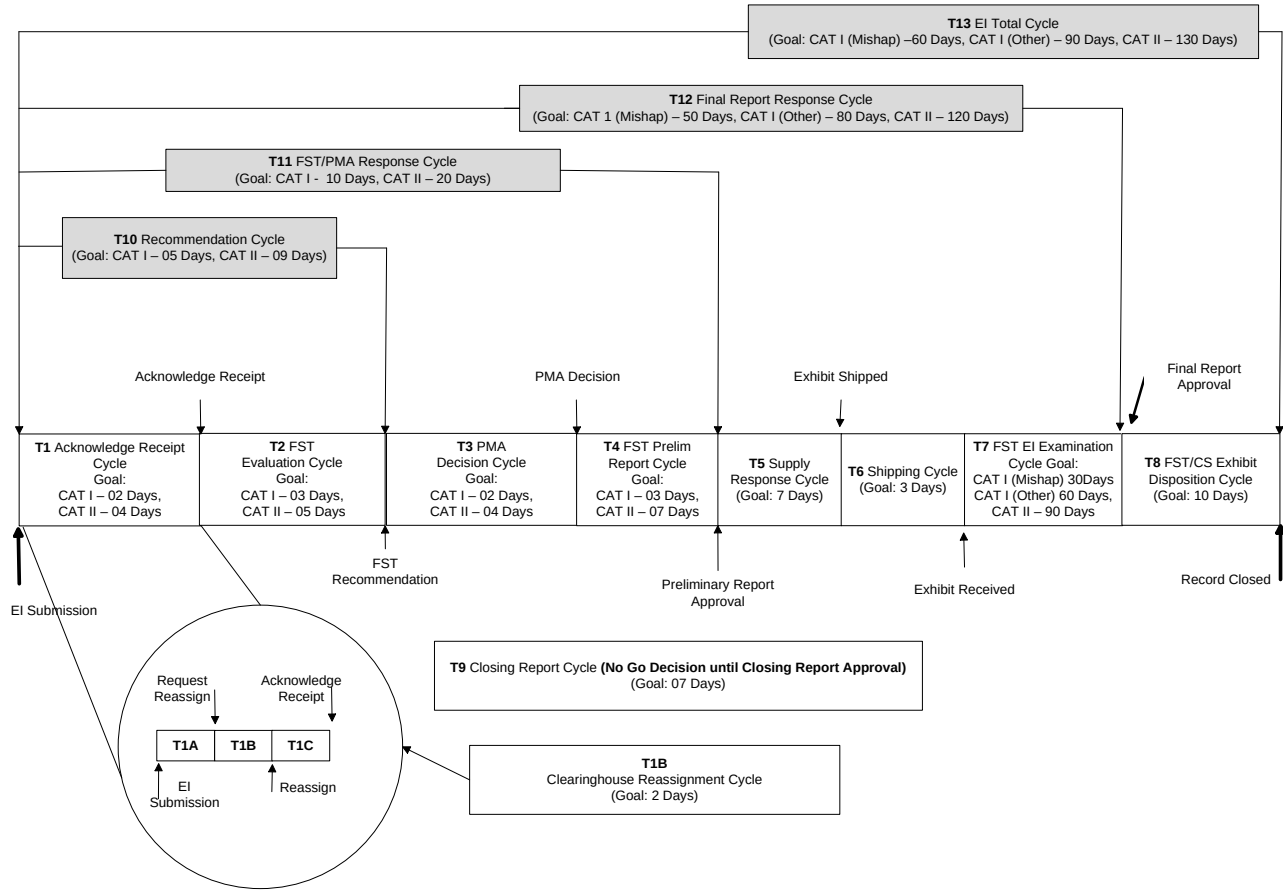
Figure 10.9-4: Discrepancy Report Workload Priority



NOTES: 1. AIDR process timeframes may be extended for a thorough quality investigation to be performed. A “Technical Dialog” will be submitted informing the originator of the progress of the investigation every 45 days after receipt of an AIDR.

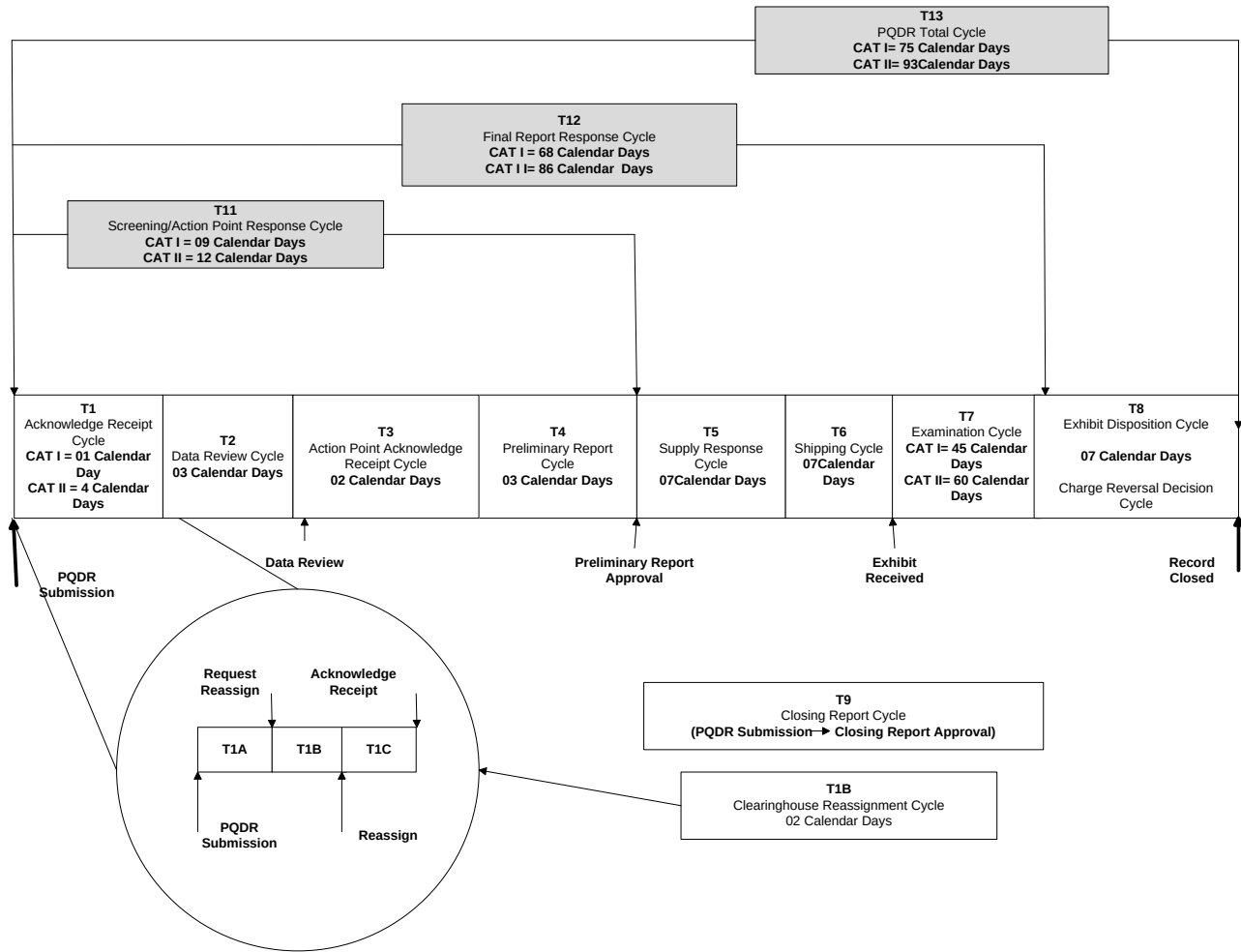
2. AIDR process timeframes do not include scheduled facility shutdown periods (weekends/holidays).

Figure 10.9-5: AIDR Process Timeline



NOTE: Goals deployed on timeline reflect the average TAT goal for each process step and include additional time to allow for weekends and holidays.

Figure 10.9-6: EI Process Timeline



NOTES: 1. PQDR process timeframes may be extended for a thorough quality investigation to be performed. An “Interim Report” will be submitted informing the originator of progress of the investigation every 45 days after receipt of a CAT I exhibit, or 60 days after receipt of a CAT II exhibit.

2. PQDR process timeframes do not include scheduled facility shutdown periods (weekends/holidays).

Figure 10.9-7: PQDR Process Timeline

Partial Listing of In-Service Support Centers

<u>Program Manager</u>	<u>In-Service Support Center</u>	<u>Equipment Supported</u>
PMW-187 PMA-201	NAV ISSC	Navigation Systems, GPS
	CSW ISSC	Conventional/Precision Strike Weapons, LCDB, JDAM, JSOW, SLAM-ER, SDB II, DMLGB, LGB, and General Purpose Bombs
PMA-202	CAD ISSC	Explosive Cartridges, CADs, PADs, Rockets, JATO, NACES
	AAE ISSC	Thermal Batteries
	AECS ISSC	Bomb Racks, Aircraft Missile Launchers Aircrew Escape and Crashworthy Systems (AECS), GRU-EA7, SJU-5/6, SJU-4/13/14, NACES Ejection Seats, Parachute Systems, Fixed/Rotary Wing Crashworthy Systems, Crashworthy Seating Systems
	AOS ISSC	Aircrew Oxygen System (AOS), LOX Converters, O2 Regulators, O2 cylinders, O2 Hoses, OBOGS, OBOGS Support Equipment, Smoke Masks, Emergency O2 Systems (including seat pan emergency O2), Portable Fire Extinguishers
	LSS ISSC	Life Support Systems (LSS), Survival Equipment, Bail Out Parachutes, Radio/Survival Electronics
PMA-205 PMA-207	NVS ISSC	Night Visions Systems (NVS), AN/AVS-9, SNVS
	CB ISSC	Chemical Biological (CB) Aircrew Protective Chemical Biological Equipment
PMA-208 PMA-209	TS ISSC	Aviation Training Equipment/Devices
	CA ISSC	Commercially Supported Aircraft/Engines. TC-4C, C-9B, C-12, C-20, C-26, UC-35, C-37, CT-39G, T-39N, C-40, DC-130, C-130J, MD-369, T-34C, T-44A, TH-6B, TH-57, JT8D, PT6A, JT12, MK511, MK5298X, MK611, T56-A-9, 250-20N, AE2100D3
PMA-208 PMA-209	TRGT ISSC	Aerial Targets and Decoys Systems
	ACE ISSC	Air Combat Electronics (ACE), ARC-182, ARC-210, AYK-14, APX-100, GPWS
	ACE/OOP ISSC	Out of Production ACE Systems
PMA-213 PMA-225	ATC/LS ISSC	Air Traffic Control and Landing Systems
	WWMM ISSC	Worldwide Multi-Mission Systems, AGM-65, AGM-88, AGM-114, BGM-71
PMA-226	H-46 ISSC	H-46, T58
	F-4 ISSC	QF-4
PMA-231	E-2/C-2 ISSC	E-2/C-2, ATDS

Figure 10.9-8 (page 1): Partial Listing of In-Service Support Centers

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PMA-233	MPS ISSC	Mission Planning Systems, JMPS, TAMPS
PMA-234	EA-6B ISSC	EA-6B, J52-P-408
PMA-242	DSS ISSC	Defense Suppression Systems, AGM-65, AGM-88, AGM-114, BGM-71
PMA-248	TTR ISSC	Tactical Training Range Systems, KGV-23, JTCTS, LATR, TACTS
PMA-251	ALRE ISSC	Aircraft Catapults and Arresting Gear, Helicopter Landing Systems, Visual and Optical Landing Aids, Shipboard Aviation Data Management Systems, Wind Measuring Systems, Shipboard Aviation Marking and Lighting, USMC Expeditionary Airfield Equipment, Afloat Navy Aircraft Fire-Fighting Equipment
PMA-257	AV-8 ISSC	AV-8B, TAV-8B, F402
PMA-258	SOAD ISSC	Standoff Missile Systems, AGM-84, AGM-119
PMA-259	AAW ISSC	Air to Air Weapons, AIM-7, AIM-9
PMA-260	SE ISSC	Aviation Common Support Equipment, CASS
PMA-261	H-53 ISSC	CH-53, MH-53, T64
	EXHELO ISSC	VH-60, VH-3
PMA-262	UAS ISSC	Persistent Maritime UAS
PMA-263	UAS ISSC	Small Tactical UAS
PMA-264	ASW ISSC	Air ASW Systems, Sonobouy, Sensors, GASS
PMA-265	F/A-18 ISSC	EA-18, F/A-18, F404, F414
PMA-266	UAS ISSC	Multi-Mission UAS
PMA-268	UAS ISSC	NUCAS
PMA-271	ASC ISSC	Airborne Strategic Communications Systems, E-6, TC-18, CFM56
PMA-272	EWS ISSC	Tactical Aircraft Electronic Warfare Systems, ASPJ, IDECM, ALR-67, AAR-47, ALE-29, ALE-39, ALE-47, MWS, and IRCM
PMA-273	T-45 ISSC	T-45 TS, T-6, F405
	T-6 ISSC	T-6
PMA-275	V-22 ISSC	V-22, T406 (AE1107C)
PMA-276	H-1 ISSC	AH-1/UH-1, T400, T700
PMA-280	TOMAHAWK ISSC	Tomahawk Cruise Missile
PMA-281	CM ISSC	Cruise Missiles
	CMCC ISSC	Cruise Missile Command and Control Systems
PMA-282	WCS ISSC	Tactical Weapons Control Systems
PMA-290	P-3 ISSC	Maritime Surveillance Aircraft. P-3, EP-3, T56
	S-3 ISSC	S-3, ES-3, TF34, P-8
	ARS ISSC	Aerial Refueling Systems
PMA-299	MMH ISSC	Multi-Mission Helicopters. H-60, SH-2G
PMS-210	AMCM ISSC	Airborne Mine Countermeasures
Various Programs	TM ISSC	Technical Publications
	BAT ISSC	Aircraft Batteries
	APU ISSC	APU, Auxiliary Power Units, GTC, GTCP
	ATS ISSC	Air Turbine Starter (ATS), Ram Air Turbine, Starters, Cooling Turbines, Valves/Regulators, Heat Exchangers
	PROP ISSC	Propellers
	XMSN ISSC	Gearbox Bearings, Transmissions

Figure 10.9-8 (page 2): Partial Listing of In-Service Support Centers

Maintenance Technologies Points of Contact

FRCE CHERRY POINT NC

Aircraft Confined Space	(252) 464-7345; DSN 451
Composite Repair	-7159
Elastomeric Materials	-9341
Failure Analysis	-9889
Fluid Contamination	-9767
Inorganic Coatings	-7154
Welding/Brazing	-8999

FRCSE JACKSONVILLE FL

Materials Testing (Mechanical Testing & Chemical Analysis)	(904) 790-6402; DSN 942
Paint/Organic Coatings	-6398
Thermal Spray	-6417

FRCSW NORTH ISLAND CA

Adhesive Bonding/Sealants	(619) 545-9732; DSN 735
Bearings	-0027
Canopies/Transparencies	-9732
Corrosion Prevention/Control	-0027
Heat Damage Evaluation	-9732
Heat Treating	-9732
Nondestructive Testing/Inspection	-9732
Preservation	-0027
Tires	-8675/9732

COMNAVAIRSYSCOM PATUXENT RIVER MD

Aircraft Wiring	(301) 342-0810; DSN 342
Fiber Optics/Networks	-9115

NAVAIRWARCENACDIV PATUXENT RIVER MD

Engine Composites	(301) 342-8010; DSN 342
Fuels	(301) 757-3406; DSN 757
Lubricants	-3413

NAVAIRWARCENWPNDIV CHINA LAKE CA

Airborne Weapons Materials	(760) 939-2060; DSN 437
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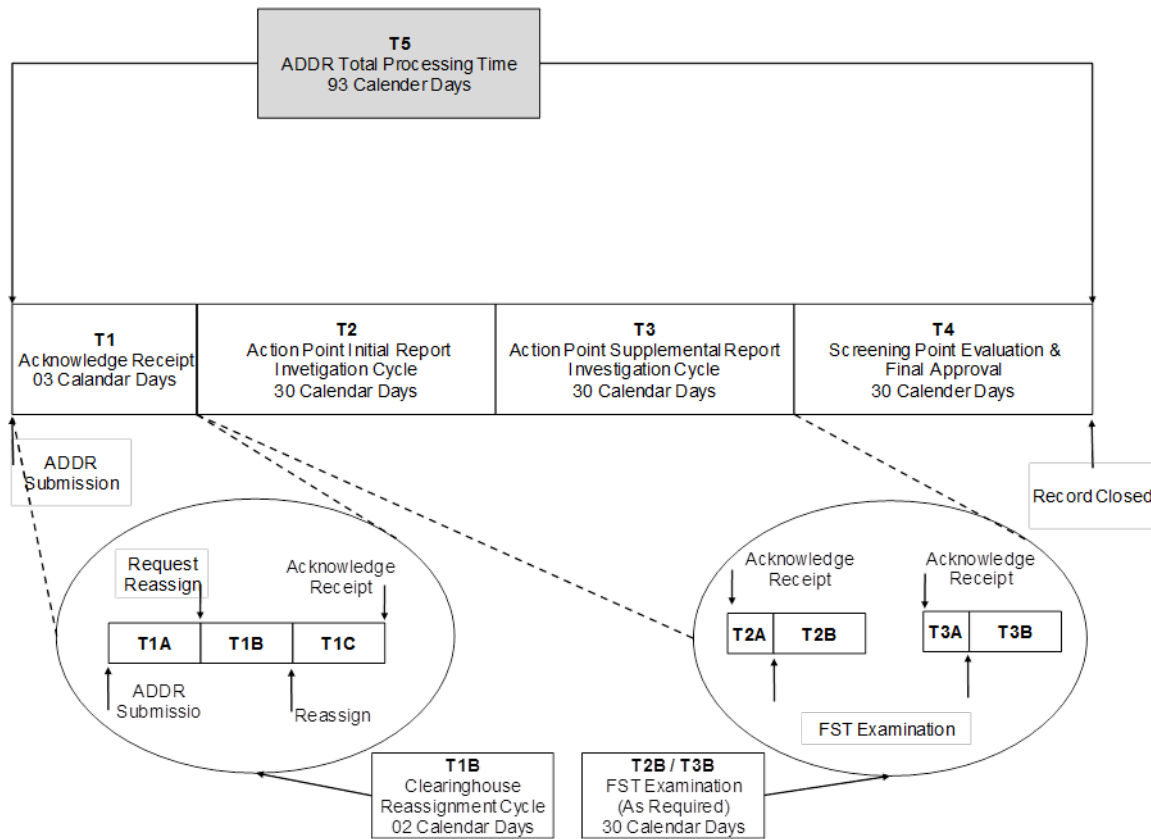
NAVAIRWARCENWPNDIV POINT MUGU CA

Airborne Weapons and Targets Maintenance/Handling	(805) 989-5380; DSN 351
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NAVSURFWARCENDIV CRANE IN

Energy, Power and Interconnect Technologies Division	(812) 854-4103; DSN 482
Electrical/Electronic Assemblies/Electrostatic Discharge	-1973

Figure 10.9-9: Maintenance Technologies Points of Contact



NOTES: 1. ADDR process timeframes may be extended to enable a thorough investigation to be performed. A “Technical Dialog” will be submitted informing the originator of the progress of the investigation every 30 days after receipt of an ADDR.

2. ADDR process timeframes do not include scheduled shutdown periods (weekends/holidays).

Figure 10.9-10: ADDR Process Timeline

10.10 Technical Directive (TD) Compliance Program (NAMPSOP)

10.10.1 References

- a. NAVAIR 00-25-300, Naval Air Systems Command Technical Directives System.
- b. OPNAVINST 8000.16, Naval Ordnance Management Policy Manual.
- c. NA500C Aeronautical Technical Directive Index Report.
- d. DECKPLATE-TDRS, NAT02, SE TD Listing.
- e. DECKPLATE-TDRS, NAT04, Aviation Aircrew Equipment TD Listing.
- f. DECKPLATE-TDRS, REP07, Technical Directive Compliance Report.
- g. DECKPLATE-TDRS, LIST01, Technical Directive Applicability Listing.
- h. DECKPLATE-TDRS LIST 02, TD Requirements.
- i. DECKPLATE-TDRS LIST 04, Incorporation (INC) Listing for Equipment.
- j. DECKPLATE-TDRS LIST 04H, Historical INC Listing for Equipment.
- k. NATEC San Diego, Code 6.8.5.3, Weekly Summary for Issued TDs.
- l. NAVAIRINST 13100.17, Red Stripe Memorandum System.
- m. NAVAIR 00-25-100, Naval Air Systems Command Technical Publications Library Management Program.

10.10.2 Introduction

The Technical Directive (TD) Compliance Program directs procedures for TD compliance by O-level, I-level, and D-level activities.

10.10.2.1 NAVAIR issues TDs for inspecting or altering the configuration of aircraft, engines, systems, weapons, or equipment. NAVAIR 00-25-300 is the guiding instruction for creating, approving, and issuing TDs.

NOTE: OPNAVINST 8000.16 is the guiding instruction for TDs applicable to weapons.

10.10.2.2 TDs are assigned to four categories based on type, urgency, and purpose:

a. Immediate Action - Assigned when unsafe conditions exist which, if uncorrected, could result in fatal or serious injury to personnel, or extensive damage or destruction of valuable property; and the conditions embody risks calculated to be unacceptable.

b. Urgent Action - Assigned when potentially hazardous conditions exist which, if uncorrected, could result in personal injury or damage to valuable property or reductions in operational readiness; and conditions that would compromise safety or embody risks calculated to be acceptable within defined time and performance limits.

c. Routine Action - Assigned to retrofit changes when the urgency does not warrant assignment of Immediate Action or Urgent Action categories, and the risk is acceptable within broad time limits.

d. Record Purpose - Assigned to Formal Change TDs issued to document configuration changes that were incorporated in all affected equipment by the change designer or originator before the TD was issued. The Record Purpose TD serves as the official record of an engineering change in the Technical Directive Reporting System (TDRS) database.

10.10.2.3 NATEC San Diego, Code 6.8.5.3, publishes the Weekly Summary for Issued Technical Directives of all TDs issued during the previous week. This naval message report is available on the NATEC Web site (<https://mynatec.navair.navy.mil>).

10.10.2.4 The primary DECKPLATE TDRS reports and lists used in managing TD compliance are:

a. TDRS reports:

(1) NA500C, Aeronautical TD Index Report provides a list of active TDs, applicable to each type/model/series (T/M/S) aircraft and engine.

(2) NAT02, SE TD Listing (with index codes B and D) provides information by Type Equipment Code and is used to screen for active and completed Support Equipment (SE) TDs.

(3) NAT04, Aviation Aircrew Equipment TD Listing (with index codes B and D) is used to screen for active and completed Aviation Life Support Systems (ALSS) TDs.

(4) REP07, TD Compliance Report provides a complete list of incorporated TDs for specific component serial numbers (S/N), used to validate prior incorporations.

b. TDRS lists:

(1) LIST01, TD Applicability Listing provides a quick reference to Airframe Change (AFC) and Airframe Bulletin (AFB) TDs based on applicability range and series information for specific T/M/S aircraft.

(2) LIST02, TD Requirements Listing provides a list of Not Incorporated (NINC) AFBs and AFCs for individual aircraft, and Power Plant Bulletins (PPB) and Power Plant Changes (PPC) for engines.

(3) LIST04, Incorporation (INC) Listing for Equipment provides a list of Incorporated (INC) AFBs and AFCs for individual aircraft; and PPBs and PPCs for engines.

(4) LIST04H, Historical Incorporation Listing for Equipment provides a list of historical INC AFBs and AFCs for individual aircraft, and is used to validate prior compliance.

10.10.3 Requirements

10.10.3.1 Configuration Changes

No configuration changes will be made to naval aviation systems including aircraft, engines, airborne weapons, airborne systems and system components, aircraft launch and recovery equipment, aviation SE, and training systems, unless directed by a TD. Exceptions:

a. Aircraft Controlling Custodian (ACCs) and Type Commander (TYCOMs) may authorize one prototype installation of a proposed change. Approval to do more than one prototype requires COMNAVAIRSYSCOM concurrence.

b. COMNAVAIRSYSCOM may authorize Record Purpose TDs for incorporation prior to approval of the Formal Change TD.

10.10.3.2 TD Compliance

Aircraft, engines, SE, equipment, and components will be restricted from use, if assigned TD category (Immediate Action, Urgent Action, or Routine Action TDs) are not complied with, before expiration of the specified due date, time, or event.

NOTES: 1. Corrected Copy TDs do not require any action.

2. The Target Completion Date (TCD) listed on a TD is an administrative entry of the issuer's estimate of when the TD will be completed for all affected equipment. Expiration of the TCD does not invalidate the TD, and does not require a deviation or any other action by Fleet activities.

a. Immediate Action TDs must be complied with prior to the next flight or use of the affected aircraft, engine, or equipment.

b. Immediate Action TDs affecting RFI spare engines, modules, SE, equipment, and components must be complied with prior to issuance of the item, unless the using activity is the level designated to incorporate the TD. For example, an I-level activity does not have to incorporate Immediate Action and Urgent Action O-level TDs before declaring the item RFI.

c. Urgent Action TDs affecting operational aircraft must be complied with prior to launching the aircraft on a mission that will exceed the compliance due date, time, or event.

NOTE: I-level activities may submit requests to the ACC Class Desk to incorporate D-level TDs if material, tools, technical data, and skills are available.

d. Unless directed by the ACC, D-level activities will only incorporate O-level and I-level TDs if the aircraft or item is sufficiently disassembled during normal D-level processing, incorporation does not require a controlled kit, parts are readily available, and compliance adds no additional direct man-hour cost. D-level activities will comply with O-level and I-level TDs if incorporation is needed in order to modify a part required to complete depot rework. Rapid Action Minor Engineering Changes (RAMEC) will not be incorporated during depot rework, unless directed by the ACC.

e. I-level and D-level Engine TD Compliance.

(1) Immediate Action TDs issued while an engine or engine module is undergoing disassembly, repair, reassembly, or test must be incorporated regardless of whether or not completed work has to be redone.

(2) Urgent Action TDs with safety impact that are issued while an engine or engine module is in the repair, reassembly, or test cycle must be incorporated regardless of whether or not completed work has to be redone. If not specifically addressed in the TD, a request for direction to incorporate or not incorporate an Urgent Action TD issued while an engine is in the post-assembly test cycle will be sent to the ACC Engine Class Desk.

(3) Urgent Action TDs without safety impact and Routine Action TDs issued while an engine or engine module is in the repair, reassembly, or test cycle will be incorporated only if no completed work has to be redone.

10.10.3.3 Compliance Deviation Procedures

a. Operational Commanders may authorize deferral of compliance for Immediate Action, Urgent Action, and Routine Action TDs, if required due to combat operational necessity. The deviation procedures in paragraph 5.1.1.6, NOTE 3, apply.

b. O-level Commanding Officers (COs) may approve a one-time deferral of compliance for Routine Action TDs if parts or kits are on order, but not received, or if the ability to accomplish mission-essential flight operations will be affected by downing the affected aircraft or equipment. Conditions:

(1) Deferral will be granted to a specific bureau number (BUNO) aircraft or serial number (SERNO) equipment or component.

(2) The affected aircraft or equipment has not already been granted a compliance deferral for the subject TD.

(3) Deferral cannot exceed the next compliance due date, time, or event, for example, next Phase Inspection.

NOTE: Deferral beyond the one-time CO contingency deviation requires ACC approval.

(4) A naval message must be sent to the ACC, Type Wing or MAW, and CVW or ACE to inform them of the contingency deviation. The message will contain details on the conditions of the deviation, to include:

(a) T/M/S and BUNO (aircraft) or nomenclature, model number and serial number (equipment).

(b) TD number and a summary of the TD requirement.

(c) Compliance due date, time, or event specified on the TD and when due for the affected aircraft or- equipment.

(d) Circumstances necessitating the deviation, for example "COMPLIANCE DEFERRAL IS REQUIRED DUE TO LACK OF PARTS." or "COMPLIANCE DEFERRAL IS REQUIRED TO MEET MISSION ESSENTIAL FLIGHT OPERATIONS." If deferral is needed due to lack of parts or kits, the NIIN and part number, requisition number, and estimated delivery date will be included.

(e) Length of time deferral is needed, for example "TD WILL BE COMPLIED WITH UPON RECEIPT OF PARTS" or "TD WILL BE COMPLIED WITH NO LATER THAN NEXT PHASE."

c. Compliance deviations not covered by Operational Commander combat deviations or CO one-time contingency deviations must be requested from the ACC by naval message, with the information listed in [paragraph 10.10.3.3b\(4\)](#).

d. Compliance deviations will be recorded in the Miscellaneous/History record of the CM ALS or aircraft logbook, Aeronautical Equipment Service Record (AESR), Module Service Record (MSR), Repair/Rework/Overhaul/Exceedances section of the Assembly Service Record (ASR), maintenance

record of the Equipment History Record (EHR), or repair/rework/overhaul section of the Scheduled Removal Component (SRC) card. SE TD compliance deviations will be documented in Section VI Miscellaneous History Record of the SE Custody and Maintenance History Record. Entries must include the name and title of the approving activity, and the S/N and Date Time Group (DTG) of the authorization letter or message.

Example 1 - Routine Action PPC 123 deferred for compliance due to lack of parts, in accordance with COMNAVAIRFORINST 4790.2C Commanding Officer one-time deferral authority. Reference message STRKFITRON ONE TWO THREE 310001Z OCT 16.

Example 2 - Routine Action PPC 123 NINC due to issuance while engine was in the reassembly stage. Waiver granted until next induction to I-level or D-level for repair, per COMNAVAIRLANT N421M Engine Class Desk message COMNAVAIRLANT NORFOLK VA 150001Z NOV 2016.

Example 3 - Routine Action AFC 456 NINC due to lack of parts. Waiver granted until next induction for PMI per COMNAVAIRLANT N421 F/A-18 Class Desk ltr Ser 4790/001 dated 01 December 2016.

e. ALSS TD compliance deviations will be documented by attaching a copy of the deviation message to the Parachute Record (OPNAV 4790/101), Seat Survival Kit Record (OPNAV 4790/137), Aircrew Systems Record (OPNAV 4790/138), or Aircrew Personal Equipment Record (OPNAV 4790/159), and entering the information in the CM ALS Miscellaneous History section.

10.10.3.4 TD Compliance Verifications

a. A “BASELINE” TD compliance verification must be conducted upon receipt of aircraft, engines, SE, maintenance trainers, and serial numbered weapon system components physically assigned to the activity’s custody.

b. After completion of the BASELINE verification, “SUBSEQUENT” TD compliance verifications will be completed every 12 months (at a minimum) of all TDs issued, incorporated, or cancelled in the previous 12 months. The first SUBSEQUENT verification will be completed no later than (NLT) 12 months after the BASELINE review. After completion of a SUBSEQUENT verification, the applicable TDRS report will be updated with current status and labeled “SUBSEQUENT”. The most recent SUBSEQUENT report will be filed on top of the BASELINE report in the aircraft historical file or AESR manila envelope, or other location directed by the TD Compliance Program Manager.

NOTE: NA (administrative) amendment TDs in the “BASELINE” report do not have to be reviewed during the “SUBSEQUENT” review.

c. A verification of NINC TD compliance due dates will be completed prior to each aircraft phase inspection and prior to transfer. After completion of the transfer verification, the applicable TDRS report will be updated with accurate status and labeled “TRANSFER”. The report will be filed in the aircraft historical or AESR manila envelope.

d. The following reports will be reviewed during verifications:

- (1) NA500C.
- (2) NAT02.
- (3) NAT04.

NOTES: 1. Activities utilizing NTCSS Optimized OMA NALCOMIS (OOMA), will verify the Outstanding TD Report upon completion of aircraft NA500C verification. All discrepancies will be corrected and the report will be retained with the BASELINE verification as a permanent document.

2. Removal of a TD from TDRS reports does not relieve reporting custodians of responsibility to verify the status of the TD. Cancelled, completed (process of removing TDs from TDRS reports), or superseded TDs will not be deleted from the equipment record until the item the TD applies to has been replaced with a new part number or removed due to obsolescence.

e. (Aircraft and Engines) NA500C report verification procedures:

(1) Download the NA500C report from DECKPLATE (<http://www.navair.navy.mil/logistics/deckplate>). Select the NA500C and applicable T/M/S from the drop down menu, and enter the fourth digit of the TEC in the TEC series block to obtain specific T/M/S NA500C reports.

(2) Annotate TD status as INC (Incorporated), NINC (Not Incorporated), CANCELLED, or NA (Not Applicable) next to each TD.

NOTE: NA annotations must include a reason, for example, “NA this BUNO”, “NA this Part Number” or “Administrative change” (such as a TCD).

(3) File the completed NA500C report in the aircraft historical file or AESR manila envelope, or other location directed by the TD Compliance Program Manager.

f. (SE) TDRS NAT02 Report verification procedures:

(1) Download the NAT02 report each month from DECKPLATE (<http://navair.navy.mil/logistics/deckplate>). Select the NAT02 report with Index Codes B & D for “BASELINE” verifications and Index Code B for “SUBSEQUENT” verifications. Compare this report to the previous “SUBSEQUENT” verification and research any differences noted.

(2) Annotate TD status applicability to specific equipment held within the activity. Annotation can either be done electronically or by hard copy.

(3) Maintain a current annotated NAT02 with applicable TDs in the location directed by the TD Compliance Program Manager.

(4) Document performance of NAT02 “BASELINE” verification and annual “SUBSEQUENT” verification on the SE Custody and Maintenance History Record (OPNAV 4790/51) Section VI Miscellaneous History Record and/or applicable CM ALS.

g. (ALSS) TDRS NAT04 Report verification procedures:

(1) Download the NAT 04 report each month from DECKPLATE (<http://www.navair.navy.mil/logistics/deckplate>). Select the NAT 04 report with Index Codes B & D. Compare this report to the previous report and research any differences noted.

(2) Annotate TD status applicability to specific ALSS equipment held within the activity electronically or by hard copy.

(3) Maintain a current annotated NAT04 with applicable TDs in the ALSS work center or other location as directed by the TD Compliance Program Manager.

10.10.3.5 TD Applicability Reviews

O-level and I-level activities will use the Technical Directive Review Checklist (Figure 10.10-2) to document the review of newly received TDs.

10.10.3.6 TD Compliance Documentation

a. A work order (WO) or maintenance action form (MAF) will be used to document TD compliance, per Chapter 15 procedures. If more than one work center is involved, a separate TD Assist WO or MAF will be written for each assist work center to document their portion of the TD. If the TD has multiple parts, a separate WO or MAF must be initiated for each part. The WO or MAF will be annotated as follows:

(1) The Discrepancy block will be annotated with the due NLT compliance time or event, for example, “Comply with NLT next Phase inspection” or “Comply with NLT next 10 flight hours”. If compliance is based on an operating time (such as operating hours or number of arrested landings), annotate the actual “Due NLT” time at which point the aircraft or equipment is restricted from flight or use. For example, if current operating hours = 4321 and the specified compliance time is NLT 10 hours after receipt of the TD, the Due NLT compliance time is $4321 + 10 = 4331$ maximum aircraft or equipment hours before the TD is due.

(2) Annotate time compliance in the system reason block (up to 25 characters), for example, “AFB 566/DUE NEXT 224 DAY” or “AFC 771 RA/DUE NEXT PHASE”.

NOTES: 1. The TD compliance time will be calculated from the DTG for TDs issued by message and by the date of the letter for TDs issued by letter. For example, for TDs requiring compliance based on flight hours, determine the time since new of the aircraft or component as of the date of the message DTG (or date on the letter for letter-type TDs), and add the comply NLT flight hours to calculate the compliance deadline.

2. SE being documented by “lot” per paragraph 10.17 will have a separate WO or MAF for each item of SE requiring a TD action. Activities are not authorized to issue a single WO or MAF to incorporate a TD on an entire lot. Review the SE PMS NAMPSOP per paragraph 10.17 for further information on for “lot” documentation procedures.

3. A TD Compliance WO or MAF is not required for TDs specified as action for a different level of maintenance. For example, O-level activities do not have to issue a WO for TDs specified for I-level or D-level action.

4. Removal (de-configuration) of a previously-completed TD modification will be documented in the same manner as TD incorporation, except for block A35 and the (H-Z) record. TD Status Code Q will be entered in block A35 and the (H-Z) record will be left blank per Chapter 15.

b. The following Transaction Codes will be used:

Transaction Code 41 - Used for compliance with no P/N change and for non-serialized components.

Transaction Code 47 - Used for compliance on all serialized components, regardless of whether there is a P/N change. Use of Transaction Code 47 requires the (E) and (G) sections of the WO or MAF to be completed.

c. Compliance logbook, record, and report entries:

(1) TD compliance will be documented on TDRS Lists Nos. 02 and 04, and in SE Custody and Maintenance History Record (OPNAV 4790/51), Auto Log Sets, and component history cards per [Chapter 5](#).

(2) New AFC and AFB TDs will be added to TDRS List No 02.

NOTE: If any item of SE documented as part of a lot did not receive the required TD action, annotate (in pencil) the reason for noncompliance on the SE Custody and Maintenance History Record (OPNAV 4790/51) in Column B of Section VI (next to the S/N for that item). Once the TD has been complied with, erase the reason for noncompliance from Section VI and record the item S/N in the remarks column of Section IV (TD Section).

10.10.4 Responsibilities

10.10.4.1 COMNAVAIRSYSCOM Program Offices:

a. Thoroughly validate and verify TDs per the requirements of NAVAIR 00-25-300 prior to issuing the TD.

b. Follow the procedures of NAVAIRINST 13100.17 when issuing grounding TDs.

c. Validate the currency of the NA500C every six months, and as required coordinate with Type Wings or MAWs and ACC Class Desks to verify data accuracy.

10.10.4.2 ACC Aircraft or Equipment Class Desks:

a. Coordinate TD verifications prior to releasing to the Fleet for compliance. Verification will include:

(1) Testing by at least one Fleet activity to confirm adequacy and clarity of technical content, verify activities have the equipment and manpower to accomplish the TD, and to verify the man-hours required. TDs that contain separate O-level and I-level actions will be sent to both a squadron and an I-level activity for validation.

(2) Confirmation of the availability of parts or kits, consumable materials, SE, technical manuals, manpower, and funding required to accomplish the TD.

(3) Operational impact of out of service time and man-hour requirements.

(4) Feasibility of meeting the compliance due time or event.

(5) A written response (email, letter, or message) to the Program Office on concurrence or non-concurrence and any changes required.

b. Maintain a current schedule of the estimated compliance date or event, by BUNO, for aircraft TDs with TYCOM directed compliance. The schedule will be provided to applicable Type Wings and MAWs.

c. Coordinate with the Program Office on TD abeyance and amendment or revision messages.

d. Formally respond to TD compliance deviation requests via letter or naval message.

- e. Act as final approver for requests to perform one-time prototype changes.

10.10.4.3 NATEC:

Post the Weekly Summary of Issued TDs messages on the NATEC Web site (<https://mynatec.navair.navy.mil>).

10.10.4.4 Type Wing or MAW:

Designate a Wing TD Compliance Program Manager to:

- a. Coordinate with the ACC Class Desks to assign Fleet activities to accomplish TD verifications.
- b. Track TD compliance and assist activities to resolve logistics constraints.
- c. Coordinate with ACCs, I-level activities, D-level activities, and Supply to obtain and prioritize support for O-level TD compliance.
- d. Coordinate with ACC Class Desks on planning compliance date or event for TDs with TYCOM directed compliance, and provide subordinate commands with information on the estimated compliance date or event for assigned BUNOs.

10.10.4.5 Commanding Officer (CO):

- a. Review and act as final approval or disapproval authority for one-time Routine Action TD compliance deviations meeting the requirements of [paragraph 10.10.3.3](#).
- b. Review and approve the release of requests for TD compliance deferral per [paragraph 10.10.3.3](#).

10.10.4.6 Maintenance Officer (MO):

- a. Designate the Maintenance Material Control Officer (MMCO) or Production Control Officer as the TD Compliance Program Manager (TDPM). Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing.

NOTE: I-level activities operating satellite Production Controls and Logs and Records in Divisions (such as Power Plants and SE) will designate the cognizant Division Officer as Technical Directives Program Coordinator (TDPC) for TDs affecting the assets for which they are responsible.

- b. Develop local command procedure (LCPs) per [Appendix D](#), if required to specify TD compliance procedures not addressed in this NAMPSOP. O-level LCPs must be forwarded to the Type Wing or MAW for consideration of publishing a Wing LCP.

10.10.4.7 TD Compliance Program Manager (MMCO or Production Control Officer):

- a. Perform an assessment of the TD Compliance Program within 30 days of designation as Program Manager, and annually thereafter per [paragraph 10.7](#).
- b. Designate a collateral duty TDPC. The TDPC must be an E-6 or above or civilian equivalent assigned to Maintenance or Production Control. Designation will be in writing via the MMP or SME listing.

c. Publish a list of outstanding TDs, by BUNO or type equipment. The list will contain any TD requiring action by the activity's assigned maintenance level, and the due date, time, or event for compliance.

(1) Example 1: A squadron list will have the TD Number and the date, time, or event the TD is due for completion for each individual BUNO.

(2) Example-2: The I-level MMP will have the TD Number and the equipment affected (T/M/S engine, component nomenclature and P/N, etc.) and the work center responsible for compliance.

d. Review, sign, and date completed NA500C report verifications.

NOTE: The TDPM may delegate the NA500C verification review to any E-7 or above or civilian equivalent assigned to Maintenance Control or Production Control, other than the TDPC.

e. Request assistance from the Type Wing or MAW to resolve TD compliance problems.

f. Verify a QAR has determined a TD to be not applicable (NA) and has signed the TD Review Checklist ([Figure 10.10-2](#)) before a TD is documented as NA in the aircraft or equipment logbook.

g. Inform supporting Supply Departments and I-level activities of aircraft configuration changes caused by TDs, for example, requirement to purge existing stock of items requiring modification or replacement.

h. (O-level) Inform the Type Wing or MAW if parts or equipment needed to comply with a TD are not available.

i. Maintain a program file to include:

(1) POCs.

(2) Program related correspondence and message traffic, such as deviations and correspondence from Type Wing, MAW, or ACC Class Desk concerning TYCOM directed and scheduled TD incorporations.

(3) Reference or cross-reference locator sheets.

(4) Most current Computerized Self Evaluation Checklist (CSEC) assessment.

10.10.4.8 TD Compliance Program Coordinator (TDPC):

a. Complete Safe For Flight or Production Control PQS and the following CNATT courses: C-555-0059 Configuration Management for Organizational and Intermediate Activities and C-555-0053 Naval Aviation Maintenance Control Management for Optimized Organizational Maintenance Activity.

b. Initiate a WO or MAF for TDs determined to be applicable by Quality Assurance (QA) per [paragraph 10.10.3.6](#). If more than one work center is involved, initiate a separate TD WO or MAF for each work center to document their portion of the TD. The primary work center involved in compliance will be issued the TD Compliance WO or MAF and the other work centers will be issued a TD Assist WO or MAF to document compliance.

NOTES: 1. No WO or MAF is required for a TD that QA determines to be NA.

2. TDs for components with CM ALS that have S/Ns of “XXX” must be physically verified prior to determining applicability, if verification is within the activity’s level of maintenance.

- c. Provide a compliance plan to the TD Compliance Program Manager and track completion.
- d. Coordinate with Logs and Records to review and verify compliance status of applicable TDs.
- e. Review the NATEC Weekly Summary for issued TDs per [paragraph 10.10.2.3](#) for T/M/S and General Series TDs, and coordinate with the CTPL to obtain applicable TDs that have not been received.
- f. Order TD parts and kits for affected aircraft or equipment, and verify Material Control assigns a Document Date and Serial Number (DDSN). Review the status of parts or kits requisitions at least once per week. Upon receipt, verify the correct parts or kits were received and are complete, label them with the BUNO or SERNO they are for (if applicable), and control parts and kits until ready for installation.

NOTES: 1. Excess or spare parts and kits are not authorized. Activities will order only the number needed to comply with the aircraft and equipment in their custody.

2. Contact the COMNAVAIRSYSCOM (AIR-6.8.3.2) Kit Manager for assistance in resolving availability issues with whole kits and individual kit parts.

- g. Add newly issued TDs applicable to assigned aircraft or equipment to the NALCOMIS TD configuration file.
- h. Verify Maintenance or Production Control changes TD WO or MAF status to “down” as soon as the compliance time or event becomes due.
- i. (O-level) Prior to a deployment, coordinate with the Material Control Officer to either cancel TD material requisitions or make arrangements with station Supply Department to have them shipped to the deployment site. A cut-off date must be established to terminate shipment, for example, 45-60 days prior to the return of the squadron.
- j. (I-level) Issue a Supply Asset Technical Directive Review Checklist ([Figure 10.10-3](#)) when supply assets need to be screened for I-level TD compliance. If supply assets require an I-level TD:

(1) Document the S/Ns of affected components on the Supply Asset Technical Directive Review Checklist ([Figure 10.10-3](#)), and provide the checklist to Production Control.

(2) Production Control will update the TD Configuration File for those S/Ns listed.

(3) Initiate a TD MAF for each affected component using Supply job control number (JCN).

10.10.4.9 Quality Assurance (QA) Officer:

- a. Verify SME QARs or Collateral Duty Quality Assurance Representatives (CDQARs) review NATEC Weekly Summary for Issued TDs applicable to T/M/S.
- b. Verify SME QARs or CDQARs review newly-received TDs for applicability.

NOTE: If a TD is determined to be NA, to include administrative action only amendments or revisions not requiring additional maintenance, the reviewing QAR or CDQAR must annotate the Technical Directive Review Checklist ([Figure 10.10-2](#)) with a detailed description of why the TD is NA.

10.10.4.10 Central Technical Publications Librarian:

a. Upon receipt of a new TD, initiate a Technical Directive Review checklist ([Figure 10.10-2](#)) and deliver the checklist and a copy of the TD to a QAR with rating or MOS expertise in the TD. If the QAR determines the TD is applicable:

(1) Apply a control stamp at the top of all copies with the activity, copy number, location, and the date the TD was received, per NAVAIR 00-25-100, WP 013 00.

VMFA-323

COPY NUMBER 001

LOCATION 04A

(2) Create records in the Enhanced Library Management System (ELMS) program for the master copy and any additional copies located in work centers.

(3) Once the Technical Directive Review checklist ([Figure 10.10-2](#)) is completed, attach a copy to the master copy of the TD.

NOTES: 1. Immediate Action and Urgent Action TDs will be reviewed immediately upon receipt. The review of Routine Action TDs will be completed within 5 working days of receipt.

2. Squadrons transitioning to a new T/M/S aircraft (for example, P-3C to P-8A) will only create TD Routing and Tracking sheets for TDs determined to be applicable during the acceptance "BASELINE" NA500C verification. TDs determined to be NA by QA during the "BASELINE" do not require a TD Routing and Tracking sheet.

b. Issue controlled copies of Aviation Life Support System (ALSS) TDs to the ALSS work center for inclusion with the applicable technical publication.

c. Maintain copies of the Weekly Summary of Issued TDs with TDPC annotations per [paragraph 10.10.4.10](#) on file for a period of 6 months. The file of TD summaries may be in either paper or digital format.

d. Upon return of work center copies of TDs, update the ELMS program TD records per the procedures of NA 00-25-100.

NOTES: 1. Maintaining paper copies of TDs issued in electronic format is optional.

2. Copies of historical TDs (no longer on active TDRS reports) are not required to be kept on file, however the TD entry in ELMS must remain. Historical TDs will be moved to the ELMS history ("dead") file, and will not be deleted from the history. Deletion will permanently remove TD records and issue/return data from historical (dead) files.

3. If paper copies are kept, master copies must be filed in binders by T/M/S in TD number sequence, with the most current on top. Additional copies not issued to work centers must be placed in a pending file.

10.10.4.11 Supply Department:

a. Coordinate with the supported I-level activity to determine applicability of TDs to shelf stock and take action as specified in the TD.

b. Remove RFI shelf stock that requires I-level TD action, and induct into the I-level activity for compliance, using a Supply JCN.

c. Coordinate with deploying activities to determine disposition of outstanding TD requisitions. TD materials sent to deployed activities will be shipped by traceable means. TD materials that are not shipped to the deployed activity must be retained by the Supply Department until the activity returns.

10.10.4.12 Logs and Records Clerk (Navy) or Maintenance Administration (Marine Corps):

a. (I-level activities) Add applicable TDs to the NALCOMIS TD Configuration file.

b. (O-level activities) Update CM Inventory Explorer by removing non-applicable and administrative TD tasks that do not apply.

NOTE: O-level activities cannot remove AFBs or AFCs because they are written against a specific BUNO and can only be removed by the Baseline Manager, via submission of a Baseline Trouble Report (BTR).

c. Make logbook, record, and report entries specified in [paragraph 10.10.3.6](#).

NOTE: NA status will not be entered in the logbook or AESR unless verified as NA by QA and documented NA on the Technical Directive Review Checklist ([Figure 10.10-2](#)).

d. Add new AFC and AFB TDs to TDRS List 02.

e. Upon receipt and transfer of aircraft, engines, components, SE, AWSE, and ALSS.

(1) Compare TD requirements listed in the applicable Lists 02 and 04 (aircraft only), SE Custody and Maintenance History Record (OPNAV 4790/51) (SE only), component Auto Log Sets, and component cards.

(2) Notify the TD Compliance Program Coordinator of any discrepancy requiring compliance action, such as an applicable TD that was not listed or a TD recorded as NA that is applicable.

f. Download new TDRS Lists. 02 and 04 each quarter in January, April, July, and October, compare the new Lists 02 and 04 against the previous lists and update them per [Chapter 5, paragraph 5.2.1.16.1f](#). Return the updated copy of the new TDRS List 02 to COMNAVAIRSYSCOM (AIR-6.8.5.2) within 30 days of download.

g. Download a new TDRS List 04H Mailing Report each year in January. Verify the accuracy of the new List 04H and insert it into the aircraft logbook. Remove and destroy the old list.

h. In coordination with the TDPC, review the NA500C for T/M/S aircraft, TDRS NAT02, NAT04, and Weekly Summary for Issued Technical Directives. If there are discrepancies in compliance documentation, research the historical files and the TDRS REP07. If documentation is missing, notify the TDPC that TD compliance cannot be verified.

10.10.4.13 Work Center Supervisors:

a. Provide TD Compliance Program indoctrination training to personnel per [paragraph 10.1](#). Training must include TD compliance responsibilities specific to their job.

b. Be aware of all TDs affecting aircraft and equipment repaired by the work center, and validate the TD currency of equipment and components repaired or used to perform repairs.

- c. Coordinate with the TDPC to develop the TD incorporation plan.
- d. Document completion of TDs on WOs or MAFs per [paragraph 10.10.3.6](#).
- e. Track accomplishment of TDs utilizing the Outstanding Work Load report, and notify Maintenance Control or Production Control and the TDPC if a TD cannot be incorporated.

NOTE: Activities operating OOMA can use the Assembly Explorer function to review applicable TDs for specific P/Ns.

NA500C		BUNO : 159911		***BASELINE***		NAVAIR								
NA500C		NA500C Aeronautical Technical Directive Index				NAVAIR								
NA500C		TDP Signature:		TPDM Signature:		Page 1 of 1								
NA500C		Page 1 of 1		TEC/TM: AAE/A-6 Series: D		Jul 27, 2015 at 1:27:46 PM								
EA-6B														
EA-6B - AIRFRAME CHANGE														
Status	TD Cd	Basic	I	R	A	Pt	Subject	Pri	ML	TCD	Iss Date	WT-BAL	WUC	NOTES
NA	50	0594		A			ACFT LOWER LONGERON ENHANCEMENT	R	3	12/16	09/94		1111490	NA to BUNO
NA	50	0594		A	1		LOWER LONGERON ENHANCEMENT	R	3	12/16	10/98		1111490	Administrative Change
NA	50	0594		A	2		ACFT LOWER LONGERON ENHANCEMENT	R	3	12/16	11/08		1111490	Administrative Change
NA	50	0594		A	3		STRUCTURES, LOWER LONGERON; ENHANCEMENT OF	R	3	12/16	04/11		1111490	Administrative Change
INC	50	0837				04	EA-6B ICAP III BLOCK 4, INSTALL	R	3	12/17	06/10	Y	76000	
INC	50	0844		A			Digital Flight Control System; Installation of	R	3	12/16	04/11	Y	573W0	
NINC	50	0849		A			AN/ALQ-100/126 SHELF ASSEMBLY, REPL OF	R	3	12/16	06/09	Y	11112A0	Due Next PMI Aug 2017
NINC	50	0852					PRECIPITATION STATIC, MITIGATION OF	R	1	12/17	07/10		11000	Due Phase A, MCN 3W025
INC	50	0854					USQ-113(V)4, PROVISIONS FOR	R	1	12/16	11/08	Y	76AF0	
NA	50	0854			1		USQ-113(V)4, PROVISIONS FOR	R	1	12/16	02/09		76AF0	Administrative Change
NA	50	0854			2		USQ-113(V)4, PROVISIONS FOR	R	3	12/16	11/09		76AF0	Administrative Change

Figure 10.10-1: Baseline Deckplate TDRS Report (Sample)

TECHNICAL DIRECTIVE REVIEW CHECKLIST

TD Number and Subject: _____

Date Issued (DTG/Date on Message/Letter): _____

1. CTPL Librarian:

- a. Stamp and Date original TD, and file as the master.
- b. Stamp and date a copy, and route to QA for review.

CTPL Certification: Signature _____

2. QA Review:

- a. TD DOES NOT APPLY. (Notify TDPC and return checklist to CTPL).
- b. Reason TD does not apply _____
- c. TD applies to the following Aircraft/Equipment in custody:
 - Aircraft/Equipment T/M/S: _____
 - BUNOs/SERNOs: _____
- d. Level of Maintenance: O/ I/ D (Circle)
- e. Compliance due no later than: _____
- f. Comply Subsequent to or Concurrent with (refer to "TD Application" section of the TD):

g. Additional information: _____

QAR/CDQAR Certification:

Date _____

Name _____

Signature _____

3. TD Compliance Program Coordinator:

- a. For OOMA: Verify the TD Configuration file has been updated by the T/M/S Baseline Manager. If the baseline has not been updated, direct the System Administrator to submit Baseline Trouble Report (BTR). Attach the task to the CM Module then initiate Work Orders.

Figure 10.10-2 (page 1): Technical Directive Review Checklist (Example)

- b. For OIMA: Enter the TD information into the TD Configuration file to establish the baseline, and initiate MAFs.
- c. Order parts and kits.
- d. I-level only: Submit Supply Asset Technical Directive Review Checklist (Figure 10.10-3).

TD Compliance Program Coordinator Certification:

Date _____

Name _____

Signature _____

5. Maintenance Control/Production Control:

- a. Review the incorporation plan with the TDPC and verify WOs/MAFs have been issued.
- b. Notify affected Work Center Supervisors and direct actions for incorporation.

Maintenance/Production Control Certification

Date _____

Name _____

Signature _____

6. TD Compliance Program Manager:

- a. Update the list of outstanding TDs in the MMP.
 - b. (Squadron) Screen for Weight and Balance affects.
-

7. Logs & Records Clerk/Maintenance Administration (USMC)

Add applicable TDs to the corresponding MSR, ASR, SRC, or EHR Cards and SE Custody and Maintenance History Record with appropriate status, for example "NINC" (until incorporated).

Logs and Records Certification:

Signature _____

Figure 10.10-2 (page 2): Technical Directive Review Checklist (Example)

Date:

From: (I-level activity) Technical Directive Compliance Program Manager
To: (NAS/MALS/CVN/L-Class) Supply Department

Subj: SUPPLY ASSET TECHNICAL DIRECTIVE REVIEW

1. The following TD applies to items stocked by the Supply Department. Any RFI assets requiring the TD must be inducted for incorporation.

a. TD Number: _____

b. Purpose: _____

c. Applies to: Part Number: _____

NIIN: _____

2. Point of contact for any questions is PR1 B. Gulley, 800 Division Production Control, 2-1111.

Signature: _____ Date: _____

Date:

From: (NAS/MALS/CVN/L-Class) Supply Department
To: (I-level activity) Technical Directive Compliance Program Manager

Subj: SUPPLY ASSET TECHNICAL DIRECTIVE REVIEW

1. The following stock assets require the TD and will be inducted for incorporation:

SERNO _____ SERNO _____ SERNO _____

SERNO _____ SERNO _____ SERNO _____

SERNO _____ SERNO _____ SERNO _____

2. Point of contact for any questions is AE2 J. Socha, Supply Supervisor, 2-2222.

Signature: _____ Date: _____

Figure 10.10-3: Supply Asset Technical Directive Review Checklist

10.11 Foreign Object Damage (FOD) Prevention Program

10.11.1 Reference

OPNAVINST 3750.6, Naval Aviation Safety Management System.

10.11.2 Introduction

10.11.2.1 The FOD Prevention Program directs actions to identify, eliminate, and report the causes of FOD. FOD presents a risk to aircraft, equipment and personnel, wastes maintenance man-hours and reduces operational readiness. Preventing FOD is a command wide effort and must be supported by individuals involved with naval aviation, regardless of their duty assignment.

10.11.2.2 Potential FOD is a condition where a foreign object is in a position to cause damage when a product or system is used. FOD can be attributed to poor housekeeping, improper maintenance practices, or carelessness, to include:

- a. Tools, aircraft hardware, rags, and other foreign objects left near, or in the migratory path of engine inlets, or in flight control areas (cockpit and other areas where flight control rods or actuators move).
- b. Tools, hardware, or debris left near, or in aircraft operating areas, such as runways, ramps, taxiways, engine test cells, and hush houses.
- c. Tools, hardware, or debris left near, or in the migratory path of the steering system for self-propelled support equipment (SE).
- d. Metal or wire clippings, solder balls, and other debris left near, or in electrical terminals, circuitry, connectors, or components.

10.11.2.3 Primary actions for reducing FOD are:

- a. Strict accounting of tools, equipment and materials used in performing maintenance tasks.
- b. Thorough post maintenance cleaning and inspection of work performed and work areas.
- c. Pre-operational inspections of engine inlets and flight control areas.
- d. Periodic FOD Walk Downs to collect debris.

10.11.3 Requirements

10.11.3.1 General Requirements

All Navy and Marine Corps activities, commercial and other government activities operating naval aircraft, directly supporting flight operations, or repairing or maintaining aircraft, engines, components, or SE must comply with the FOD Prevention Program.

- a. Activities operating naval aircraft or conducting aircraft, engine, or SE maintenance must have a FOD Prevention and Investigation Team. The team will consist of the FOD Prevention Program Manager, Quality Assurance (QA) FOD Program Monitor, Power Plant Supervisor, and a Safety Department Representative. Air capable ships and air stations will have a FOD Prevention and

Investigation Team that includes at least one person from each ship or station department that works in areas where aircraft operate or are maintained.

b. Activities operating aircraft must inspect assigned hangar and flight line or flight deck areas prior to the first flight of the day and throughout the day, as needed, to sustain a FOD free operating environment.

c. I-level and D-level activities that repair aircraft engines must inspect engine repair areas and engine test facilities for potential sources of FOD at the beginning of each shift.

(1) I-level activities must perform a Quality Assurance Representative (QAR) or Collateral Duty Inspector (CDI) inspection for potential sources of FOD in engines, modules, components, and SE prior to certifying Ready For Issue (RFI).

(2) D-level activities must perform a QA FOD inspection of aircraft, engines, modules, components, and SE prior to certifying RFI.

d. Aviation capable ships must inspect the flight deck and hangar bays for potential sources of FOD prior to commencement of flight operations and periodically throughout the day to sustain a FOD free flight deck and hangar bays.

e. Air stations and other commands supporting shore based aircraft operations must inspect runways and taxiways for potential sources of FOD prior to opening the airfield for take offs or landings.

f. Aircraft that have not flown for 30 days or more must be inspected for potential sources of FOD by a QAR or CDQAR personnel prior to releasing aircraft Safe for Flight. The inspection must be documented on a work order (WO).

g. Aircraft compartments and migratory routes must be inspected for potential sources of FOD by QAR or CDI personnel prior to closure. FOD free certification is voided if additional maintenance is performed in the area after the QAR or CDI inspection.

NOTE: Inaccessible areas that contain foreign objects that cannot be removed will be noted by an entry in the Miscellaneous History Section of the logbook or auto log-set (ALS).

h. Tools, equipment, hardware, parts and other materials must be inspected, inventoried, and accounted for prior to, during, and after maintenance completion.

NOTES: 1. Missing fasteners on aircraft, engines, SE, and other equipment used for aviation maintenance and support must be marked and documented on a WO or MAF.

2. Loose fasteners that present a FOD hazard must be removed and replaced per T/M/S maintenance technical manuals. Loose fasteners determined by QA not to be a FOD hazard must be marked and documented on a WO or MAF.

i. Work spaces will be kept free of debris to minimize the risk of foreign objects migrating to areas where aircraft or engines are operated.

j. Training Requirements

(1) Indoctrination training on the FOD Prevention Program will be given to all newly reporting personnel, and refresher training will be given to all personnel at least once per year, per the Aviation Maintenance In-Service Training NAMPSOP [paragraph 10.1](#).

(2) FOD Prevention Program training will be conducted using a standardized FOD training syllabus. The syllabus must include:

- (a) Types of FOD, how and where FOD occurs, and consequences of FOD.
- (b) Identification of FOD prone areas specific to the types of aircraft, engines, and equipment operated/supported.
- (c) Identification of FOD hazards specific to the command's operational and maintenance environment.
- (d) FOD prevention methods, with emphasis on the individual's specific job assignment.

NOTE: FOD prevention training must be included in the training syllabus of personnel that operate motor vehicles or self-propelled SE on the flight line or flight deck.

10.11.3.2 Engine FOD Incident Investigation and Reporting

a. Engine FOD Incident Reports ([Figure 10.11-1](#)) are used to notify Wing, Aircraft Controlling Custodian (ACC), and In-Service Support Center (ISSC) staff of major engine damage caused by foreign objects. The intent of these reports is to determine if changes to aircraft or equipment configuration or maintenance procedures are required to minimize the potential for FOD.

b. Engine FOD is defined as damage caused by ingestion of objects not organic to the engine (including FOD due to natural causes, such as birds or ice) while operating in an aircraft or on a test cell or stand.

NOTES: 1. Damage caused by failure of internal engine components is not FOD. Internal engine failures must be documented in NALCOMIS per [chapter 15](#) procedures. If flight safety is involved, the internal failure must be reported via Hazardous Material Report (HMR) per [chapter 10](#) procedures. A mishap report may also be required per OPNAVINST 3750.6.

2. Minor roughness or erosion of blades/vanes within serviceable limits are not FOD.

c. Engine FOD is categorized as reportable and non-reportable:

(1) Reportable engine FOD requires removal of the engine or an engine module, or replacement of an engine fan blade, or turbine.

(2) Non-reportable engine FOD does not require engine or module removal, or replacement of any engine fan blade, or turbine.

d. The FOD Prevention and Investigation Team must investigate all incidents of engine FOD, regardless of reportable or non-reportable categorization. Procedures:

(1) If determined to be reportable FOD, submit an Engine FOD Incident Report ([Figure 10.11-1](#)) by naval message within 5 working days of discovery. Submit Supplemental Engine FOD Incident Reports whenever additional information becomes available after the initial Engine FOD Incident Report.

NOTES: 1. If two or more engines on a multi-engine aircraft incur reportable FOD during a single incident, report all affected engines on a single Engine FOD Incident Report.

2. If warranted, submit a Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) Report (Hazardous Material Report (HMR), Product Quality Deficiency Report

(PQDR), or Technical Publications Deficiency Report (TPDR)) on material defects or technical publication deficiencies that resulted in a FOD incident.

3. An Engine FOD Incident Report does not satisfy mishap reporting requirements of OPNAVINST 3750.6. A separate mishap report may also be required.

4. A copy of the Engine FOD Incident Report must accompany each part removed and turned in for repair with FOD.

5. Reportable FOD must be documented in the Aeronautical Equipment Service Record (AESR)/Module Service Record (MSR)/ALS Miscellaneous History section of the engine or module. Entry must include extent, cause, and disposition of the engine or module FOD, job control number (JCN) of the WO or MAF, serial number, and date time group (DTG) of the Engine FOD Incident Report (Figure 10.11-1).

(2) If determined to be non-reportable FOD, submit a written report of the incident. The report must contain the elements required in an Engine FOD Incident Report naval message (Figure 10.11-1). The report must be signed by the Maintenance Officer (MO) and reviewed by the Commanding Officer (CO).

e. I-level and D-level repair facilities must inspect all engines/modules entering the repair or maintenance cycle for evidence of FOD. If an engine or module is found to have reportable FOD that was not documented on an Engine FOD Incident Report by the last operating activity, the repair facility must submit an initial Engine FOD Incident Report and include the last engine operating activity as an information addressee. If the last engine operating activity submitted an Engine FOD Incident Report, the repair facility must submit a Supplemental Engine FOD Incident Report that cites the actual or evident cause of the FOD, foreign objects involved, residual material recovered, location, pattern, distribution, type and extent of damage, and estimated cost to repair.

f. When FOD is a direct result of an aircraft mishap, the WO for engine or module removal will use Malfunction Description Code (MAL) 030 (mishap damage). The aircraft mishap report must state justification for assigning MAL 030, and provide details of the damage the engine or module sustained, per OPNAVINST 3750.6.

10.11.4 Responsibilities

10.11.4.1 Air Stations and Air Capable Ships Commanding Officer (COs):

a. Designate a FOD Prevention Program Manager and FOD Prevention and Investigation Team, in writing, per paragraph 10.11.3.a.

b. Review and trend FOD incidents attributed to foreign objects on flight decks, runways, and taxiways, and direct actions to correct deficiencies in FOD prevention.

c. Publish local command procedures (LCP) per Appendix D to direct specific FOD prevention procedures related to ship or airfield operations.

10.11.4.2 ACC:

a. Conduct rolling 24 month trending of the FOD rate per flight hour for each T/M/S aircraft operated, to include specifics on causal factors.

b. Coordinate with NAVAIR Program Offices to correct deficiencies in aircraft or material design or maintenance procedures considered to be causal factors to FOD.

10.11.4.3 Type Wings or Marine Aircraft Wing (MAWs):

- a. Designate a FOD Prevention Program Manager, in writing.
- b. Publish LCP per [Appendix D](#), if required to direct specific geographic, T/M/S, operational, or other FOD prevention actions not addressed in this NAMPSOP.
- c. Publish a FOD training syllabus covering the elements of [paragraph 10.11.3.1.b](#), for each T/M/S aircraft supported.
- d. Conduct rolling 24 month trending of the FOD rate per flight hour for each T/M/S aircraft supported, to include specifics on causal factors, command, and operational site of the FOD. Type Wings or MAW will:
 - (1) Provide the FOD trend to commands and ACC with recommendations for actions to reduce the potential for FOD.
 - (2) Coordinate with CO of air stations to reduce FOD incidents that occur on runways, taxiways, or other aircraft operational areas that are not the responsibility of the squadrons to maintain.
 - (3) Coordinate with the ACC T/M/S Aircraft Class Desk to correct deficiencies in aircraft/material design or maintenance procedures considered to be causal factors to FOD.

NOTE: Training Wing (TRAWING) FOD Prevention Officers serve as the point of contact (POC) on all matters pertaining to FOD, and will liaison with the local Chief of Naval Air Training (CNATRA) Detachment to verify program and contractual compliance.

10.11.4.4 Navy Carrier Air Wing (CVW), Marine Corps Air Combat Element (ACE), and Other Composite Aviation Units:

- a. Designate a FOD Prevention Program Manager to lead FOD prevention efforts while conducting composite unit training or deployed operations. Designation will be in writing.
- b. Organize and lead a FOD Prevention and Investigation Team comprised of members from each assigned aviation activity.
- c. Publish LCP per [Appendix D](#) to direct specific FOD prevention procedures related to the unit's ship/shore operational environment.
- d. Review and trend FOD incidents occurring during unit operations, and direct actions to correct deficiencies.

10.11.4.5 Maintenance Officer (MO):

- a. Designate a FOD Prevention Program Manager and a FOD Prevention and Investigation Team per [paragraph 10.11.3.a](#). Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.
- b. Publish LCP per [Appendix D](#), if required to direct geographic, T/M/S specific, or other FOD prevention procedures not addressed in this NAMPSOP or Type Wing/MAW LCP. Command LCP must be submitted to the Type Wing or MAW for review.

- c. Approve the release of aircraft restricted from flight due to potential FOD. Aircraft will be released only after the QA investigation is complete and the missing objects are determined to not be a threat to airworthiness.
- d. Promote all hands participation in FOD Walk Downs.
- e. Review FOD trend charts and FOD Program audits, and direct actions to correct deficiencies.

10.11.4.6 FOD Prevention Program Manager:

- a. Perform an assessment within 30 days of designation as Program Manager and annually thereafter, per [paragraph 10.7](#).
- b. Use the Type Wing or MAW training syllabus to provide indoctrination and annual refresher training for all command personnel, regardless of their rate. Provide feedback to the Type Wing or MAW on areas deemed deficient.
- c. Coordinate actions of the FOD Prevention and Investigation Team in completing FOD investigations and reports, per [paragraph 10.11.3.2](#).
- d. Conduct spot checks of FOD prone areas, such as parking ramps, engine turn-up areas, work spaces, test cells, hangar bays, runway, or flight deck, or taxiway, catwalks, and SE for evidence of compliance with FOD prevention practices.
- e. Serve as POC to the Air Station or Ship FOD Prevention Officer for coordinating unit participation in Ship or Station FOD walk downs.
- f. Assist QA in determining the source of foreign objects found during FOD Walk Downs, and coordinate actions to correct the sources of foreign objects.
- g. Monitor participation in FOD walk downs and inform the MO of lack of participation by any department.
- h. Maintain a program file to include:
 - (1) Copies of reportable and non-reportable Engine FOD Incident Reports and Supplemental Engine FOD Incident Reports (retain for two years).
 - (2) POCs.
 - (3) Program references, or cross-reference locator sheets, correspondence, messages, and lesson guides.
 - (4) Most current Computerized Self Evaluation Checklist (CSEC) assessment.

10.11.4.7 Quality Assurance (QA) Officer:

- a. Designate a QAR as the FOD Prevention Program Monitor. Designation will be in writing via the MMP or SME listing.
- b. Provide the MO with a recommendation to release or not release affected aircraft or engines for operation whenever missing objects are not found.

10.11.4.8 QA FOD Program Monitor:

- a. Perform program audits per [paragraph 10.7](#).
- b. Brief contractor and field maintenance teams on FOD Prevention Program requirements and periodically spot check work in progress to verify compliance.
- c. Document material collected during FOD Walk Downs on a locally developed FOD Walk Down Diagram ([Figure 10.11-2](#)). Documentation will include:
 - (1) Location found (flight line, flight deck, hangar bay, taxiway, on or under aircraft, on or under SE, work space, etc.).
 - (2) Type (screw, bolt, nut, safety wire, electrical wire, tool, rag, etc.).
 - (3) Number of each type of item collected.
 - (4) Probable source (poor maintenance practices, failure to perform post-maintenance inspection, deteriorating facility, detached from aircraft, broken or worn equipment, etc.).

NOTE: Collected foreign objects will be retained for five calendar days or until investigation of the source is complete, whichever occurs first.

- d. Conduct rolling 90 day trending of foreign objects collected during FOD Walk Downs. The trend data must contain the total number of all objects collected by category.
- e. Periodically, conduct spot checks of workspaces and work in progress for compliance with FOD prevention practices.
- f. Maintain a database of missing fasteners to include the following: aircraft BUNO and MODEX (or equipment serial number), location of the missing fastener, and WO MCN and JCN. For example: BUNO 165161, MODEX 001, panel 12L, MCN L7Q7N7Q, and JCN QL0286001. Whenever a trend is noted, for example, recurring missing fasteners on a particular panel, investigate the cause and provide corrective action recommendations to the Program Manager.

10.11.4.9 Maintenance Control:

- a. Direct Maintenance Department personnel to participate in FOD walk downs.
- b. Issue a downing discrepancy WO against affected aircraft whenever missing objects are determined to be a potential threat to airworthiness.
- c. Issue a downing discrepancy "FOD Free" Inspection WO for aircraft that have not flown for 30 days or more.
- d. Verify pre-closure FOD inspections are being performed and documented on WO.

10.11.4.10 Division Officers:

- a. Periodically inspect division workspaces and work in progress to verify compliance with FOD prevention requirements.
- b. Promote participation in FOD walk downs by all members of the division.

10.11.4.11 Work Center Supervisors:

- a. Train personnel on how their job relates to the FOD Prevention Program. Document initial job-related and annual refresher training in the individual's qualification/certification record or ASM.
- b. Direct work center personnel to participate in FOD walk downs.
- c. Report FOD hazards to Maintenance Control or Production Control and FOD Prevention Program Manager.
- d. Control non-installed aircraft or engine or equipment components and hardware.

10.11.4.12 Maintenance Personnel:

- a. Immediately remove or correct FOD hazards, such as foreign debris on the flight line or flight deck or hangar deck, and loose fasteners on aircraft or equipment. If unable to correct the hazard, report it to supervisors.
- b. Control all tools, equipment, and materials used during a maintenance task.
- c. Prior to QAR or CDI inspection of a maintenance task, account for all materials used and thoroughly inspect the compartment in which maintenance was performed and in adjacent areas. Immediately notify supervisors, if anything used during the maintenance task is missing.
- d. Inspect engine ducts, plenum chambers, crevices, and cavities prior to engine start.
- e. Perform pre and post-operational inspections of SE to verify material integrity.
- f. Install doors, panels, duct covers, and other protective devices when not actively engaged in maintenance on or adjacent to gas turbine engines.
- g. Submit a WO or MAF to document missing or loose fasteners on aircraft and SE.
- h. Inspect personal equipment for missing or loose parts prior to entering and after leaving the flight line or flight deck.

FM ORIGINATOR

TO AIRCRAFT CONTROLLING CUSTODIAN
TYPE WING or MAG
CVW (If assigned.)

INFO COMNAVAIRFOR SAN DIEGO CA//N42/N421//
COMNAVSAIRSYS COM PATUXENT RIVER MD//AIR-6.6.5//
COMNAVSAFECEN NORFOLK VA//12//
CTF/CSG/FMF/MEU
COMFAIRFWD ATSUGI JA//N42// (If deployed in WESTPAC.)
SHIP/NAS/MCAS (Where the FOD occurred.)
SURFPAC SAN DIEGO CA//N42// or SURFLANT NORFOLK VA//N42// (If FOD occurred onboard a ship)
SUPPORTING INTERMEDIATE MAINTENANCE ACTIVITY
DEPOT REPAIR POINT

BT

UNCLAS//N04790//

MSGID/GENADMIN/-//

SUBJ/(COMMAND) ENGINE FOD INCIDENT REPORT SERIAL NUMBER (Sequential number within each calendar year, followed by the last two digits of the calendar year. Use sequential numbering regardless of whether this is an initial or supplemental report.) EXAMPLE: "VFA-123 ENGINE FOD INCIDENT REPORT SERIAL NUMBER 03-16"//

REF/A/DOC/COMNAVAIRFORINST 4790.2C

AMPN/REF A IS THE NAMP.//

POC/NAME/RANK/CODE/PHONE/EMAIL (POC will be the Senior Member of the FOD Investigation Team)//

RMKS/1. SUMMARY (Summarize the contents of the report in 2 lines or less.)

2. DATA:

A. AIRCRAFT

(1) TYPE/MODEL/SERIES ("N/A" if FOD occurred on a test cell.)

(2) BUREAU NUMBER ("N/A" if FOD occurred on a test cell.)

B. ENGINE(S)

(1) TYPE/MODEL/SERIES

(2) SERIAL NUMBER(S)/PSSN(S)(If applicable.)

(3) INSTALLED POSITION(S) AT THE TIME OF FOD ("Test Cell" if FOD occurred on a test cell.)

C. JULIAN DATE(S)/TYPE OF LAST MAINTENANCE

(1) ON AIRCRAFT ("N/A" if FOD occurred on a test cell.)

(2) ON ENGINE(S)/MODULE(S)

D. LOCATION OF ENGINE(S) AT TIME OF FOD (Example: "MCAS MIRAMAR", "NAS OCEANA", "CVN-72", "FRCSE JACKSONVILLE TEST CELL".)

E. EMPLOYMENT OF UNIT AT TIME OF FOD (Example: "FLEETEX", "WEAPONS DET", "I-LEVEL REPAIR ACTIVITY".)

F. JULIAN DATE FOD DISCOVERED

(1) WHERE DISCOVERED (Example: FLIGHT LINE, FLIGHT DECK, WORK CENTER 41U)

(2) HOW DISCOVERED (Example: DAILY, TURNAROUND, PRE-INDUCTION INSPECTION)

G. DISPOSITION OF ENGINE(S)/MODULE(S)(Example: "BLENDING", "I-LEVEL TURN IN", "RETURN TO DEPOT".)(If turned in, list the receiving activity.)

H. PREVIOUS ACTIVITY OPERATING ENGINE(S)/MODULE(S). (State only if a factor, for example: "FOD DISCOVERED UPON RECEIPT FROM VFA-XXX".)

I. OTHER REFERENCE(S) TO SAME FOD INCIDENT

(1) ETR SERIAL NUMBER(S)(Ensure the Engine FOD Incident Report Serial Number is included in Remarks Section of the original ETR, listing Reason for Removal Code 5C OR 5D. NOTE: Reason for Removal Code 3Q will not be used for engines damaged by ingestion of foreign objects.)

(2) JCN(S) (Ensure the Engine FOD Incident Report Serial Number is included in the Discrepancy Field of the Turn-in Work Order.)

(3) OTHER APPLICABLE MSG DTG (List each separately)

Figure 10.11-1 (page 1): Engine FOD Incident Report Format

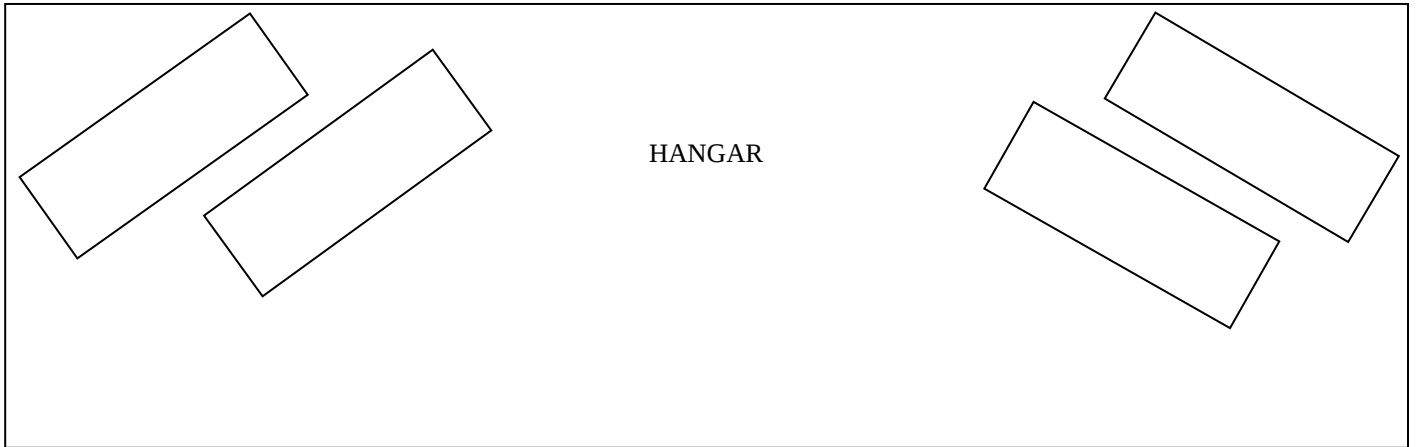
3. COST DATA
 - A. ENGINE(S) REPAIR COST (Based on current NAVSAFECEN Reportable Engine Repair Cost)
 - B. AIRCRAFT DAMAGE COST (Based on P&E Report, if beyond O/I-level to repair.)
 - C. TOTAL INJURY COST (Refer to APPENDIX 4B OF OPNAVINST 3750.6)
 - D. OTHER PROPERTY DAMAGE COST
 - E. TOTAL COST (Total of A, B, C, AND D above)
4. INVESTIGATION
 - A. WHEN FOD OCCURRED (Example: "IN FLIGHT" or "DURING GROUND TURN").
 - B. CAUSAL FACTORS (Describe what caused the FOD, for example, "FASTENER FROM PANEL 4L CAME OUT DURING GROUND ENGINE RUN", "TOOL LEFT IN INTAKE")
 - C. ACTUAL FOREIGN OBJECT INGESTED (NSN and Part Number. If not known, use "UNKNOWN")
 - D. SUSPECTED FOREIGN OBJECT INGESTED (Use "N/A" if actual object is reported in 4.c.)
5. DATE/SERIAL NUMBER OF LAST FOD INCIDENT MESSAGE
6. CORRECTIVE ACTION
 - A. CORRECTIVE ACTION TAKEN TO PREVENT RECURRENCE
 - B. RECOMMENDED CORRECTIVE ACTION (If corrective action is beyond the capability of the originator to implement.)
7. COMMANDING OFFICER'S COMMENTS//

Figure 10.11-1 (page 2): Engine FOD Incident Report Format

FOD Walk Down

Date _____ Time _____

FLIGHT LINE



<u>Category</u>	<u>Number Found</u>	<u>Comments</u>
1. Aircraft hardware (nut, screw, bolt, washer, etc.)	_____	_____
2. Maintenance debris (safety wire, rags, etc.)	_____	_____
3. Non-aircraft hardware (SE bolt, etc.)	_____	_____
4. Facility debris (ceiling/roof material, etc.)	_____	_____
5. Environmental (rocks, tree limbs, etc.)	_____	_____
6. Personal Trash (soda cans, coins, etc.)	_____	_____
7. Other	_____	_____

Total: _____

Investigation: _____

Figure 10.11-2: FOD Walk Down Diagram (Example)

10.12 Tool Control Program (TCP) (NAMPSOP)

10.12.1 Reference

NAVAIR 17-1, Tool Control Manual (series)

10.12.2 Introduction

10.12.2.1 The Tool Control Program (TCP) NAMPSOP establishes minimum requirements for controlling tools used by Navy and Marine Corps O-level, I-level, D-level, and commercial activities performing maintenance on naval aviation aircraft, engines, components, and equipment.

10.12.2.2 The primary objective of the TCP is the elimination of foreign object damage (FOD) to aircraft and equipment caused by misplaced tools. The basic principles of the TCP are:

- a. Standardization of tools and the configuration of tool containers.
- b. Traceability of tools through the use of unique identification numbers etched, stamped, or marked on each tool and each container.
- c. Strict accounting of tools:
 - (1) Maintaining accurate inventory lists of all tools on hand.
 - (2) Inventorying tools at the beginning and end of work shifts, and before, during, and after performing maintenance.
 - (3) Documenting who has control of the tool and what aircraft or equipment the tool was used on.
 - (4) Securing tools when not in use.
 - (5) Prompt and thorough investigation of missing tools.

10.12.2.3 The NAVAIR 17-1 Tool Control Manual (TCM) provides standardized tools and tool container configuration for most type/model/series (T/M/S) aircraft. Naval Air Warfare Center Aircraft Division (NAWCAD), Code 4.8.6.10, is the In-Service Support Center (ISSC) for T/M/S aircraft TCMs. Address:

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.8.6.10
HWY 547
LAKEHURST, NJ 08733-5091
Phone: DSN 624-7374/COMM (732) 323-7374

10.12.3 Requirements

10.12.3.1 Tool Control Manuals (TCM)

a. O-level activities must use the NAVAIR 17-1 TCM for the T/M/S aircraft they maintain. If a TCM does not exist for the T/M/S aircraft assigned, the operating activity must develop a TCM using a similar NAVAIR 17-1 T/M/S TCM as a guide and submit it to their Type Wing or MAW for approval. Once approved, the Type Wing or MAW will forward the TCM to NAWCAD per [paragraph 10.12.2.3](#) for decision on adding the TCM to NAVAIR 17-1.

b. Recommendations for changes to NAVAIR 17-1 T/M/S TCMs will be submitted by naval letter to the Type Wing or MAW (Figure 10.12-1). If the Type Wing or MAW concurs with the change, they will submit the recommendation to NAWCAD per paragraph 10.12.2.3 as a Technical Publication Deficiency Report (TPDR), per paragraph 10.9.

NOTES: 1. Activities will not make changes until NAWCAD approves the TCM change.

2. Special tools are locally manufactured tools or tools modified from their original configuration. Special tools listed in the T/M/S aircraft TCM, Interactive Electronic Technical Manual (IETM), and related Technical Manuals are authorized and do not require a deviation approval. Special tools are subject to the same tool control and inventory requirements as standard tools.

3. I-level and D-level activities will use a TCM Change Recommendation form (vice letter) similar to Figure 10.12-1. The form must include documentation of final disposition.

c. Requests to deviate from a TCM must be submitted by naval letter to the Type Wing or MAW for approval (Figure 10.12-2). Deviation from T/M/S TCM specifications will only be granted if required to support maintenance or operational requirements that are different than other activities maintaining the same T/M/S aircraft.

NOTES: 1. COMNAVAIRFOR O-level activities without an assigned Type Wing or MAW will submit TCM change requests and deviation requests to COMNAVAIRFOR Code N422.

2. COMNAVAIRSYSCOM assigned O-level activities will submit TCM change requests and deviation requests to their assigned Test Wing. Activities not assigned to a Test Wing will submit requests to COMNAVAIRSYSCOM Code AIR 5.0D43.

d. I-level and D-level activities must publish a TCM tailored to their operational needs. I-level and D-level TCMs will be formatted similar to a NAVAIR 17-1 TCM, and must include test station drawers, wall lockers used for tool or equipment storage, roll around tool containers, and portable tool containers. Tools and containers used by Depot field activities and field service teams will be specified within the command's TCM.

e. TCMs will be managed and controlled as technical data, per paragraph 10.8.

10.12.3.2 Tool Marking and Serial Numbers

a. All tools must be marked with a serial number containing the activity's organization code as listed in DECKPLATE, the work center responsible for the tool, and the number of the container the tool is assigned to, for example, AC9-110-1.

b. Depot and contractor owned tools may have unique organizational codes and numbering systems providing identification to the same level of accountability as stated above.

c. Tools will be marked by mechanical etching. Face shields, goggles, lenses, batteries, and other tools unsuitable for etching will be marked using a permanent marker or indelible ink.

WARNING: BERYLLIUM TOOLS WILL NOT BE ETCHED, CUT, MELTED, WELDED, GROUND, OR OTHERWISE MODIFIED DUE TO THE RISK OF CREATING BERYLLIUM DUST, WHICH IS A HEALTH HAZARD. TOOL CONTAINER INVENTORIES MUST IDENTIFY ANY TOOL CONTAINING BERYLLIUM ALLOYS BY ANNOTATING THE WORD "BERYLLIUM" NEXT TO THE TOOL.

d. Multiple piece tool sets with individual pieces that are removed during use, and tools with parts that are routinely replaced during use, will have each piece serialized. Examples include allen wrench sets, feeler gauge sets, stamping dye sets, and flashlights.

e. Tool tags maintained in a tool container will be etched in the same manner as the tools in the container, with the addition of a tag number. For example, tool container AC9-110-1 has two tool tags: One tool tag will be numbered AC9-110-1 (1) and the other will be numbered AC9-110-1 (2).

f. Tools that are too small to be marked must be identified per the procedures of 10.12.3.4c.

g. Markings will be restored as they become unreadable.

10.12.3.3 Tool Containers

a. O-level activities must use the exact tool container configuration directed in the NAVAIR 17-1 TCM for the T/M/S aircraft they support, with the following exceptions:

(1) Air Station Operations Departments and squadrons supporting more than one T/M/S aircraft may consolidate tool containers from each T/M/S TCM, as deemed most efficient for conducting maintenance.

(2) An approved TCM deviation per [paragraph 10.12.3.1.c](#) is required to modify tools or equipment.

b. Tool containers must be numbered with the activity's organization code, work center code, and a unique container number, for example, AC3-110-2. If the work center is authorized more than one of the same type tool container, the additional containers must be identified with a numerical suffix, for example, AC3-110-2-1.

NOTE: Depots and contractors must use a numbering system that provides identification to the same level of detail (activity identifier, shop assignment, and number).

c. Tool container hardware placement (clips, brackets, holes for tools, etc.) must be exactly as indicated in the TCM drawing.

NOTE: If a tool is not available at the time the container is constructed, the associated clips, brackets, and holes will not be installed or cut until the tool becomes available. The uninstalled tool will be recorded on the Tool Container Shortage List ([Figure 10.12-3](#)).

d. The position of each tool must be silhouetted against a contrasting background to highlight its location within the container. Silhouetting may be accomplished by use of paint, etching, or other method that does not cause a risk of FOD. Each tool location will be numbered to correspond with the tool's number on the inventory list.

e. Tool pouches must be fabricated to hold individual tools in separate positions. Each tool pouch will have a flap cover that attaches securely on all edges to prevent tools from falling out.

f. The outside of the container must be stenciled with applicable warnings, for example, "CONTAINS TOOLS TOO SMALL TO ETCH", "CONTAINS TOOLS UNSUITABLE FOR ETCHING", or "OXYGEN USE ONLY".

g. Wall boards and lockers may be used to provide rapid inventory of work equipment not specified to be in a container, for example, communications cords, electrical cords, and PPE. Items assigned to

wall boards and lockers must be silhouetted and marked per the procedures noted in [paragraph 10.12.3.3.d](#).

h. Each tool container, board and locker will have a Tool Inventory List per [paragraph 10.12.3.4](#) with the diagram specified in the TCM, and a Tool Container Shortage List ([Figure 10.12-3](#)). Lists and diagrams will be firmly attached to eliminate the possibility of FOD.

NOTE: To reduce the possibility of FOD, lists and diagrams for tool pouches and for tools used in ESD work centers will be kept in a folder separate from the tool container or tool pouch.

i. Tools, tool containers, and tool lockers will be kept FOD free and clean of contaminants such as grease, oil, hydraulic fluid, dirt, fuel, and corrosion.

j. Tool containers and lockers will not be used to store any materials or equipment not on the inventory list.

10.12.3.4 Tool Inventory Lists

a. Tool inventory lists will identify each tool by item number, nomenclature, and quantity.

b. Tools with multiple pieces will be identified on the list by annotating the number of pieces on the right hand side next to the item, for example, "Flashlight, plus 1 spare lens and 2 batteries = 4 total pieces", "Stamping dye set, 10 pieces plus 2 piece case = 12 total pieces", "Feeler Gauge with 14 blades" and "hacksaw with blade".

c. Tools too small or unsuitable to be etched or marked will be identified on the Inventory List by placing an asterisk (*) on the left hand side of the item's nomenclature, for example "*Jewel Scribe". If the item is a multiple piece tool and only some of the pieces are too small to etch, the inventory will specify each non-etched piece. For example, in a 10 piece Allen Wrench set where the 3/32 wrench is the only piece too small to etch, the nomenclature would be annotated "Allen Wrench Set, 10 pieces plus case = 11 pieces * 3/32".

d. Tools requiring hardware to be secured to prevent potential FOD (for example, the lock nut on a hex key set or pliers) will be identified on the inventory list by annotating the securing method (such as "SPOT WELDED", "PEENED", or "ADHESIVE") next to each affected item.

e. Tool Container Shortage Lists ([Figure 10.12-3](#)) will be used to document any tools missing from the container. Procedures:

(1) For tools on order:

(a) Annotate the nomenclature, drawer, panel, and item number of the tool.

(b) Annotate the number from the Missing Tool Report ([Figure 10.12-4](#)) or Broken/Worn Tool Report ([Figure 10.12-5](#)) on the tool container shortage list ([Figure 10.12-3](#)). If the tool has never been in the container, annotate "INITIAL ISSUE".

(c) Annotate the requisition document number received from the TCP Coordinator. If the tool will be purchased from SERVMART or open purchased, annotate "SERVMART or Open Purchase" and the date the TCP Coordinator plans to obtain the tool.

(d) The Work Center Tool Control Representative will initial the entry to certify the tool has been placed on order.

(e) When the tool is received, the Work Center Supervisor must personally verify the tool has been placed in the container, enter the date replaced, and initial the form.

(2) For tools in calibration:

(a) Annotate the nomenclature, drawer, panel, and item number of the tool being calibrated.

(b) The Work Center Tool Control Representative will annotate the date the tool was turned in for calibration and initial the form.

(c) When the tool is received from calibration, the Work Center Supervisor must personally verify the tool has been placed in the container, enter the date replaced, and initial the form.

10.12.3.5 Tool Security and Checkout procedures

a. Tools must be secured in the assigned container, wall board, or locker when not in use. Tools not assigned to a work center must be stored in the tool room.

b. A tool log will be used to check out portable tool containers, individual tools from the Tool Room, shop container, shop support box, tool pouches, PPE, and consumable tools (acid brushes, wire brushes, razor blades, sand paper, rags, etc.). As a minimum, tool logs must contain the following information:

(1) Name of person issued to.

(2) Assigned container, locker, or wall board number, and the inventory item number.

(3) Job control number (JCN), MAF control number (MCN), or job order number (JON) for which the tool is being used.

(4) Date and time checked out, and Supervisor or CDI Signature.

(5) Date and time checked in, and Supervisor or CDI Signature.

NOTE: Portable tool containers checked out for an entire shift will be used for performing maintenance on only one aircraft or piece of equipment at a time.

c. Tool tags will be used whenever an individual tool is checked out from a tool container. Tool tags may also be used to check out individual items of PPE or equipment. Procedures:

(1) Tools, PPE, or equipment will be issued in exchange for a tool tag on a one-for-one basis.

(2) The individual checking out the tool must provide a tool tag from a container personally assigned or checked out to them.

(3) The tool tag will be placed in the checked out item's designated location.

(4) If a tool is checked out from a container by an individual without access to a tool tag, the checkout will be logged in the Work Center Tool Control Log per [paragraph 10.12.3.6.a](#).

NOTES: 1. Tool pouches and "OXYGEN USE ONLY" containers will not have tool tags.

2. Tools from portable containers will not be checked out for simultaneous maintenance on multiple aircraft or equipment.

d. Tools issued with flight packets must be controlled and accounted for. Each flight packet will have a Controlled Equipage Custody Record (NAVSUP 306), an inventory list, and a tool diagram.

10.12.3.6 O-level and I-level Tool Inventories

a. Tool containers, wallboards, special tools, and PPE must be sight inventoried at the beginning and end of each shift by the Work Center Supervisor or Shift Supervisor. Shift inventories will be documented in a work center tool control log that lists each container and the legibly printed name and signature of the individual that performed the inventory. Work center tool control logs will be retained for a minimum of 30 days after the last entry.

b. The tool container number must be annotated in the WO or MAF tool box block upon task assignment. The supervisor or a CDI and the technician assigned to the task will jointly conduct an inventory and inspection of the tool container and its contents prior to starting work on the task and at each work stoppage.

NOTE: NTCSS Optimized OMA NALCOMIS permits personnel with a QAR, CDI, or Work Center Supervisor SMQ to correct the tool box number and initials data fields. Work Center Supervisors, QARs, and CDIs will strictly control changes to the tool box data field.

c. A wall-to-wall sight inventory of all tools, tool containers, and wall boards in work centers and the tool room must be conducted every six months (semi-annually) by the TCP Coordinator, to include a comparison of work center inventory lists to the master inventory record to verify no unauthorized additions or deletions have occurred.

10.12.3.7 D-level Tool Inventories

a. All assigned tool containers, equipment, and PPE must be inventoried and verified FOD free at the beginning and end of each shift or task.

b. Each inventory will be recorded in a log to include:

(1) Date and time inventoried or inspected.

(2) BUNOs of all aircraft and SERNOs of all equipment worked on.

(3) Legibly printed name and signature or imprint certification stamp of the individual who performed the inventory or inspection.

c. Tool control inventories will be documented when maintenance tasks are assigned, at work stoppage, prior to system check, upon job completion, or when a change of maintenance task occurs.

d. Depot Work Center Supervisors will complete and document the inventory of at least one tool container each week.

e. The Depot Tool Control Program Coordinator will conduct and document a joint inventory with each shop Tool Control Representative annually.

f. Depot artisans assigned to I-level activities will comply with the tool control inventory and documentation procedures applicable to the I-level site.

NOTE: The artisan's signing the ACCUM WORK HOURS field on the WO or MAF is certifying that he or she personally completed the tool inventory.

10.12.3.8 Broken/Worn Tool Procedures

- a. Broken or worn tools will be removed from service and replaced as soon as discovered.
- b. All broken or worn tools will be given to the activity's Tool Control Coordinator along with a Broken/Worn Tool Report (Figure 10.12-5).
- c. Replacement tools will not be issued without a completed Broken/Worn Tool Report (Figure 10.12-5).

NOTE: A tool with missing pieces must be investigated as a missing tool per paragraph 10.12.3.9.

- d. If a replacement tool is not immediately provided, an entry will be made on the applicable Tool Container Shortage List (Figure 10.12-3).
- e. All unserviceable tools will be sent to the local Defense Logistics Agency Disposition Services (DLADS) center. If there is no local DLADS, unserviceable tools will be sent to the servicing Supply Department for disposal. Receipts will be kept on file for one year.

10.12.3.9 O-level and I-level Missing Tool Procedures

- a. Technicians will immediately stop work and notify their Work Center Supervisor as soon as they discover a tool is missing.
- b. Work Center Supervisor actions:
 - (1) Immediately notify Maintenance or Production Control that a tool is missing and provide information on any aircraft, engines, or equipment that may be affected.
 - (2) Personally coordinate a thorough search of the work area.
 - (3) Initiate a Missing Tool Report (Figure 10.12-4) if the tool is not found during the initial search.
- c. Maintenance or Production Control actions:
 - (1) Verbally notify the Maintenance Officer (MO), Assistant Maintenance Officer (AMO), Maintenance Material Control Officer (MMCO), and Quality Assurance (QA) that a tool is missing. If embarked, also notify the CVW MO or Air Combat Element MO and Flight Deck Control.
 - (2) Quarantine affected aircraft, engines, equipment, and components, and initiate a downing WO or MAF with the discrepancy "Potential FOD from missing (tool nomenclature and serial number)". I-level will flag the work center status board and stop production for the job involved.
 - (3) (I-level) Notify ASD/S6 Division if any engine, equipment, or component with potential to have the missing tool was returned to Supply for issue. If a suspect item was issued, notify the receiving activity that the item is NRFI due to potential FOD and must be turned in with a work request for FOD check. The I-level QAR or CDI that inspects the suspect item will complete the work request with the remark "CERTIFIED FOD FREE".

(4) Fill in the Maintenance or Production Control section of the Missing Tool Report and forward it to QA.

d. QA actions:

(1) Immediately assign a QAR to investigate the missing tool. The investigator will personally conduct a search for the tool. Whether or not the tool is found, the investigator must fill in the details on the Missing Tool Report and brief the QA Officer.

(2) The QAR that conducted the investigation will complete the WO or MAF that downed the aircraft, engine, or equipment for potential FOD. If the tool was found during the QA investigation the corrective action block will read "Missing tool investigation completed. Tool found." If the tool was not found, the corrective action block will read "Missing tool investigation completed. Tool not found."

(3) If the tool was not found, the QA Officer will take the Missing Tool Report to the MO and provide a recommendation for the affected aircraft, engine, equipment, or component.

e. MO actions:

(1) Release aircraft, engines and equipment for flight or operation only after a thorough investigation is completed, and only if satisfied the tool does not present a FOD hazard.

(2) Brief the CO on missing tool incidents.

NOTE: The AMO will assume MO responsibilities for missing tools if the MO is not available.

f. If tools are discovered missing during flight or while operating away from home base, the aircrew must:

(1) Notify the pilot in command and conduct a thorough search of the aircraft. If the tool is not found, the flight engineer, crew chief, or senior maintenance technician (in the absence of an assigned crew chief) must initiate a Missing Tool Report ([Figure 10.12-4](#)). The senior maintenance technician will act as Work Center Supervisor, Maintenance Control, and QA investigator; and the pilot in command will act as the Maintenance Officer.

(2) If not airborne, the aircraft will be grounded until completion of the missing tool investigation. The pilot in command will not release the aircraft for flight until the investigation is completed, and only if satisfied the tool does not present a FOD hazard.

(3) Upon return to home station, the aircrew will give the completed Missing Tool Report to Maintenance Control.

10.12.3.10 D-level missing tool procedures

a. The artisan discovering a tool is missing must immediately stop work and notify their Supervisor.

b. All work activity in the affected area of the aircraft or system must cease and a search for the item will begin immediately.

c. If the tool is not located after completing the search, the artisan must prepare and submit a written report to their immediate Supervisor. A locally prepared form will be used for the report. At a minimum, the report must include the date and time the tool was discovered to be missing, the BUNOs of aircraft and SERNOs of equipment the tool was used on, BUNOs/SERNOs searched, the date and time the search

was completed, the names and codes of key personnel notified or who participated in the search, whether the tool was found or not found, and whether logbook entries were made (if required).

d. The Supervisor must:

- (1) Immediately notify production personnel.
- (2) Identify those areas where work was or may have been performed.
- (3) Stop work in affected areas and supervise a thorough search for the missing tool.
- (4) After completion of the search and before any open areas are closed, advise their Manager or Supervisor and Quality Verification Personnel of whether or not the missing tool was found.
- (5) Forward copies of the Missing Tool Report as required by local directives.
- (6) If the missing tool is not found during the same shift it was discovered missing, inform the oncoming Shift Supervisors of actions taken to locate the tool.

10.12.3.11 Special Procedures for Aviation Life Support Systems (ALSS)

- a. ALSS tools will be kept clean and free of oil and grease at all times.
- b. ALSS tools used on oxygen components must be segregated in a separate container marked "OXYGEN USE ONLY."
- c. ALSS long bars and paracord stitching fids will not be etched due to potential to snag canopy material.
- d. Tools used on ALSS that cannot be functionally checked prior to use, such as parachutes and floatation equipment, must be accounted for after the repack or inspection of each item. The QAR or CDI signing the WO or MAF "Inspected By" block is certifying all tools were accounted for.

10.12.4 Responsibilities

10.12.4.1 Type Wing or MAW:

- a. Research TCM change recommendations and submit valid recommendations to NAWCAD Lakehurst, NJ per [paragraph 10.12.3.1.b](#).
- b. Formally respond to squadron TCM deviation requests [per paragraph 10.12.3.1c.](#), and submit a TCM change recommendation per [paragraph 10.12.3.1.b](#) for deviations with fleet-wide applicability.

NOTE: Type Wings and MAWs may designate a non-deploying squadron as T/M/S TCM Model Manager, with authority to approve or disapprove TCM change recommendations and deviation requests.

10.12.4.2 Maintenance Officer (MO):

- a. Develop local command procedures per [Appendix D](#), if required, to direct geographic, T/M/S, or command actions for the Tool Control Program that are not addressed in this NAMPSOP. Command LCPs will be submitted to the Wing or MAW for consideration of developing a Wing LCP.

b. Designate the Material Control Officer as the TCP Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

NOTE: The MMCO or Production Control Officer will be assigned as the TCP Manager if a Material Control Officer is not assigned.

c. Establish a Tool Room or Tool Control Center to manage tools not issued to work centers.

d. (O-level) Review TCM change recommendations and deviation requests prior to submission to the Wing or MAW.

e. Strictly adhere to the procedures for releasing aircraft or equipment for flight or operation when tools are missing per [paragraph 10.12.3.9](#).

f. Coordinate with the NATOPS Officer to train aircrew personnel in TCP procedures.

10.12.4.3 Tool Control Program Manager:

a. Perform a Program Manager assessment within 30 days of designation as the Program Manager and annually thereafter per [paragraph 10.7](#).

b. Designate a Tool Control Program Coordinator (normally the Tool Room Supervisor) to assist with managing the TCP. Designation will be in writing via the MMP or SME listing.

c. Plan and budget funds for the procurement of tool containers and hand tools.

d. Review SERVMART, Open Purchase, and supply system requisitions for purchasing tools, and verify only authorized tools and quantities are being ordered, and review lists at the completion of shopping to verify only authorized tools and quantities were purchased.

e. (O-level) Review TCM change recommendations and deviation requests prior to submission to the MO.

f. I-level and D-level TCP Managers:

(1) Publish a TCM per [paragraph 10.12.3.1.d](#).

(2) Be the approving authority for TCM Change Recommendations ([Figure 10.12-1](#)).

10.12.4.4 Tool Control Program Coordinator:

a. Supervise the operations of tool rooms and tool control centers.

b. Maintain an accurate inventory list of all replacement tools on hand or on order. Requirements:

(1) The inventory list must include the NSN/PN, nomenclature, and current quantity on hand for each authorized replacement tool.

(2) Tools unsuitable to be etched and tools with multiple pieces will be identified as such on the inventory.

(3) The missing tool or broken/worn tool report number, tool container number, requisition number, and current status must be annotated for all replacement tools on order.

(4) The inventory must be updated upon receipt and issuance of replacement tools.

(5) Tools must be removed from packaging and etched or marked with the activity ORG code as soon as received.

c. Prior to issue, peen or spot weld tool hardware that can come loose (for example, the lock nut on a hex key set or pliers) to eliminate the possibility of FOD. Industrial adhesive will be used when peening or spot welding would cause damage or affect calibration.

d. Prior to issue, mark replacement tools with the complete identification number (ORG code, work center, and tool container number).

NOTE: A completed Missing Tool Report (Figure 10.12-4), Broken/Worn Tool Report (Figure 10.12-5) is required before issuing a replacement tool.

e. Issue tool containers by number to the Work Center Supervisor. Tool containers must be issued on a Controlled Equipage Custody Record (NAVSUP 306), one container per record. Work Center Supervisors will sign the front page of the Controlled Equipage Custody Record (NAVSUP 306) to acknowledge receipt.

f. (O-level and I-level) Conduct semi-annual tool container inventories with each Work Center Tool Control Representative per paragraph 10.12.3.6c. Completion of the semi-annual inventory will be documented by signing the back page of the Controlled Equipage Custody Record (NAVSUP Form 306).

g. (D-level) Conduct and document annual tool container inventories with shop Tool Control Representatives per paragraph 10.12.3.7.e.

h. Submit SERVMART, Open Purchase, and supply system requisitions to the TCP Manager for approval prior to placing tools on order, and for review after receipt.

i. (O-level and I-level) Review and update the status of outstanding tool requisitions each week.

j. Dispose of broken/worn tools per the procedures of paragraph 10.12.3.8.e. Prior to disposal, broken/worn tools will be segregated from RFI tools by placing them in a locked container clearly marked "NRFI TOOLS".

k. Review work center TCM change and deviation requests, and prepare the final request for submission to the TCP Manager.

l. Provide TCP NAMP indoctrination training per paragraph 10.1.

m. Maintain a program file to include:

(1) Completed Missing Tool Reports (Figure 10.12-4) and Broken/Worn Tool Reports (Figure 10.12-5). Reports will be kept on file for a minimum of one year.

(2) List of primary and alternate Tool Control Representatives.

(3) Outstanding and completed change and deviation requests as long as they are in effect.

(4) The master copy of each individual tool container inventory, layout photograph or diagram, and copy of Controlled Equipage Custody Record (NAVSUP 306). One master copy may be maintained for multiple identical tool containers used by the same work center.

- (5) The master copy of the TCM.
- (6) Current Aviation Maintenance Advisories (AMA) for the TCP.
- (7) Copy of the most current Program Manager assessment and QA Audit.

10.12.4.5 QA Officer:

Designate a QAR as the TCP Monitor. Designation will be in writing via the MMP or SME listing.

10.12.4.6 QA TCP Monitor:

- a. Perform audits per the procedures of [paragraph 10.7](#).
- b. Coordinate QA actions for missing tool investigations per [paragraph 10.12.3.9](#).
- c. Maintain a log and assign a report number to each missing tool and broken/worn tool report. A sequential numbering system will be used, consisting of the year, type of report, and serial number, for example, 16-M001 (M = missing), 16-B002 (B = broken), or 16-W003 (W = worn). The logbook must contain the following information: report number, calendar date initiated, work center, tool nomenclature, serial number, BUNO/Serial Number of last aircraft/equipment the tool was used on, investigator assigned, and whether or not the tool was found. The log may be in paper or electronic format.
- d. Report defective or poor quality tools per [paragraph 10.9](#).
- e. Brief assisting contractor and depot field maintenance teams on tool control and FOD prevention procedures upon initial arrival at the job site. Inspect and inventory all field team tools, equipment, PPE, and consumables prior to the field team initially beginning work and at the completion of the job. The in-brief, initial inventory, and final inventory will be documented on a Contractor/Field Maintenance Team Brief ([Figure 10.12-6](#)).
- f. Randomly monitor work center tool containers and work in progress to verify compliance with the TCP.

10.12.4.7 Division Officer:

- a. Review TCM change requests and deviation requests prior to forwarding to the TCP Manager.
- b. Inspect tools and related documentation during work center audits to verify compliance with TCP procedures.
- c. Review missing tool incidents and the results of TCP audits and direct remedial training, if warranted.

10.12.4.8 Work Center Supervisor:

- a. Sign for custody of work center tools per [paragraph 10.12.4.4.e](#).
- b. Train work center personnel on their TCP responsibilities.
- c. Assign Primary and Alternate Work Center Tool Control Representatives.

- d. Randomly spot-check work in-progress to verify TCP procedures are being complied with.
- e. Immediately correct tool control discrepancies discovered during work center audits.
- f. Supervise the work center's actions when tools are missing per [paragraph 10.12.3.9](#).

NOTE: The flight engineer, crew chief, or senior maintenance technician (in the absence of an assigned crew chief) assumes Work Center Supervisor TC responsibilities for in-flight maintenance.

10.12.4.9 Work Center Tool Control Representative:

- a. Assist the Work Center Supervisor in managing the TCP.
- b. Maintain tools and tool containers in serviceable condition, and verify containers are FOD free and clean.
- c. Conduct semi-annual tool container inventory reconciliations with the TCP Coordinator per [paragraph 10.12.4.4.f](#).
- d. Maintain a TCP file, to include:
 - (1) Copies of work center tool container inventories and layout photographs or diagrams.
 - (2) Copies of TCM change requests and deviation requests.

From: (Requesting activity)
To: Type Wing or MAW

Subj: (T/M/S) TOOL CONTROL MANUAL CHANGE RECOMMENDATION

Ref: (a) COMNAVAIRFORINST 4790.2
(b) NAVAIR 17-1 (T/M/S) Tool Control Manual

Encl: (1) (Pictures or drawings needed to illustrate the change).

1. Per reference (a), recommend the following change to reference (b):
 - a. TCM Container No.:
 - b. Change:
 - c. Justification: (Provide a detailed justification of the need for the change).
2. Point of Contact: (Rank and name, DSN number, commercial number, and email of command POC).

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NOTES: 1. If the Type Wing or MAW concurs with the change, they will submit it to NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.8.6.10 as a Technical Publication Deficiency Report (TPDR), per the procedures of 10.9.

2. IMAs and Depots must develop a form for requesting and documenting approval or disapproval of change recommendations to their TCM.

Figure 10.12-1: Tool Control Manual Change Recommendation (Example)

From: (Requesting activity)

To: (Wing or MAW)

Subj: (T/M/S) TOOL CONTROL MANUAL DEVIATION REQUEST

Ref: (a) COMNAVAIRFORINST 4790.2
(b) NAVAIR 17-1 (T/M/S) Tool Control Manual

Encl: (1) (Pictures or drawings needed to illustrate the deviation).

1. Per reference (a), request the following deviation to reference (b):

a. TCM Container No.:

b. Deviation:

c. Justification: (Provide a detailed justification of the operational need for the deviation).

2. Point of Contact: (Rank and name, DSN number, commercial number, and email of command POC).

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Figure 10.12-2: Tool Control Manual Deviation Request (Example)

TOOL CONTAINER SHORTAGE LIST					
Tool Container No:					
NOMENCLATURE DRAWER/PANEL/ITEM	TOOL REPORT NO.	DOC NO.	TOOL CONTROL REPRESENTATIVE INITIALS	DATE REPLACED	WC SUPERVISOR INITIALS

Figure 10.12-3: Tool Container Shortage List (Example)

MISSING TOOL REPORT

Date _____ Time _____
Report Originator _____ Signature _____
Work Center _____
Tool Nomenclature and Serial Number _____
Inventory Item Number _____
Aircraft BUNO/Equipment SERNO Tool was used on _____
Circumstances: _____

Work Center Supervisor _____ Signature _____

Maintenance/Production Control

1. Notify: MO___ AMO___ MMCO___ QA___ Air Wing MO (afloat)___
Flight Deck/Hangar Deck Control (afloat)___
 2. O-level: Initiate a downing WO for affected aircraft, place in the ADB, and update aircraft status to "Down" in OOMA.
- I-level: Flag the work center status board and stop production for the job involved.

WO/MAF MCN _____

Remarks: _____

MC/PC _____ Signature _____
Date _____ Time _____

Figure 10.12-4 (page 1): Missing Tool Report (Example)

Quality Assurance

Report Number _____

Investigator Assigned _____

Investigation Results:

a. Tool was found/not found.

b. Details and recommendations: _____

Investigator Signature _____ Date _____ Time _____

Quality Assurance Officer Recommendations: _____

QA Officer _____ Signature _____

Date _____ Time _____

Maintenance Officer

Aircraft/Equipment released for flight/use: Yes _____ No _____

Direction: _____

Maintenance Officer _____ Signature _____

Tool Control Coordinator

Missing Tool replaced from spare? Yes _____ No _____

Placed on order? Yes _____ No _____

Requisition Number or SERVMART/Open Purchase Date _____

Replacement tool issued to: _____ Date: _____

Figure 10.12-4 (page 2): Missing Tool Report (Example)

BROKEN/WORN TOOL REPORT

Report Number _____
Date/Time _____
Report Originator _____ Signature _____
Work Center _____
Tool Nomenclature _____
Container Number _____
Inventory Item Number _____
Damage: _____
Are all broken pieces accounted for? Yes ___ No ___
NOTE: If all pieces are not accounted for, file a Missing Tool Report.
Work Center Supervisor _____ Signature _____

Quality Assurance

All pieces sighted.
QAR _____ Signature _____ Date _____ Time _____
Recommendation: _____

Tool Control Coordinator

Broken/Worn Tool Received. Signature _____ Date _____
Replaced from spare? Yes ___ No ___
Placed on order? Yes ___ No ___
Requisition Number or SERVMART/Open Purchase Date: _____
Replacement tool issued to: Name: _____ Date: _____

Figure 10.12-5: Broken/Worn Tool Report (Example)

From: (Activity) Quality Assurance
To: Contractor/Field Maintenance Team

Subj: CONTRACTOR/FIELD MAINTENANCE TEAM TOOL CONTROL
AND FOREIGN OBJECT DAMAGE (FOD) PREVENTION BRIEF

Ref: (a) COMNAVAIRFORINST 4790.2

1. Reference (a) requires Quality Assurance brief each contractor/field maintenance team on tool control and FOD prevention requirements, and conduct a joint inventory of tools and equipment prior to the contractor/field maintenance team commencing work.

2. Summary of aircraft/equipment/component work to be done:

3. A Quality Assurance Representative or the QA Supervisor must jointly conduct a tool inventory with the Contractor/Field Maintenance Team Leader prior to starting and upon completion of each maintenance assignment. The Team Leader must notify QA of any additional tools introduced after the initial tool inventory. If the volume of the tools precludes a 100% inventory, the Team Leader will list each tool used, and must certify 100% are accounted for following work accomplishment.

4. The Contractor/Field Maintenance Team Leader must immediately notify QA or the QA Supervisor of a missing or broken tool. Broken tools will be sighted by a QAR and all pieces accounted for.

5. I have been briefed by the activity QAR/QA Supervisor on the responsibilities of all contractor/field maintenance team personnel with respect to proper TCP and FOD procedures. Copy of tool inventory attached.

Team Leader Printed Name and Signature:

_____/_____ Date: _____

Figure 10.12-6 (page 1): Contractor/Field Maintenance Team Tool Control Program and FOD Brief (Example)

6. Inventories:

- a. Completed initial tool and equipment inventory prior to commencement of work.

Team Leader Printed Name and Signature: _____ / _____ Date: _____

QAR Printed Name and Signature: _____ / _____ Date: _____

- b. Completed final inventory. All tools and equipment -accounted for.

Team Leader Printed Name and Signature: _____ / _____ Date: _____

QAR Printed Name and Signature: _____ / _____ Date: _____

Figure 10.12-6 (page 2): Contractor/Field Maintenance Team Tool Control Program and FOD Brief (Example)

10.13 Corrosion Prevention and Control Program (NAMPSOP)

10.13.1 References

- a. OPNAVINST 5100.19, Navy Safety and Occupational Health (SOH) Program Manual for Forces Afloat.
- b. OPNAVINST 5100.23, Navy Safety and Occupational Health Program Manual.
- c. NAVAIR 17-1-125, Support Equipment Cleaning, Preservation and Corrosion Control.
- d. NAVAIR 01-1A-509-1, Cleaning and Corrosion Control, Volume I, Corrosion Program and Corrosion Theory.
- e. NAVAIR 01-1A-509-2, Cleaning and Corrosion Control, Volume II Aircraft.
- f. NAVAIR 01-1A-509-3, Cleaning and Corrosion Control, Volume III Avionics and Electronics.
- g. NAVAIR 01-1A-75, Airborne Weapons and Associated Equipment Consumable Material Applications and Hazardous Material Authorized Use List.
- h. NAVAIR 00-80T-123, Chemical, Biological, Radiological, and Nuclear Defense NATOPS Manual.
- i. NAVAIR 15-01-500, Preservation of Naval Aircraft.
- j. COMNAVAIRFORINST 4750.4, Guidance for the Application of Polyurethane Paints in Aircraft and Related Equipment While Embarked Onboard CVNs.
- k. MIL-STD-2161C(AS), Paint Schemes and Exterior Markings for U.S. Navy and Marine Corps Aircraft.
- l. OPNAVINST 5215.17, Navy Directives Management Program.

10.13.2 Introduction

10.13.2.1 The Corrosion Prevention and Control Program establishes general policy for preventing and controlling corrosion damage to naval aircraft, engines, components, and support equipment (SE).

10.13.2.2 The primary goal of the Corrosion Prevention and Control Program is to prevent corrosion from starting. The secondary goal is to detect and treat corrosion in the earliest stages of development to minimize corrosion damage. The primary elements of the program are:

- a. Personnel who are knowledgeable and skilled in corrosion prevention and control.
- b. Rigid adherence to the preservation, corrosion prevention, inspection, and treatment procedures specified in the references, and type/model/series (T/M/S) aircraft or equipment maintenance manuals and Focus Area Lists (FAL).
- c. Data analysis that enables informed decisions on actions required to improve corrosion prevention and control.

10.13.2.3 Aircraft corrosion FALs are a major element of corrosion prevention and detection. FALs identify T/M/S specific areas that adversely impact the maintenance cost and time required to maintain aircraft readiness. FALs identify, analyze, report, track, and measure where corrosion mitigation efforts should be concentrated.

10.13.2.4 Preservation minimizes the deterioration of aircraft, engines and equipment while they are inactive or in shipment. Diligent preservation practices optimize aircraft, engine, and SE availability, service life management, and total ownership costs.

10.13.2.5 The coating systems used on naval aircraft and the colors selected have been developed to provide protection of critical surface material and maximum tactical advantage.

10.13.2.6 Corrosion Control In-Service Support Centers (ISSC):

a. Aircraft Weapons System Cleaning and Corrosion Control/Preservation: COMMANDING OFFICER, FRCSW NORTH ISLAND, CODE 4.3.4.6.0, BLDG 469, PO BOX 357058, SAN DIEGO CA 92135-7058, DSN 735-9759 or COMM (619) 545-9759.

b. Avionics Cleaning and Corrosion Control: COMMANDING OFFICER, FRCSW NORTH ISLAND, CODE 4.3.4.6.0, BLDG 469, PO BOX 357058, SAN DIEGO CA 92135-7058, DSN 735-9756 or COMM (619) 545-9759.

c. SE Cleaning and Corrosion Control/Preservation: COMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.3.4.2, HIGHWAY 547, JOINT BASE MDL NJ 08733-5033, DSN 624-2716 or COMM (732) 323-2716.

d. Naval Aviation Nuclear, Biological and Chemical Defense: COMMANDER, NAVAL AIR SYSTEMS COMMAND, COMBAT SURVIVABILITY DIVISION, CODE 4.1.8 (CHEMICAL BIOLOGICAL DEFENSE), BLDG 2187, 48110 SHAW ROAD, SUITE 1280-E3, PATUXENT RIVER, MD 20670-1906, DSN 342-0202 or COMM (301) 342-0202.

10.13.2.7 The NAVAIR and COMNAVAIRFOR Corrosion Prevention Teams are responsible for coordinating corrosion prevention efforts across all ACCs and all T/M/S aircraft.

10.13.3 Requirements

All naval aviation activities are responsible for maintaining the material condition of the aircraft and equipment under their control. Commercial and other government activities performing contract maintenance, production, or other support functions on naval aircraft and equipment are required to meet the same or equivalent standards.

a. O-Level activities with an authorized allowance of seven or more aircraft must establish a Work Center 12C (Corrosion Control Shop). Minimum manpower requirements:

(1) One Navy Aviation Structural Mechanic (AM) or United States Marine Corps (USMC) Military Occupational Specialty (MOS) equivalent E-6 or above qualified aircraft painter as Work Center 12C Supervisor.

(2) One additional qualified painter, E-5 or above.

(3) Additional Work Center 12C personnel and qualified painters, as specified by the Type Wing or Marine Aircraft Wing (MAW) local command procedure (LCP) per [paragraph 10.13.4.3](#).

b. O-level activities with an authorized allowance of six or less aircraft should establish a Work Center 12C (Corrosion Control Shop) as manpower allows. If a Work Center 12C is not established, activities with six or less aircraft must assemble a Corrosion Control Team as needed for periodic and unscheduled maintenance requirements. Minimum manpower requirements:

(1) One Navy AM or USMC MOS equivalent E-6 or above qualified aircraft painter.

(2) One additional qualified painter, E-5 or above.

(3) Additional Work Center 12C or Corrosion Control Team personnel and qualified painters, as specified by the Type Wing or MAW LCP per [paragraph 10.13.4.3](#).

c. I-level activity Airframes Division and Support Equipment Division must each have a minimum of two qualified painters, Navy AM rate or USMC MOS 6062 or 6092. At least one of the painters in each division must be E-5 or above.

10.13.3.1 Training Requirements

a. All O-level and I-level personnel engaged in aircraft, engine, component, or SE maintenance must complete one of the following corrosion control training courses:

(1) CNATT Aviation "A" School courses: AD C-601-2011, AM C-603-0175, PR C-602-2043, AME C-602-2033, AT-I C-100-2017, AT-O C-100-2018, AE C-602-2039, AO C-646-2011, or AS C-602-2026.

(2) CNATT Basic Corrosion Control course (Course CIN CNATT-000-BCC-025-002-C0) or Avionics Corrosion course (Course CIN CNATT-000-ACC-025-001-C0) available at <https://www.nko.navy.mil> under the Learning tab.

(3) CNATT Corrosion Control (Basic) course (Course CIN C-600-3180).

(4) Aircraft Corrosion Control course (Course N-701-0013) or CNATT Aircraft Corrosion course (Course CIN C-600-3183).

(5) Aviation Professional Apprentice Career Track course (Course CIN C-950-0011).

NOTES: 1. Personnel that completed Aviation "A" School between April 1992 and October 2005 or Aviation Warfare Apprentice Training course (Course CIN C-100-2021) between March 2010 and March 2015 received corrosion control training equivalent to that listed in paragraph 10.13.3.1.a(1).

2. Course information for all NAVAIR and CNATT courses is available on CANTRAC at <https://main.prod.cetars.training.navy.mil>.

b. Personnel assigned to an O-level Work Center 12C or Corrosion Control Team or to I-level Work Centers 51B, 60A, and 92D must complete the Aircraft Corrosion Control course (Course CIN N-701-0013) or Aircraft Corrosion course (Course CIN C-600-3183) within 60 days of assignment, if not previously completed.

NOTE: The courses noted in subparagraphs 10.13.3.1.a(1) and 10.13.3.1.a(2) are prerequisite courses for attending the Aircraft Corrosion Control course (Course CIN N-701-0013) and the Aircraft Corrosion course (Course CIN C-600-3183).

c. Personnel assigned as painters must complete the Aircraft Paint Touch Up and Markings course (Course CIN N-701-0014) or Aircraft Paint/Finish course (Course CIN C-600-3182) prior to performing painting operations. This qualification is valid indefinitely.

NOTES: 1. Completion of Aircraft Corrosion Control course (Course CIN N-701-0013) or Aircraft Corrosion course (Course CIN C-600-3183) is a prerequisite for the Aircraft Paint/Finish Course (Course CIN C-600-3182) and the Aircraft Paint Touch Up and Markings Course (Course CIN N-701-0014).

2. The use of self-contained Touch-Up pens does not require completion of the Aircraft Paint Touch Up and Markings course (Course CIN N-701-0014).

3. NATEC and D-level Mobile Training Teams can provide on-site training. Requests for on-site training will be submitted via the activity's ACC. NATEC can provide the Aircraft Corrosion Control course (Course CIN N-701-0013) or Aircraft Corrosion course (Course CIN C-600-3183) Paint/Finish course (Course CIN-701-0014/C-600-3182), if authorized in writing by the course manager. D-level Mobile Training Teams can provide the Aircraft Corrosion Control course (Course CIN N-701-0013) and the Aircraft Paint Touch-up and Markings course (Course CIN N-701-0014). Depot FRC and NATEC representatives providing formal course support are required to be qualified instructors. Setup, facilities, materials, publications, attendance, and other considerations are the requesting unit's responsibility.

d. All O-level Quality Assurance Representatives (QAR), regardless of rate or MOS, must complete the Aircraft Corrosion Control course (Course CIN N-701-0013) or Aircraft Corrosion course (Course CIN C-600-3183) within 60 days of designation, if not previously completed. For I-level activities, at a minimum, the Navy AM rate and Marine Corps MOS 6062 or 6092 QARs must complete one of the above courses within 60 days of designation, if not previously completed.

NOTE: If an individual is assigned as a QAR while on deployment, they must complete the requirements within 90 calendar days after return from deployment.

e. Type Wing or MAW Material Condition Inspectors must complete the Aircraft Corrosion Control course (Course CIN-N-701-0013) or Aircraft Corrosion course (Course CIN C-600-3183) within 90 days of assignment.

f. O-level and I-level activities must conduct quarterly corrosion control training for all maintenance personnel. Training will include prevention, inspection, detection, identification, treatment, and documentation. Training will be conducted by technicians that have completed Aircraft Corrosion Control course (Course CIN N-701-0013) or Aircraft Corrosion course (Course CIN C-600-3183), and will be logged via Advanced Skills Management (ASM) or equivalent.

g. O-level activities will conduct indoctrination training on corrosion control detection and identification for newly assigned aircrew personnel. Training will be conducted by technicians that have completed the Aircraft Corrosion Control course (Course CIN N-701-0013) or the Aircraft Corrosion course (Course CIN C-600-3183), and will be logged via ASM or equivalent.

h. D-level artisans performing corrosion inspections, prevention, and treatment must complete locally prepared corrosion control and aircraft painting courses.

10.13.3.2 Facilities and Environmental Requirements.

A current Industrial Hygienist (IH) survey is required for all facilities where aircraft painting is conducted. The survey must cover the requirements specified in OPNAVINST 5100.19 and

OPNAVINST 5100.23, to include a workplace and exposure assessment of all aircraft and aeronautical equipment painting operations.

NOTE: Changes to paint processes or equipment require a new IH baseline survey.

10.13.3.3 Medical and Personal Protective Equipment (PPE) Requirements

Activities performing corrosion control must comply with the Respirator Protection Program directed in references OPNAVINST 5100.19 and OPNAVINST 5100.23.

a. Personnel assigned duties involving the opening, mixing, or application of coating materials must receive pre-placement training, medical surveillance evaluations, respirator fit testing, and respirator use as recommended by the IH in OPNAVINST 5100.19 and OPNAVINST 5100.23.

b. Personnel assigned duties involving exposure to potentially harmful dusts, mists, or vapors must use the personal protective clothing and equipment required by OPNAVINST 5100.19, OPNAVINST 5100.23, NAVAIR 17-1-125, NAVAIR 01-1A-509-2, NAVAIR 01-1A-509-3, NAVAIR 01-1A-75, and as specified in the Industrial Hygiene Survey Report.

c. Unprotected personnel will be restricted from areas with exposure to potentially harmful dusts, mists, or vapors.

d. Unprotected personnel will be restricted from areas where polyurethane or other potentially hazardous coatings are used, including opening, mixing, and application. Refer to Safety Data Sheets and the IH survey to determine the specific coating or maintenance material hazards.

10.13.3.4 Emergency Reclamation Team (ERT).

a. Activities responsible for operating or supporting aircraft operations must have an ERT. The team will be comprised of all Work Center 12C or Corrosion Control Team members and additional personnel from other work centers as deemed necessary by the Type Wing or MAW.

b. The ERT must conduct and document semi-annual training and drills to refresh team members in emergency reclamation actions. The drills will encompass specific O-level and I-level emergency reclamation procedures for the T/M/S aircraft, engines, components, and SE supported, to include the procedures for corrosion treatment.

NOTES: 1. Drills do not require the physical removal of components, or washing of aircraft, SE, or components.

2. D-level activities will conduct ERT drills per command instructions.

c. ERT procedures must be specified in LCPs per [Appendix D](#). At a minimum, LCPs must include:

(1) A list of references specific to emergency reclamation corrosion treatment procedures, including NAVAIR 00-80T-123 and NAVAIR 01-1A-509-1 for aircraft and equipment exposed to Nuclear, Biological, and Chemical (NBC) agents.

(2) A priority removal and treatment list for each T/M/S aircraft supported.

(3) A list of materials and equipment, including PPE required for emergency reclamation and corrosion treatment, per NAVAIR 01-1A-509-2 and NAVAIR 01-1A-509-3. The list will also specify which work center is responsible for holding the materials, equipment, and PPE.

- (4) A list of ERT manning requirements by work center and rate or MOS.
- (5) A list of required PPE, including details on when it must be used.

NOTES: 1. All hazardous material to support emergency reclamation must be retained at the Consolidated Hazmat Reutilization and Inventory Management Program (CHRIMP) site. Material will be inventoried quarterly, jointly by the ERT Leader and the CHRIMP Site Supervisor, to verify items are on hand, in the correct quantities, and within prescribed shelf life.

2. Water solution component cleaning and ultrasonic drying will not be used on components and equipment unless specified by maintenance technical manuals specific to the component or equipment being treated.

10.13.3.5 Aircraft, Engine, and Equipment Preservation Requirements.

a. Aircraft will be preserved per NAVAIR 15-01-500 and aircraft technical manuals. If an aircraft has not flown in 30 days, a determination must be made of when the aircraft is expected to be flown. If the aircraft is expected to exceed 45 days of non-flight, the aircraft must be preserved per the most appropriate level specified in NAVAIR 15-01-500. Factors to consider in determining the level of preservation include whether the aircraft is being actively maintained (repairs are ongoing and scheduled maintenance is being performed), impact to aircraft integrity of missing parts, and environmental conditions (parked inside or outside, temperature and humidity levels, proximity to salt water, etc.).

b. Support equipment will be preserved per NAVAIR 17-1-125 and equipment technical manuals.

c. Aircraft engines and detachable mission equipment (aircraft armament equipment, troop seats, external cargo hook, pod, etc.) must be preserved as directed in NAVAIR 15-01-500 and applicable technical manuals when not installed or in use.

d. Aeronautical parts and components, regardless of RFI or NRFI status, will be preserved, packaged, and handled in a manner as to prevent corrosive deterioration. In no case will NRFI material not be protected from corrosion while awaiting repair. The P700-CNP Web site (<https://tarp.navsisa.navy.mil/p700.nsf>) provides preservation and packaging requirements for specific repairable components.

10.13.3.6 Aircraft and Equipment Painting Requirements.

a. Aircraft and equipment coating systems will be per NAVAIR 01-1A-509-2, MIL-STD-2161C(AS), and COMNAVAIRFORINST 4750.4.

b. Aircraft painting.

(1) Squadron logo and insignia is restricted to aircraft tail(s) only.

(2) Squadron logo and insignia on Tactical Paint Scheme (TPS) aircraft will use only the low contrast shade of TPS gray against gray background. Camouflage painted aircraft will use black (color number 37038) against land camouflage background.

(3) Aircraft side numbers and squadron identifier may be painted in flat black or TPS gray.

(4) Aircrew, plane captain, and ship name may be added with letters not exceeding two inches in size in flat black or TPS gray.

(5) Low observant aircraft will be painted in TPS only, regardless of employment. No squadron or air wing colors are authorized.

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

(7) Deviations from the specified reference MIL-STD-2161C(AS) paint scheme will only be considered for tactical reasons, for example, to evaluate an alternate paint scheme, and must be approved by the ACC prior to application.

NOTE: 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.

(8) Only the painting processes and paints specified in reference MIL-STD-2161C(AS) will be used for aircraft painting. The use of any non-approved process is strictly prohibited. Because state and local government 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.

(9) Touch-up painting will be restricted to only that amount required to repair damage during the corrosion repair process.

(10) Repainting of aircraft or entire sections of the aircraft by O-level and I-level maintenance activities is specifically prohibited, except when authorized in writing by the ACC.

(11) Manufacturer's thinning instructions must be followed to ensure volatile organic compound (VOC) limits are not exceeded. Commands will consult the Station or Ship Safety Officer, Environmental Officer, or IH to determine if coating conforms to local environmental regulations per [paragraph 10.19](#).

c. Support equipment painting.

(1) Complete repainting of SE or ancillary components is an authorized I-level maintenance function. Whenever possible, painting will be done in a paint booth.

(2) When SE painting is performed ashore, paint booths must be inspected and approval by the host Occupational Safety and Health Office and Fire Department is required per OPNAVINST 5100.23.

(3) Approval of the Safety Officer or IH is required when painting in maintenance hangars or spaces afloat.

(4) SE painting procedures will strictly comply with personnel safety requirements.

d. Paint facility.

(1) Activities performing painting operations must obtain an IH survey that includes an assessment of paint touch-up operation of aeronautical equipment per OPNAVINST 5100.19, OPNAVINST 5100.23, and NAVAIR 01-1A-509-2. The assessment must include, at a minimum:

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

NOTE: Activities must notify the responsible IH of any permanent changes to the painting process that may affect the workplace. This requirement is not restricted to painting material containing isocyanates.

e. Safety precautions.

(1) Unprotected exposure of hexamethylene diisocyanates or toluene diisocyanate must be limited to a concentration of 0.005 PPM averaged over an 8 hour period. Additionally, unprotected workers must not be exposed to toluene diisocyanate concentrations exceeding 0.02 PPM for any 15-minute period.

(2) Half-face organic vapor (charcoal) air purifying respirators used to protect against toluene diisocyanate or hexamethylene diisocyanates cannot be used when the concentration of these contaminants exceed 0.005 PPM.

NOTE: Isocyanate substances cannot be detected by smell or taste should the respirator cartridge fail or become ineffective due to overloading.

(3) Supplied-air respirators must be used for touch-up operations requiring more than 8 ounces of paint containing isocyanates per 8 hour period. Unless recommended otherwise by the responsible 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.

(4) Paint volatile organic compound content must not exceed local environmental restrictions.

(5) Personnel conducting touch-up processes must be medically qualified and receive training specific to the types of touch-up they perform.

(6) A cartridge change schedule must be established and followed for organic vapor cartridges.

f. Approval to deviate from using specified material and processes must be requested in writing to the ACC prior to use. Copies of changes to the authorized material list must be provided to the host safety office and the responsible IH.

10.13.4 Responsibilities

10.13.4.1 COMNAVAIRPAC (CNAP) N422:

- a. Lead the NAVAIR and COMNAVAIRFOR Corrosion Prevention Teams.
- b. Approve FALs for dissemination to Wings and MAWs.

c. Direct Material Condition Inspection TMS minimum inspection criteria for uniform inspection of each T/M/S per [paragraph 10.24](#).

d. Direct and monitor T/M/S corrosion variance and abatement metrics.

10.13.4.2 COMNAVAIRSYCOM (NAVAIR)

a. NAVAIR-4.9.7: Direct all material and processes used in the maintenance of aircraft and SE paint systems, to include the list of authorized materials for aircraft and SE painting.

b. T/M/S Aircraft ISSC and FST:

(1) Coordinate the development of FALs, using the FAL Development Process ([Figure 10.13-1](#)), using the previous 24 months of corrosion degrader data, as a minimum, to include scheduled and unscheduled D-level maintenance events. The FAL will be structured per the FAL template ([Figures 10.13-2 through 10.13-6](#)).

(2) Validate FALs with Type Wings and MAWs and forward to CNAP N422 for approval.

(3) Coordinate with Type Wings and MAWs to prioritize actions to improve the material condition of corrosion prone areas identified in the FAL.

(4) Review and update the FAL at least every two years.

c. T/M/S Baseline Manger:

(1) Build the NAVAIR 15-01-500 requirements into CM baseline for aircraft and components (engines, prop assemblies, APUs, aircraft armament systems, etc.) which do not have specific preservation MRCs.

(2) Build the NAVAIR 17-1-125 requirements into CM baseline for SE which do not have specific preservation MRCs.

10.13.4.3 Type Wing or MAW:

a. Publish LCPs per [Appendix D](#), specifying:

(1) Any additional Work Center 12C or Corrosion Control Team manning beyond the manning specified in paragraphs [10.13.3.a](#) and [10.13.3.b](#), including number of painters, based on the workload associated with each T/M/S aircraft and the operational environment. Standards may vary based on deployed or non-deployed status.

(2) Emergency reclamation procedures per [paragraph 10.13.3.4](#).

NOTE: The Emergency Reclamation procedures portion of the LCP must be jointly developed with the supporting I-level activity.

(3) T/M/S FAL or other specific Corrosion Areas of Concern, utilizing ([Figures 10-13.2 through 10.13-6](#)).

(4) Local facility, environmental, and NAVOSH requirements.

(5) Act as final approver for requests to waive or modify preservation requirements for aircraft and aeronautical equipment undergoing extensive repairs or modifications when the preservation would adversely affect the completion of the task.

(6) Coordinate with the ISSC or FST to validate T/M/S FAL.

(7) Distribute approved FALs to subordinate squadrons.

b. Publish a FAL mitigation and corrective action plan to improve the material condition of specific areas and items identified in the FAL.

c. Publish T/M/S Corrosion Areas of Concern lists for those T/M/S aircraft that do not have a FAL. Corrosion Areas of Concern lists will be developed based on corrosion discrepancy trends.

d. Publish an OJT syllabus for training Wing Material Condition Inspectors and squadron QARs and Collateral Duty Quality Assurance Representatives (CDQAR) on T/M/S specific corrosion prevention, inspection, detection, and treatment, with emphasis on the areas identified in the FAL or corrosion areas of concern list.

e. Conduct annual FAL and corrosion areas of concern list training for squadron QARs and CDQARs. Training must be conducted by Type Wing or MAW Material Condition Inspectors.

f. Emphasize corrosion control procedures in the Wing training and testing syllabus for QARs, CDQARs, and Collateral Duty Inspectors (CDI) per [Chapter 7](#).

g. Inspect and verify aircraft paint schemes conform to the specifications of [paragraph 10.13.3.6](#).

10.13.4.4 CVW and ACE:

Enforce the requirements of this NAMPSOP during training detachments and deployments.

10.13.4.5 MO:

a. Designate a Corrosion Prevention and Control Program Manager. Designation will be in writing, via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

b. (O-level) Publish LCP per [Appendix D](#), if required to address any corrosion control and prevention or emergency reclamation procedures not addressed in this NAMPSOP or Wing LCP. Command LCPs will be submitted to the Type Wing or MAW for consideration of inclusion in the Wing LCP.

c. (I-level) Publish LCP per [Appendix D](#), to direct command specific corrosion control and prevention procedures not addressed in this NAMPSOP. The LCP must address:

(1) Any local facility, environmental and NAVOSH requirements.

(2) Production Control, Division and Work Center responsibilities for emergency reclamation.

(3) Materials for emergency reclamation of components and equipment.

(4) Copies of T/M/S priority removal lists.

(5) Procedures for onsite emergency reclamation assistance to supported O-level activities.

d. Designate Emergency Reclamation Team members, per [paragraph 10.13.3.4](#). Designation will be in writing, via the MMP or SME listing.

e. (O-level) Determine and direct the appropriate level of preservation for aircraft exceeding 30 days without a flight, per the criteria of [paragraph 10.13.3.5a](#). The determination will be documented in the aircraft logbook Miscellaneous History (OPNAV 4790/25A).

10.13.4.6 AMO:

Establish a training plan to qualify personnel to perform corrosion prevention, detection, evaluation, treatment, and reporting.

10.13.4.7 MMCO:

a. Schedule adequate time to accomplish corrosion prevention, detection and treatment.

b. Review the CNAP Corrosion Class Desk Corrosion Abatement Variance Charts posted on CNAP [Share portal](#) each quarter, and identify actions required to improve corrosion prevention and treatment. The review will be conducted jointly with the Corrosion Prevention and Control Program Manager and the Quality Assurance (QA) Program Monitor.

c. Implement FAL and corrosion areas of concern mitigation and corrective action practices.

d. Verify compliance with the preservation requirements of [paragraph 10.13.3.5](#).

e. Maintain aircraft paint schemes as specified in references MIL-STD-2161C(AS), COMNAVAIRFORINST 4750.4, and [paragraph 10.13.3.6](#).

10.13.4.8 Program Manager:

a. Perform a program assessment within 30 days of designation as Program Manager and annually thereafter, per [paragraph 10.7](#).

b. Keep current in the requirements of all applicable references cited in this instruction and maintenance technical manuals.

c. Provide technical advice and assistance to work centers in matters pertaining to corrosion prevention and control.

d. Coordinate with the IH to conduct facility surveys, and verify the IH survey includes all requirements specified in [paragraph 10.13.3.6](#).

e. Notify the responsible IH of any permanent changes to painting processes or its components that may affect the workplace.

f. Provide Corrosion Prevention and Control Program NAMP indoctrination training per [paragraph 10.1](#).

g. Periodically spot check work in progress to verify required PPE is being used by personnel assigned duties involving exposure to potentially harmful dusts, mists, or vapors.

h. Supervise the ERT.

- i. Provide indoctrination training to ERT members and supervise the quarterly drills per [paragraph 10.13.3.4](#).
- j. Conduct a quarterly inventory to verify materials, equipment, and tools required to perform corrosion prevention, treatment, and emergency reclamation are available.
- k. Verify entries are made in the Miscellaneous/History (OPNAV 4790/25A) of the logbook or AESR per [Chapter 5](#) for aircraft or equipment exposed to large quantities of salt water or firefighting chemicals.
- l. (I-level Program Managers) Provide expertise and assistance to supported O-level activities during reclamation actions.
- m. Verify personnel assigned duties involving the use of paints, primers or chemical conversion coating materials have received pre-placement training, a medical evaluation, and respirator fit testing and use training per [paragraph 10.13.3.3](#), prior to performing coating operations, and verify personnel complete periodic medical surveillance evaluations.
- n. Assist the MMCO with the quarterly review of the CNAP Corrosion Class Desk Corrosion Abatement Variance Charts (<https://cpf.navy.deps.mil/sites/cnap/default.aspx>) and coordinate actions to improve corrosion prevention.
- o. Maintain a program file to include:
 - (1) POCs.
 - (2) Syllabus identifying the activity's corrosion prevention and control and ERT training requirements.
 - (3) Program related correspondence and message traffic.
 - (4) References or cross reference locator sheets.
 - (5) A copy of the current IH survey of the activity's facilities.
 - (6) Most current Computerized Self Evaluation Checklist (CSEC) assessment.

10.13.4.9 Quality Assurance:

- a. QA Officer: Designate a corrosion control qualified QAR (AM senior petty officer or D-level equivalent) as the Corrosion Prevention and Control Program Monitor. Designation will be in writing, via the MMP or SME listing.
- b. QA Supervisor (O-level): Verify QARs, CDQARs, and CDIs have completed FAL training syllabus per [paragraph 10.13.4.3\(d\)](#) and annual FAL training per [paragraph 10.13.4.3\(e\)](#).
- c. Program Monitor:
 - (1) Perform program audits per [paragraph 10.7](#).
 - (2) Conduct random monitors of work in progress to determine compliance with corrosion control, prevention, and treatment requirements.

(3) Assist the MMCO with the quarterly review of the CNAP Corrosion Class Desk Corrosion Abatement Variance Charts (<https://cpf.navy.deps.mil/sites/cnap/default.aspx>) and coordinate actions to improve corrosion prevention.

10.13.4.10 Maintenance Control and Production Control (O-level and I-level only):

a. (O-level) Restrict aircraft from flight with AWM corrosion treatment discrepancies (including Form in Place seal discrepancies) over 28 calendar days old.

NOTE: Deviation to defer corrective action for corrosion discrepancies over 28 calendar days old may be granted by the ACC. Deviation requests must be submitted to the T/M/S Aircraft Class Desk per [paragraph 5.1.1.5.2](#).

b. Verify corrosion control is being correctly documented on WOs and MAFs.

NOTE: All maintenance personnel must use the proper MAL codes (as required) per [Appendix E](#) to document the type and severity of corrosion found on aircraft, aircraft components, and SE.

c. Direct personnel, material, and equipment resources to the ERT to support rapid processing and corrective action during emergency reclamation.

d. Make a recommendation to the MMCO regarding to preserve or not to preserve an aircraft when it has not flown for 14 or more days.

e. Issue a preservation WO or MAF for aircraft, engines, components, and SE per [paragraph 10.13.3.5](#).

f. Brief FAL items when directing scheduled and unscheduled maintenance actions which include one or more FAL items.

NOTE: Refer to T/M/S maintenance technical manuals to determine which, if any, special or conditional inspection tasks must be performed while aircraft are in preservation.

10.13.4.11 Work Center Supervisors:

a. Request class quotas for personnel that do not meet the training requirements specified in [paragraph 10.13.3.1](#).

b. Verify Corrosion Prevention and Control Program and Emergency Reclamation indoctrination training is provided to personnel and documented in the individual's qualification and certification record.

c. Train sufficient numbers of work center personnel in emergency reclamation procedures.

d. Spot check work in progress to verify:

(1) Work Center personnel are complying with PPE requirements per [paragraph 10.13.3.3](#).

(2) Only authorized corrosion prevention and control materials are being used.

(3) Cleaning, corrosion prevention, treatment, and preservation are performed in accordance with procedures specified in technical manuals.

e. Review WOs or MAFs to verify personnel are complying with corrosion documentation procedures.

f. Verify personnel are aware of FAL corrosion areas of concern, and emphasize the importance of strict adherence to corrosion prevention and control procedures while performing maintenance in these areas.

g. (I-level) Accomplish internal and external preservation prior to packaging components.

NOTE: Aeronautical Material Screening Unit (AMSU) will ensure components are adequately protected for routing to the supply or IMA packing and preservation section. For the Marine Corps, this is the function of the Supply Shipping Branch of the Repairables Management Division (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 I-level or D-level activity.

10.13.4.12 D-Level:

a. Verify corrosion prevention and control are accomplished by each work center during the processing of engines, components, and SE.

NOTE: All maintenance personnel must use the proper MAL codes (as required) per [Appendix E](#) to document the type and severity of corrosion found on aircraft, aircraft components, and SE.

b. Publish a LCP per OPNAVINST 5215.17 to specify processing procedures for reclaiming salt water or chemical damaged equipment, work area personnel assignments and duties, requirements for reclamation team training, materials, and equipment.

c. Provide expertise and equipment assistance to supported O-level and I-level activities during reclamation actions.

d. Assign corrosion prevention and control qualified personnel from the following work areas to the command's ERT:

- (1) Aircraft airframes.
- (2) Avionics.
- (3) Aircraft power plants.
- (4) Support equipment.
- (5) Ordnance qualified personnel (as applicable).

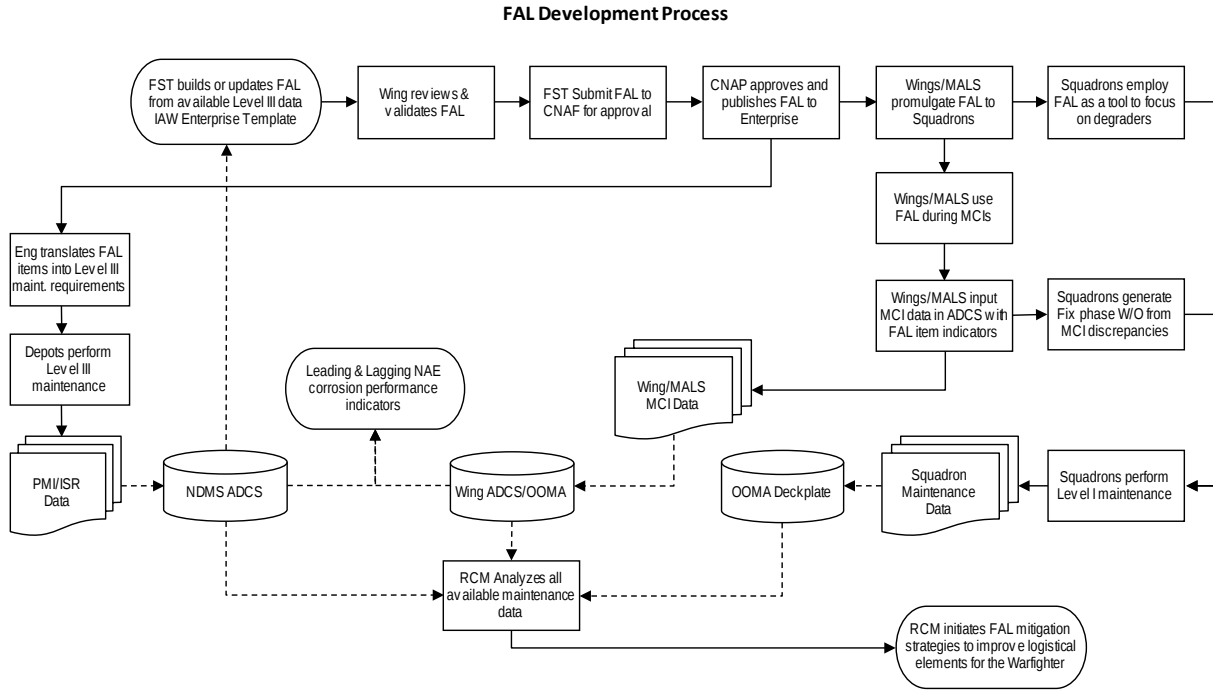


Figure 10.13-1: FAL Development Process

PLATFORM T/M/S
ISSC/FST ORG RESPONSIBLE
PHYSICAL LOCATION
ADDRESS

From: ISSC/FST Organization Responsible
To: Squadrons, IMAs, and D-level activities

Subj: GUIDELINES FOR T/M/S SPECIFIC FOCUS AREA LIST

Ref: (a) COMNAVAIRFOR INST 4790.2C

Encl: (1) FOCUS AREA LIST T/M/S SUMMARY
(2) FAL T/M/S LEVEL-II MAINTENANCE DETAIL
(3) FAL T/M/S LEVEL-III MAINTENANCE DETAIL
(4) FAL T/M/S FREQUENCY PARETO CHART

1. The purpose of the Focus Area List (FAL) is to focus the Naval Aviation Enterprise on platform corrosion degraders
2. In November 2007 the Naval Aviation Enterprise (NAE) Air Board directed stand-up of a cross-functional Corrosion Prevention Team (CPT) to attack cost service life and readiness impacts throughout Naval Aviation. The CPT is comprised of COMNAVAIRFOR, NAVAIR, FRCs, FSTs, and Wings. In order for an area to make it on the Focus Area List, either a discrepancy had to occur frequently or it had to be a significant resource consumer during Level III maintenance events. Data used to build the FAL is derived primarily from the Automated Data Capture System (ADCS) which is utilized to document discrepancies during PMI events.
3. The FAL is used by all hands as a tool to help improve and validate airframe material condition performance, inspections, and improvements and allow commands to:
 - a) Prioritize mitigation and Root Cause Analysis efforts of the most significant corrosion degraders across the system.
 - b) Capture and articulate corrosion related critical aircraft material condition issues to the enterprise.
4. The effective date of the FAL is DDMMYYYY
5. All previous editions of the FAL are canceled by this instruction.

S. BAREFOOT
By Direction

Figure 10.13-2: FAL Cover Letter

FAL Priority #	WUC	Nomen	Discrepancy	Frequency	Avg MHrs per repair	Total MHrs
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
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Figure 10.13-3: FAL Summary

COMNAVAIRFORINST 4790.2C
15 Jan 2017

FAL Priority #	Zone	Task Description(s)	MRC/IETM Reference	Insp. Interval	WUC (left/right if applicable)	Frequency
1						
2						
3						
4						
5						
6						
7						
8						
9						
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Figure 10.13-4: FAL Level 1 Detail

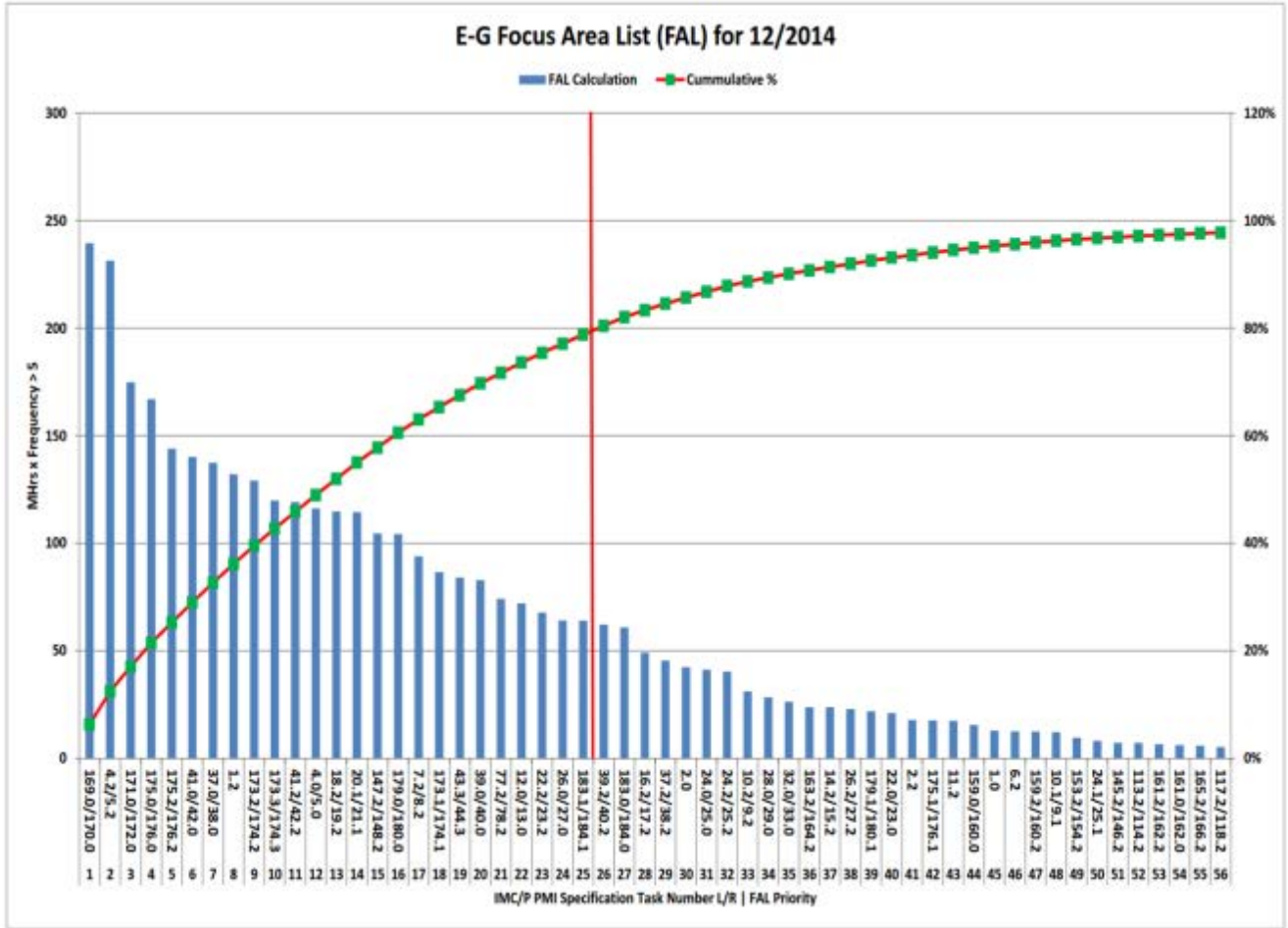


Figure 10.13-6: FAL Pareto Chart (sample)

10.14 Plane Captain Qualification Program (NAMPSOP)

10.14.1 References

- a. NAVAIR 00-80T-113, Aircraft Signals NATOPS Manual.
- b. NAVAIR 00-80T-105, CV NATOPS Manual.
- c. NAVAIR 00-80T-106, LHA/LHD NATOPS Manual.
- d. NAVAIR 00-80T-122, Helicopter Operating Procedures for Air-Capable Ships NATOPS Manual.
- e. OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions.
- f. NAVAIR 01-1A-17, Aviation Hydraulics Manual.
- g. NAVAIR 01-1A-509 (series), Cleaning and Corrosion Control.
- h. NAVAIR 04-10-506, Aircraft Tire and Tubes.
- i. NAVAIR 17-1-125, Support Equipment Cleaning, Prevention and Corrosion Control.

10.14.2 Introduction

The Plane Captain Qualification Program establishes the minimum procedures for training and qualifying personnel to perform plane captain duties. Commercial and other government activities operating naval aircraft are required to meet the same or equivalent standards for their personnel.

10.14.3 Requirements

10.14.3.1 Plane captains shall be designated, in writing, by their Commanding Officer (CO) on the Plane Captain Designation (OPNAV 4790/158) (Figure 10.14-1) or ASM equivalent. Prior to initial designation, plane captains shall:

- a. Complete the Wing or MAW standardized training syllabus.
- b. Pass the written examination administered by a Quality Assurance Representative (QAR) with a passing score of 90%.
- c. Pass the practical examination administered by a QAR that is currently qualified as a plane captain.

NOTES: 1. Collateral Duty QARs (CDQARs) are not authorized to administer the written or practical examination.

2. For D-level activities, any QAR can administer the practical examination.

- d. Be interviewed and recommended by the Plane Captain Selection Board.

NOTE: Designation as a plane captain does not qualify personnel to perform engine or APU turn-up. Refer to Chapter 3 for engine and APU turn-up qualification requirements.

10.14.3.2 In commands where naval aircrewmembers (AWF, AWS, AWV, AWR, AWO, crew chiefs, or flight engineers) perform the functions of a plane captain, the aircrewman NATOPS training syllabus shall include all plane captain qualification requirements. Completion of the training curriculum and the designation as a naval aircrewman (NATOPS Evaluation Report (OPNAV 3710/7)) qualifies the aircrewman for plane captain duties. Naval aircrewmembers qualified as plane captains, per their NATOPS training syllabus, are not

required to take a separate plane captain examination, appear before the Plane Captain Selection Board, or be designated on the Plane Captain Designation form (OPNAV 4790/158) (Figure 10.14-1).

10.14.3.3 Requalification

a. Plane captains shall be monitored for proficiency semi-annually (every 6 months) by a QAR or CDQAR currently designated as a plane captain.

NOTES: 1. Semi-annual monitors are required, at a minimum, every 6 months and shall be completed no later than the last day of the month due.

2. Commands with naval aircrewmen may designate enlisted NATOPS Instructors, Assistant NATOPS Instructors, or NATOPS Instructor Flight Engineers to perform semi-annual monitors.

3. For D-level FRCs, any QA Specialist can conduct semi-annual monitors.

b. Plane captains that have not performed plane captain duties for over 90 days, for example, TAD, convalescent leave, or other special assignment away from the activity, shall complete the Wing/MAW refresher training syllabus and be interviewed by the Plane Captain Qualification Program Manager prior to resuming plane captain duties.

c. Newly assigned personnel that are qualified and have a current Plane Captain Monitor in the same T/M/S aircraft from their previous command may be designated as a plane captain by their new command if they pass a practical examination, and are interviewed and recommended by the new command's Plane Captain Selection Board. Requalification shall be documented on the Plane Captain Designation form (OPNAV 4790/158) (Figure 10.14-1), or ASM equivalent.

d. Personnel that have had their Plane Captain Designation revoked shall complete the entire training syllabus, pass the practical and written examinations, and be interviewed and recommended by the Plane Captain Selection Board. Requalification shall be documented on the Plane Captain Designation form (OPNAV 4790/158) (Figure 10.14-1), or ASM equivalent.

10.14.4 Responsibilities

10.14.4.1 Wings or MAWs and D-level FRCs:

a. Publish a standard plane captain training syllabus for initial designation and refresher training to include lesson guides and practical and written examinations for the T/M/S aircraft, for which they are responsible. Personnel Qualification Standards (PQS), Maintenance Training Management and Evaluation Program (MATMEPs), or D-level specific prerequisites (when available) shall be integrated into the training syllabus. The training syllabus and testing requirements shall be sufficient to ensure plane captains are knowledgeable and skilled in their duties. The Plane Captain Training Syllabus Topics (Figure 10.14-2) provides guidance on the areas to be covered for initial designation. The Plane Captain Refresher Training Syllabus (Figure 10.14-3) provides an example of a refresher training syllabus.

b. Verify the training syllabus and related forms are available in ASM.

10.14.4.2 Commanding Officer (CO):

a. Establish a Plane Captain Selection Board, chaired by the Maintenance Officer (MO), consisting of the Quality Assurance Plane Captain Program Monitor, Plane Captain Branch Supervisor, Plane Captain Program Manager, Squadron Safety Officer, and others as deemed necessary.

b. Designate plane captains, in writing, using the Plane Captain Designation (OPNAV 4790/158) (Figure 10.14-1) or ASM equivalent.

c. Revoke designations of plane captains who display a disregard for safety or aircraft maintenance/handling procedures. Designations shall only be reinstated after the individual has completed the requirements of paragraph 10.14.3.3d.

NOTE: In squadrons that employ contractors to perform plane captain duties, the Contractor Site Manager, when assigned, shall designate qualified contractor plane captains, in writing, using the Plane Captain Designation form (OPNAV 4790/158) (Figure 10.14-1) or a locally generated designation form that specifies the procedures and board members required by the contract. The Contractor Site Manager shall not delegate this authority.

d. The CO may delegate authority to the MO to designate, revoke, and requalify plane captains. COs of squadrons that deploy detachments, in excess of 90 days, may delegate authority to the Detachment Officer in Charge (OINC) to designate, revoke, and requalify plane captains while deployed, if all training, testing, and board requirements can be accomplished by the detachment. Delegation of authority must be made, in writing, by name, to each MO or Detachment OINC.

10.14.4.3 Maintenance Officer (MO):

a. Designate the Line or Power Line Division Officer or D-level equivalent as the Plane Captain Qualification Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing. Commands that use aircrewmembers to perform plane captain duties may designate the Aircrew Division Officer as the Plane Captain Qualification Program Manager.

b. Develop local command procedures (LCPs) per Appendix D, if required to direct geographic, T/M/S specific, or command directed actions for plane captain training and designation not addressed in this NAMPSOP. Command LCPs shall be submitted to the Wing or MAW for consideration in developing a Wing LCP.

c. Chair the Plane Captain Selection Board. The board shall personally review training documentation and interview plane captain candidates. The interview shall cover all areas of the T/M/S Plane Captain Training Syllabus to verify candidates are fully qualified.

d. Recommend revocation of Plane Captain Designations to the CO.

NOTE: MO is equivalent to Aircraft Maintenance Officer for the Marine Corps and the person(s) performing specific MO duties for the D-level activities.

10.14.4.4 Plane Captain Qualification Program Manager:

NOTE: Upon designation as Program Manager, an assessment shall be performed within 30 days and annually thereafter per paragraph 10.7.4.8.

a. Be knowledgeable of references listed in paragraph 10.14.1, maintenance technical manuals, and this instruction.

b. Conduct the Plane Captain Training Program per the Wing or MAW syllabus.

c. Assign a designated plane captain to each trainee. The designated plane captain shall serve as an instructor and supervisor for the trainee and is responsible for ensuring each element of the training syllabus is thoroughly covered.

d. Initiate the Plane Captain Designation (OPNAV 4790/158) (Figure 10.14-1), or ASM equivalent, and request a Plane Captain Selection Board once the trainee has completed all training requirements, passed the written and practical examinations, and is deemed fully prepared and capable of assuming the responsibilities of a plane captain. D-level civilian personnel shall have a separate Plane Captain Designation (OPNAV 4790/158), or ASM equivalent, designation filed in their IQR for each T/M/S aircraft designated.

e. Verify designated plane captains assigned away from plane captain duties for over 90 days, for example, TAD, convalescent leave, or other special assignment away from the activity, receive refresher training (Figure 10.14-3) and are interviewed prior to resuming plane captain duties.

f. Restrict personnel from plane captain duties, if they have not performed plane captain duties for over 90 days, are overdue, or fail their semi-annual Quality Assurance (QA) Plane Captain Monitor.

NOTE: Plane captains that are out of currency shall be placed “Not in Use” in ASM. The working copy of the MMP will be updated, and the plane captain’s SMQs removed from OOMA. Once the requirements for requalification have been completed, update the ASM and MMP and reinstate SMQs.

g. Monitor the number of personnel under instruction to compensate for plane captain attrition.

h. Review CSEC reports (provided by the Program Monitor) to identify areas of concern and take corrective action to improve the program.

i. Verify the MMP lists all currently designated plane captains and the due date of their next semi-annual monitor.

j. Maintain a program file to include:

- (1) POCs.
- (2) Program related correspondence and message traffic.
- (3) References or cross-reference locator sheets.
- (4) Most current CSEC assessment checklist.

10.14.4.5 Quality Assurance (QA) Officer:

Designate a QAR as Plane Captain Qualification Program Monitor. Designation will be in writing via the MMP or SME listing. The QAR, designated as the Program Monitor, shall be currently qualified as a plane captain. Commands that utilize naval aircrewmembers to perform plane captain functions may assign a NATOPS Instructor, Assistant NATOPS Instructor, or Instructor Flight Engineer as the Plane Captain Qualification Program Monitor. Other QARs may audit or provide oversight for the program, but the overall responsibility remains with the Program Monitor.

NOTE: The requirement for the Quality Assurance Plane Captain Qualification Program Monitor to be a currently qualified plane captain does not apply to D-level activities.

10.14.4.6 Plane Captain Program Monitor:

- a. Perform audits per paragraph 10.7.
- b. Administer written and practical examinations (utilizing the CSEC 5700 checklist) for plane captain designation and requalification. Passing score on the written examination is 90%.

- c. Schedule and verify plane captains and naval aircrewmembers (qualified per [paragraph 10.14.3](#)) receive a semi-annual monitor.
- d. Notify the Plane Captain Qualification Program Manager when plane captains are not current or fail their semi-annual monitor.
- e. Verify the CSEC 5700 periodic checklist is utilized for semi-annual monitors, and monitors are entered into the CSEC database. The semi-annual monitors shall be documented and routed through QA for follow-up action. Program Monitors shall be retained, at a minimum, one full year on file.

10.14.4.7 Plane Captains:

- a. Maintain currency and practical proficiency in all areas covered in the plane captain training syllabus.
- b. Closely supervise the training of assigned plane captain trainees.

NOTE: During the training cycle, responsibility for conducting and signing off inspections lies with the designated plane captain.

COMNAVAIRFORINST 4790.2C
15 Jan 2017

OPNAVINST 4790.2 (Series)
COMNAVAIRFORINST 4790.2 (Series)

PLANE CAPTAIN DESIGNATION			
PART I			
1. NAME - LAST, FIRST, MIDDLE INITIAL:		2. RATE/GRADE:	3. DEPARTMENT/DIVISION:
4. AIRCRAT TYPE MODEL/SERIES:		5. TYPE DESIGNATION: <input type="checkbox"/> INITIAL DESIGNATION <input type="checkbox"/> REQUALIFICATION	
6a. DATE OF WRITTEN EXAM:	6b. GRADE:	7a. DATE OF PRACTICAL EXAM:	7b. GRADE:
PART II			
I certify that I understand my responsibilities as set forth in the current COMNAVAIRFORINST 4790.2 (Series).			
8a. PRINTED NAME OF MEMBER:		8b. SIGNATURE DATE:	8c. SIGNATURE OF MEMBER:
9a. PRINTED NAME OF OFFICIAL RECOMMENDING DESIGNATION:		9b. SIGNATURE DATE:	9c. SIGNATURE OF OFFICIAL RECOMMENDING DESIGNATION:
PART III			
Candidate has appeared before the Plane Captain Selection Board, and is fully qualified and recommended for designation as a Plane Captain.			
10a. PRINTED NAME OF QUALITY ASSURANCE PLANE CAPTAIN PROGRAM MONITOR:		10b. SIGNATURE DATE:	10c. SIGNATURE OF QUALITY ASSURANCE PLANE CAPTAIN PROGRAM MONITOR:
11a. PRINTED NAME OF PLANE CAPTAIN BRANCH SUPERVISOR:		11b. SIGNATURE DATE:	11c. SIGNATURE OF PLANE CAPTAIN BRANCH SUPERVISOR:
12a. PRINTED NAME OF PLANE CAPTAIN QUALIFICATION PROGRAM MANAGER:		12b. SIGNATURE DATE:	12c. SIGNATURE OF PLANE CAPTAIN QUALIFICATION PROGRAM MANAGER:
13a. PRINTED NAME OF SAFETY OFFICER:		13b. SIGNATURE DATE:	13c. SIGNATURE OF SAFETY OFFICER:
14a. PRINTED NAME OF MAINTENANCE OFFICER:		14b. SIGNATURE DATE:	14c. SIGNATURE OF MAINTENANCE OFFICER:
PART IV			
DESIGNATED AS A PLANE CAPTAIN EFFECTIVE THIS DATE.			
15a. PRINTED NAME OF COMMANDING OFFICER:		15b. SIGNATURE DATE:	15c. SIGNATURE OF COMMANDING OFFICER:
PART V			
DESIGNATION HAS BEEN ENTERED IN THE MEMBERS' SERVICE RECORD.			
16a. PRINTED NAME OF MILITARY PERSONNEL OFFICER:		16b. SIGNATURE DATE:	16c. SIGNATURE OF MILITARY PERSONNEL OFFICER:
ORIGINAL TO: Individual's Qualification/Certification Record.			

OPNAV 4790/158 (Rev 08/2016)

Figure 10.14-1: Plane Captain Designation (OPNAV 4790/158) (Sample)

PLANE CAPTAIN TRAINING SYLLABUS TOPICS

1. Indoctrination interview
2. Required reading (applicable sections)
 - a. COMNAVAIRFORINST 4790.2C
 - b. NAVAIR 00-80T-105, CV NATOPS Manual
 - c. NAVAIR 00-80T-106, LHA/LHD NATOPS Manual
 - d. NAVAIR 00-80T-113, Aircraft Signals NATOPS Manual
 - e. NAVAIR 00-80T-122, Helicopter Operating Procedures for Air-Capable Ships NATOPS Manual
 - f. NAVAIR 01-1A-17 Aviation Hydraulics Manual
 - g. NAVAIR 01-1A-509 (series), Cleaning and Corrosion Control
 - h. NAVAIR 04-10-506, Aircraft Tire and Tubes
 - i. NAVAIR 17-1-125, Support Equipment Cleaning, Prevention and Corrosion Control
3. Safety Ashore and Afloat PQS
4. Flight Deck Familiarization
5. Egress/Explosive System Checkout Program
6. Flight Line/Flight Deck Safety
7. Noise Hazards
8. Exhaust Blast Hazards
9. Propeller or Rotor Hazards
10. Tire and Wheel Maintenance Safety Program
11. General or Avionics Corrosion Control Course
12. FOD Prevention Program
13. Tool Control Program
14. Fuel Surveillance Program
15. Navy Oil Analysis and Consumption Monitoring Program
16. Hydraulic Contamination Control Program
17. Hazardous Material Control and Management Program
18. Technical Publications
19. 3M Documentation
20. Support Equipment Operator Training and Licensing Program
21. Fire Fighting Procedures and Responsibilities
22. Moving Aircraft
23. Towing Aircraft
24. Brake Riding
25. Cleaning Aircraft
26. Aircraft Preservation
27. Duct Diving
28. Aircraft Fastener Integrity Inspection
29. Daily and Turnaround Inspections
30. Special Inspections
31. Conditional Inspections
32. Fueling and Defueling
33. Nitrogen System Servicing
34. Hydraulic System Servicing
35. Engine/Transmission Oil System Servicing
36. Liquid Oxygen Converter Handling Safety
37. Aircraft Ordnance
38. CADs
39. T/M/S NATOPS Procedures
40. Hand Signals
41. Launch/Recovery Procedures
42. Hot Brake Procedures
43. Aircraft Alert Posture Procedures
44. Flight Controls
45. Cockpit Instrumentation
46. Support Equipment Misuse and Abuse
47. T/M/S Standard Emergency Procedures
48. T/M/S PQS (if applicable)
49. Aircraft security, tie-down, and heavy weather procedures
50. Aircraft ordnance and armament equipment

Figure 10.14-2: Plane Captain Training Syllabus Topics

PLANE CAPTAIN REFRESHER TRAINING SYLLABUS

Plane Captain Name: _____	Rate/Rank: _____	Date _____
1. Egress/Explosive System Checkout	AME Supervisor _____	Date _____
2. Review Danger Areas	P/C Supervisor _____	Date _____
3. Review Brake Rider Qualifications	P/C Supervisor _____	Date _____
4. Review Duct Diver Qualifications	P/C Supervisor _____	Date _____
5. Review Emergency Procedures	P/C Supervisor _____	Date _____
6. Review Lox Converter Qualifications	P/C Supervisor _____	Date _____
7. Review Oil System Servicing Procedures	P/C Supervisor _____	Date _____
8. Review Hydraulic System Servicing System	P/C Supervisor _____	Date _____
9. Review Aircraft Refueling Procedures	P/C Supervisor _____	Date _____
10. Perform Walkaround	P/C Supervisor _____	Date _____
11. Launch Aircraft	P/C Supervisor _____	Date _____
12. Recover Aircraft	P/C Supervisor _____	Date _____
13. Quality Assurance Monitor	P/C Supervisor _____	Date _____
14. Aircraft Ordnance	P/C Supervisor _____	Date _____
15. Fuel Sampling Procedures	P/C Supervisor _____	Date _____

Plane Captain Branch Supervisor Signature Date

Line/Power Line Division Officer Interviewer Signature Date

Figure 10.14-3: Plane Captain Refresher Training Syllabus

10.15 Egress/Explosive System Checkout Program (NAMPSOP)

10.15.1 References

a. OPNAVINST 8023.24, Navy Personnel Conventional Ammunition and Explosives Handling Qualification and Certification Program.

b. MCO 8023.3, Personnel Qualification and Certification Program for Class V Ammunition and Explosives.

10.15.2 Introduction

10.15.2.1 The Egress/Explosive Systems Checkout Program outlines requirements and responsibilities for training personnel on the dangers of aircraft installed egress and explosive systems. All Navy and Marine Corps activities, commercial and other government activities that perform on and off aircraft or equipment maintenance or other support functions on naval aircraft or Unmanned Aircraft Systems (UAS) with egress/explosive systems must comply with the Egress/Explosive Systems Checkout Program.

NOTE: The training requirements of this NAMPSOP are separate from and do not satisfy the requirements for Ordnance Certification specified in OPNAVINST 8023.24 and MCO 8023.3.

10.15.2.2 Egress systems include ejection seats and related interconnect and sequence systems, installed parachute and seat survival kits, explosive devices and rocket motors used in seat propulsion, and hatches or canopies, which are shattered or jettisoned from the aircraft by use of explosive devices.

10.15.2.3 Explosive systems include explosive actuated components installed on the aircraft and their operationally adjacent mechanisms, for example, cartridge actuated device (CADs), propellant actuated device (PADs), and explosive actuated fire bottles.

10.15.2.4 The In-Service Support Center (ISSC) for CADs and PADs is COMMANDING OFFICER, NAVAL SURFACE WARFARE CENTER INDIAN HEAD DIVISION (Code E-22 and E-21 respectively), 4393 BENSON ROAD, SUITE 120 INDIAN HEAD, MD 20640-5092, DSN 354-4203/2101 or COMM (301) 744-4203/2101.

10.15.2.5 The ISSC for ejection seats is COMMANDING OFFICER, FLEET READINESS CENTER EAST, PSC BOX 8021, CHERRY POINT NC 28533-0021, DSN 451-8553 or COMM (252) 464-8553.

10.15.3 Requirements

10.15.3.1 All maintenance personnel assigned to or assisting activities operating aircraft with egress/explosive systems must receive initial Egress/Explosive Systems Checkout training on each type/model/series (T/M/S) aircraft/equipment before coming in contact with or performing maintenance on aircraft.

NOTES: 1. To facilitate cross organizational assistance, Egress/Explosive Systems Checkout Qualification for a specific T/M/S is valid at all units within the same Wing or Marine Aircraft Wing (MAW), until transfer or expiration.

2. No visitors to a command operating or maintaining aircraft, whether military, civilian, contractor, or general public, will be permitted to enter the cockpit area without prior approval from the Commanding Officer (CO).

10.15.3.2 Requalification training is required every 6 months, no later than the last day of the requalification month. For example, personnel initially qualified or last requalified on 10 January must complete requalification training no later than 31 July.

NOTE: Maintenance Department personnel on Temporary Additional Duty (TAD) outside the Maintenance Department for over 90 days must complete requalification training prior to resuming Maintenance Department duties.

10.15.3.3 Prior to coming into contact with or starting maintenance on aircraft or equipment, government service and contractor personnel providing on-site assistance must receive Egress/Explosive Systems Checkout training from the activity being assisted, regardless of checkout training received from other activities. Training must be documented on the Egress/Explosive Systems Checkout Qualification form (Figure 10.15-1) and given to the Program Manager to maintain on file.

10.15.3.4 Aircraft hangar, line, and security watch personnel, regardless of rate or Military Occupational Specialty (MOS), must receive Egress/Explosive Systems Checkout training and be requalified every 6 months.

10.15.3.5 Initial training and requalification will be documented on the Egress/Explosive Systems Checkout Qualification form (Figure 10.15-1) and filed in the individual's qualification/certification record. Commands using ASM will file the completion certificate under formal courses.

10.15.3.6 Egress/Explosive Systems Checkout Training must be conducted by qualified and designated instructors. Requirements:

a. Instructors must complete training and be designated in writing by the Maintenance Officer (MO), on an Egress/Explosive Systems Checkout Instructor Designation form (Figure 10.15-2) or Advanced Skills Management (ASM) equivalent.

b. Instructors must have the T/M/S 83XX Navy Enlisted Classification (NEC) or Marine MOS equivalent, be currently Egress/Explosive Systems Checkout trained, and be T/M/S Ordnance certified per OPNAVINST 8023.24 and MCO 8023.3.

c. Instructors for ejection seat equipped aircraft must be a qualified Aviation Structural Mechanic Egress (AME) or MOS 628X.

d. Instructors for non-ejection seat equipped aircraft will be AME, Aircrew Survival Equipmentman (PR), Aviation Ordnanceman (AO), or Marine MOS equivalents.

NOTE: Squadrons that deploy detachments of non-ejection seat aircraft under the detachment or home guard concept may designate Aviation Electronics Technician (AT) or Aviation Electrician's Mate (AE) rate personnel as Egress/Explosive Systems Checkout Training Instructors for detachment personnel, if there are no AME, PR, or AO personnel assigned to the detachment during the deployment period.

e. Egress/Explosive Systems Checkout Instructor designation is only valid for the issuing command. A new designation is required upon transfer to another command, regardless of T/M/S aircraft operated.

NOTE: Squadrons receiving aircraft with fundamental changes in egress/explosives systems (for example, changing from the SJU-5 Ejection Seat to the SJU-17 ejection seat) must qualify one initial instructor on the new system. The initial instructor will qualify other instructors, who will then train all other personnel prior to permitting them to perform maintenance on the aircraft.

10.15.3.7 An Egress/Explosive Systems Checkout Training Syllabus is required for each T/M/S aircraft maintained. The syllabus must include the following elements (as applicable):

a. Entry into the cockpit, to include ladder or hatch systems.

- b. Procedures to safely operate the aircraft canopy system.
- c. Explosive devices for aircraft installed and personally worn ALSS.
- d. General rules, hazards, and safety precautions while working in or around ejection seats.
- e. General rules, hazards, and safety precautions for canopy jettison or fracturing systems.
- f. Parachute deployment.
- g. Fire extinguishers and fire extinguishing systems.
- h. Deployable Flight Incident Recorder System.
- i. Helicopter Emergency Flotation System.
- j. Dry Bay Fire Suppression System.
- k. Cable cutting systems.

NOTES: 1. Training must be conducted on the aircraft and equipment maintained. The use of mock-ups and lectures only is not sufficient.

2. The training syllabus must include Egress or Explosive Systems web based training or Interactive Multimedia Instruction (IMI), if applicable to the T/M/S aircraft or equipment maintained. If applicable, web based or IMI training is required for initial Egress/Explosive Systems Checkout Training, only, and does not have to be repeated for requalification training. Commands using ASM will file the electronic completion certificate under formal courses.

3. CAD/PAD Safety and Process Training is available at <https://cadpad.navair.navy.mil>.

10.15.4 Responsibilities

10.15.4.1 Type Wings or Marine Aircraft Wing (MAW) T/M/S Model Managers:

Must publish a local command procedure (LCP) per [Appendix D](#), listing each T/M/S aircraft assigned. At a minimum, the LCP will include:

- a. Egress/Explosive Systems Checkout Training Syllabus per [paragraph 10.15.3.7](#).
- b. Egress/Explosive Systems Checkout Qualification ([Figure 10.15-1](#)).
- c. Egress/Explosive Systems Instructor Designation ([Figure 10.15-2](#)).

NOTES: 1. The Egress/Explosive Systems Checkout Qualification ([Figure 10.15-1](#)) and Egress/Explosive Systems Instructor Designation ([Figure 10.15-2](#)) list the minimum training requirements. Five OJT sessions are the minimum required for instructors.

2. Squadrons not assigned to a Wing or MAW T/M/S Model Manager must publish their own LCP with the above elements, as a minimum.

10.15.4.2 Maintenance Officer (MO):

a. Designate an Egress/Explosives Systems Checkout Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or the Subject Matter Expert (SME) listing. Program Manager qualifications are:

- (1) Must be a designated Egress/Explosives Systems Checkout Instructor.
- (2) Squadrons operating ejection seat equipped aircraft must designate the Work Center 13B Supervisor.
- (3) Squadrons with non-ejection seat equipped aircraft and no AME or MOS equivalent assigned must designate a Navy PR, AO, or Marine MOS 6048/6531 that is T/M/S ordnance certified per OPNAVINST 8023.24 and MCO 8023.3.

b. Designate Egress/Explosive Systems Checkout Instructors per [paragraph 10.15.3.6](#).

c. Develop an LCP per [Appendix D](#), if required to direct geographic, T/M/S specific, or command directed actions for Egress/Explosive Systems Checkout not addressed in this NAMPSOP. Command LCPs will be submitted to the Wing or MAW for consideration of incorporation into the Wing LCP.

10.15.4.3 Program Manager:

a. Perform an assessment within 30 days of designation as Program Manager and annually thereafter, per the procedures of the NAMP Compliance Auditing Program [paragraph 10.7](#).

b. Remain current on T/M/S aircraft Egress/Explosive Systems safety procedures and precautions specified in maintenance technical manuals.

c. Suspend instructors past due for requalification from administering checkouts. Document suspension in the MMP and update the instructor's qualification/certification record or ASM equivalent.

d. Notify the Wing or MAW T/M/S Model Manager of any deficiencies in the Egress/Explosive Systems Checkout Training Syllabus.

e. Maintain a copy (until expired) of the Egress/Explosive Systems Checkout Qualification ([Figure 10.15-1](#)) for government service and contractor personnel that provided on-site assistance for squadron aircraft.

f. Provide the MMP listing of personnel coming due for requalification training during the month, including TAD personnel with their TAD start date.

g. Monitor completion of requalification training and notify Work Center Supervisors of personnel past-due for requalification.

h. Review Program Audit discrepancies and take action to improve the program.

i. Maintain a program file to include:

- (1) POCs.
- (2) Copy of the Wing or MAW T/M/S Model Manager and Squadron LCP (as applicable).
- (3) Program correspondence and messages.
- (4) References or cross-reference locator sheets.
- (5) Most current CSEC assessment.
- (6) (Non-ASM commands) Copies of Egress/Explosive Systems Checkout Qualification forms.

10.15.4.4 Quality Assurance (QA) Officer:

Designate a Quality Assurance Representative (QAR) as the Egress/Explosive Systems Checkout Program Monitor. Designation will be in writing via the MMP or SME listing.

NOTE: D-level QA Officers or Directors may designate a Quality Manager as the Program Monitor. Quality Assurance Specialists shall audit the program.

10.15.4.5 QA Program Monitor:

Perform audits per the procedures of the NAMP Compliance Auditing Program [paragraph 10.7](#).

10.15.4.6 QARs:

Ensure government personnel and contractors from other activities that are providing onsite assistance with aircraft or equipment maintenance receive T/M/S Egress/Explosive Systems Checkout training prior to permitting them to come in contact with or starting maintenance on aircraft or equipment.

10.15.4.7 Aircraft Division Officer:

Coordinate the Egress/Explosive Systems Checkout training of aircrew personnel.

10.15.4.8 Egress/Explosive Systems Checkout Instructors:

- a. Perform the Egress/Explosive Systems Checkout qualification or requalification training specified in the training syllabus.
- b. Sign off the Egress/Explosive Systems Checkout Qualification ([Figure 10.15-1](#)) only after personnel demonstrate they are fully knowledgeable and skilled in egress and explosive systems procedures.

10.15.4.9 Work Center Supervisors:

- a. Verify Egress/Explosive Systems Checkout Qualification is current, prior to assigning personnel to work on or around aircraft.

NOTE: Personnel TAD outside the Maintenance Department for over 90 days must be requalified prior to resuming Maintenance Department duties.

- b. File the Egress/Explosive Systems Checkout Qualification ([Figure 10.15-1](#)) in the individual's qualification/certification record or ASM equivalent. D-level activities will enter the certification completion date in their locally approved T/M/S.
- c. Recommend personnel for designation as Egress/Explosive Systems Checkout Instructors.

EGRESS/EXPLOSIVE SYSTEMS CHECKOUT QUALIFICATION

Name (Last, First, MI)	Rate/Rank	Activity
1. Trainee acknowledgement: I have read and understand Egress/Explosive Systems Checkout Program directives and received training on how to safely perform aircraft maintenance around a canopy, ejection seats, cockpit areas, and installed explosive systems for the (T/M/S) aircraft.		
Member's Signature	Date	

2. Instructor certification: The above named individual has received Egress/Explosive Systems Checkout per COMNAVAIRFORINST 4790.2.

INSTRUCTOR (PRINT AND SIGN NAME)	ACTIVITY	DATE COMPLETED	MONTH NEXT DUE

Figure 10.15-1: Egress/Explosive Systems Checkout Qualification (Example)

EGRESS/EXPLOSIVE SYSTEMS CHECKOUT INSTRUCTOR DESIGNATION

1. I, _____, fully understand my responsibilities as an
(Name) (Rate/Rank)
Egress/Explosive Systems Checkout Instructor for _____ aircraft in _____
(T/M/S) Activity

Signature: _____

2. The above named individual has completed the following:

a. Required Reading.

Egress/Explosive Systems Checkout
Program (NAMPSOP)

Signature

Date

Maintenance technical
manuals

Signature

Date

b. OJT performed under the direct supervision of the Program Manager.

Signature

Date

1. _____

2. _____

3. _____

4. _____

5. _____

3. Recommended

Egress/Explosive Systems Program Manager

Date

4. Recommended

Aircraft Division Officer Signature

Date

5. Designated

Maintenance Officer Signature

Date

Figure 10.15-2: Egress/Explosive Systems Checkout Instructor Designation (Example)

10.16 Support Equipment (SE) Operator Training and Licensing Program (NAMPSOP)

10.16.1 References

- a. NAVAIR 00-80T-96 CH-1, US Navy Support Equipment Common Basic Handling & Safety Manual.
- b. NAVSEA SW023-AH-WHM-010, Handling of Ammunition and Explosives with Industrial Material Handling Equipment.
- c. NAVAIR 00-80T-119, NAVAIR Weight Handling Support Equipment.
- d. NAVSEA SW020-AF-HBK-010, Motor Vehicle Driver's and Shipping Inspector's Manual for Ammunition, Explosives and Related Hazardous Material.
- e. OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions.
- f. NAVAIR 00-80T-105, CV NATOPS Manual.
- g. OPNAVINST 4460.1B, Management of Material Handling Equipment (MHE) and Shipboard Mobile Support Equipment (SMSE).
- h. MCO P11240.106, Garrison Mobile Equipment.

NOTE: Forklift trucks are MHE, not SE. Refer to OPNAVINST 4460.1B and MCO P11240.106 for MHE guidance and training requirements. Refer to NAVSEA SW023-AH-WHM-010 for specific training requirements for personnel using MHE to handle ammunition and explosives.

10.16.2 Introduction

10.16.2.1 The Support Equipment (SE) Operator Training and Licensing Program outlines the minimum requirements for SE operator training and licensing.

10.16.2.2 SE operator training consists of two phases. Phase I training provides the operator with basic knowledge on operating, servicing, and inspecting each item of SE. Phase II is training and testing on operating SE for specific type/model/series (T/M/S) aircraft and equipment. Commands are responsible for certifying personnel have completed Phase I and II training and testing and are fully knowledgeable and skilled in SE operational, safety, and emergency procedures, before issuing a SE Operator's License ([Figure 10.16-1](#)).

NOTES: 1. D-level activities may have additional training requirements identified in their Training, Special Process Certification and Licensing Program.

2. Training and certification requirements for Gas Turbine Engine Test System (GTETS) and Global Test Facility (GTF) Operators are specified in the GTETS/GTF Operator Training and Designation Naval Aviation Maintenance Program Standard Operating Procedure (NAMPSOP), [paragraph 10.23](#).

10.16.3 Phase I SE Operator Training Requirements

10.16.3.1 Phase I SE operator training is conducted at I-level and D -level activities. Training for some models of SE can be completed via Navy Knowledge Online (NKO).

NOTE: Navy and Marine Corps SE Technicians that have completed the Phase I NEC or MOS Training Course Requirements ([Figure 10.16-6](#)) and are NEC or MOS certified, are not required to complete Phase I training for that specific SE. Scan a copy of the completed school certificate

into ASM, and notate the course information and completion date in the Phase I Section of SE License Certification.

10.16.3.2 Phase I training courses are produced and distributed by CNATT under the direction of NAVAIR (PMA-205). Training courses contain outlines, lesson guides, and training aids and can be accessed in Catalog of Naval Training Courses (CANTRAC), NAVEDTRA 10500, Volume II. Refer to the catalog for course number, description, and implementation date. All revisions are listed in the special information section.

NOTE: Licensing requirements are effective 90 days following release of a new Phase I course.

10.16.3.2.1 Requests for a training course can be forwarded by letter to: COMMANDING OFFICER, NAVAL AVIATION TECHNICAL TRAINING, 230 CHEVALIER AVE, STE C, PENSACOLA FL 32508-5168.

10.16.3.2.2 Recommendations concerning Phase I training courses can be forwarded via the chain of command to NAVAIR (PMA-205).

10.16.3.3 SE with one or more of the following characteristics that do not have a published CNATT, NATEC, or I-level training course, shall be evaluated by the supporting activity to determine if formal operator training and licensing is required:

- a. Internal combustion engine (gasoline, diesel, or gas turbine).
- b. Input/output voltages greater than 115 volts of alternating current.
- c. Input/output voltages greater than 28 volts of direct current.
- d. Input/output pressures greater than 100 pounds per square inch (PSI).
- e. Output temperatures greater than 150 degrees.
- f. Manually operated SE that is highly hazardous in its operation and requires a specific, critical sequence of events to prevent injury to personnel or damage to aircraft and equipment.

10.16.3.4 Activities must develop a local Phase I training course based on the Phase I Training Outline (Figure 10.16-5) if an item of SE does not have a CNATT course. Locally prepared Phase I training courses shall be forwarded to NAVAIR (PMA-205) via the ACC to determine if the SE needs to be added to the list of Equipment Requiring an SE Operator's License (Figure 10.16-2).

10.16.3.5 The activity providing Phase I training will document completion in the Phase I section of the SE License Certification (Figure 10.16-4). Phase I training completed via NKO will be documented by annotating "See attached NKO certificate" in the Division Officer signature block and attaching a copy of the NKO completion certificate.

10.16.3.6 Phase I instructors must be designated in writing, paygrade E-5 and above or civilian subject matter expert, trained in instructional techniques, and licensed on the SE for which they provide training.

10.16.4 Phase II SE Operator Training Requirements

10.16.4.1 Phase II SE Operator training provides advanced training and testing on specific T/M/S aircraft and equipment maintenance tasks that require the use of SE.

10.16.4.2 A Phase II training syllabus, based on SE License Certification (Figure 10.16-4), is required for each item of SE. Phase II training consists of required reading, a minimum of three on the job training (OJT) sessions, and practical and written examinations. Type Wing and MAW SE Training and Licensing Program Managers coordinate development of Phase II written exams covering equipment operating procedures, safety precautions, emergency procedures, and on aircraft interface or operations.

10.16.4.2.1 Personnel providing OJT sessions shall not sign off a training session unless the individual received hands on training in each of the OJT elements and demonstrates satisfactory knowledge and skill.

NOTES: 1. Weight handling equipment (WHE) requirements are in NAVAIR 00-80T-119 (as applicable).

2. Hand signals requirements are in NAVAIR 00-80T-96, NAVAIR 00-80T-119, and OPNAVINST 3710.7 (as applicable).

3. Personal Protective Equipment (PPE) training will be included in each OJT session.

10.16.4.2.2 A licensed operator shall administer the Phase II practical examination. Quality Assurance (QA) shall administer the Phase II written examination (passing grade is 85 percent).

NOTE: Personnel who fail either the practical or the written examination must receive additional Phase II OJT before being retested. Activities may also direct personnel to repeat the Phase I training, if deemed necessary.

10.16.4.3 Phase II training is required for each item of SE licensed to operate. Phase II training on one model is sufficient to license an individual on all model variations of the same type equipment taught in the same course of instruction, for example, NC-10A/B/C Shore MEPP. Training, examination, and certification shall be documented on the Phase II Section of the SE License Certification (Figure 10.16-4).

NOTES: 1. Personnel assigned to Air Departments aboard CV and L-class ships are required to document Phase II SE training for only one T/M/S aircraft. Aircraft hookup shall be performed by a licensed plane captain for the T/M/S aircraft under tow.

2. Due to the various types of transient aircraft serviced by OMD Transient Lines, transient line personnel are required to document Phase II SE training for only one T/M/S aircraft. An SE license issued for transient aircraft support is limited to launch, recovery, servicing, and handling operations.

10.16.4.4 Phase II training for new types or models of SE can be provided by NATEC and NAVAIR engineers, and original equipment manufacturing (OEM) representatives. Activities shall issue a certificate to formally document the training provided. The certificate of training shall be retained in the trainee's training records or ASM as a permanent record and proof of certification. A practical and written examination for initial stand-up training qualifier for new SE is not required. The MO must designate the initial qualifier in writing. Once the initial qualifier is licensed, all subsequent personnel must complete Phase II OJT and practical and written examination to qualify for an operator's license.

10.16.4.5 Some CNATTU and Center for Naval Aviation Technical Training Marine Unit (CNATTMARU) Aviation Maintenance Training (AMT) courses include hands-on training in the operation of SE on aircraft and equipment. Completion of SE training during AMT will only be documented when a trainee successfully hooks-up and operates the specific item of SE on the aircraft or equipment during a practical job training (PJT) session. If SE training is conducted in the AMT training track, the CNATTU or CNATTMARU will prepare a completion certificate for each trainee and forward it to the trainee's permanent activity.

NOTE: CNATTU or CNATTMARU require OPNAV (N98) approval to perform on-aircraft and equipment SE training.

10.16.4.6 Activities from other U.S. service branches and foreign military activities requiring SE from United States Navy (USN) or United States Marine Corps (USMC) activities shall meet minimum proficiency requirements as defined by the host I-level or D-level activity providing the SE. At the discretion of the host I-level or D-level activity, this may encompass the entire Phase I and Phase II training and qualification process. At a minimum, proficiency in safety procedures and the principles of equipment operation for each item of SE shall be satisfactorily demonstrated to licensed host personnel prior to independent use of SE by other U.S. service branches or visiting foreign militaries. In cases where other U.S. service branches or foreign military operate a T/M/S aircraft not commonly supported by the host station, the proficiency demonstration (with emphasis on safety requirements) shall include licensed personnel from the hosting activity observing on aircraft use for each item of SE. The MO of the hosting activity must expressly designate, by equipment type and name, those other U.S. service branch and foreign militaries personnel approved to operate SE under the provisions of this paragraph.

10.16.5 Licensing Requirements

10.16.5.1 All military and civilian personnel who operate SE require a USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Figure 10.16-1). Refer to the List of Equipment Requiring an SE Operator's License (Figure 10.16-2).

NOTES: 1. Completion of Phase I and Phase II training and testing is mandatory to qualify for an SE Operator's License.

2. The SE operator's license shall be annotated, certified, and initialed by the issuing activity prior to allowing personnel to operate SE without supervision by a licensed operator.

3. A valid driver's license issued by a U.S. Government or DOD agency or State is a prerequisite for issuing an SE operator's license for self-propelled SE.

4. NATEC or NAVAIR engineering and OEM subject matter experts (SME) that provide initial training for new or newly modified SE do not require an SE operator's license.

10.16.5.2 SE operator's licenses are valid for type equipment and T/M/S aircraft for 3 years. License renewal requires passing the Phase II practical and written examinations.

NOTES: 1. If an activity elects to honor a current SE operator's license issued by another activity, the operator must pass the Phase II practical and written examinations. Examination results shall be annotated on the SE License Certification (Figure 10.16-4) prior to allowing personnel to operate SE.

2. Transfer to an activity operating the same type/model aircraft, but a different series, requires the operator to pass the Phase II practical and written examination and receive a new SE operator's license.

3. Personnel who fail the practical or written examination during verification of proficiency or renewal testing must repeat the entire Phase II training and testing syllabus. Activities may also direct personnel to repeat Phase I training, if deemed necessary.

10.16.5.3 An expired, revoked, or suspended driver's license cancels authorization to operate self-propelled SE. State driver's license extension policies are listed on [Share portal](#).

10.16.5.4 If authorization to operate an item of SE is revoked, the individual must pass the Phase II practical examination and written test, before their SE operator's license is reinstated. Activities may also direct personnel to repeat Phase I training, if deemed necessary.

10.16.5.5 Documentation procedures for the USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Figure 10.16-1) are as follows:

NOTES: 1. Dates shall be in alphanumeric DD/MMM/YY format, for example, 15 MAY 16.

2. Corrections shall be made by drawing a single line through each erroneous entry and inserting the correct entry above or below as space permits. Corrective tape and correction fluid are not authorized.

Block 3. (Date Expires). Enter "NA".

Block 4. (U.S. Government, DOD agency, or State driver's license). If license has self-propelled SE, list the operator's State, U.S. Government, or DOD agency driver's license number, name of the issuing State or U.S. Government or DOD agency, and expiration date. If the State permits an automatic extension and the licensee meets extension requirements, type "AUTO EXT" above the expiration date.

Block 5. (Issuing Activity). Enter name and location of issuing activity.

Block 6. (Signature of Licensee). Enter operator's signature.

Block 7. (Issued By). Enter MOs signature (for delegation authority, refer to [paragraph 10.16.6.1c](#)).

Block 8A. (Type Equipment Qualified For). Entries must have specific equipment identification number, for example, A/S32A-31B. Licenses containing general entries, for example, mobile electric power plants or powered bomb hoists are not valid. Only one item of SE shall be listed per line, unless items are model variations of the same type equipment and taught in the same course of instruction, for example, NC-10A/B/C Shore MEPP. Entries certifying engine test system operation shall contain the test system and type engine.

Block 8B. (Expiration Date). List the expiration date for each item of SE. Expiration dates shall be three years from the date of the Phase II written examination.

Block 8C. (Certified By). The MO shall initial this block (for delegation authority, refer to [paragraph 10.16.6.1c](#)).

Block 9. (Restrictions). Restrictions shall be annotated as follows:

a. Specify T/M/S aircraft personnel are certified to operate SE by annotating "For T/M/S Aircraft Only" or "Restricted to Non-Aircraft Use."

NOTE: Due to their commonality, personnel trained on the SH-60B or MH-60R may annotate Block 9 "For SH-60B/MH-60R use only." Personnel trained on the SH-60F, HH-60H or MH-60S may annotate Block 9 "For SH-60F/HH-60H/MH-60S use only."

b. Due to the various types of transient aircraft serviced by Operations Maintenance Division (OMDs), SE licenses for transient line personnel may be annotated "Transient Aircraft Use". An SE license issued for "Transient Aircraft Use" is limited to launch, recovery, servicing, and handling operations.

c. For transient line personnel, list the T/M/S of "Other Than Transient" aircraft the MO is certifying proficiency on.

d. Licenses issued to aircraft carrier (CV) or L-class ship Air Department personnel shall have "Flight/Hangar Deck Operations Only".

e. I-level personnel not operating equipment on aircraft shall have "Restricted to Non-Aircraft Use".

f. I-level personnel operating self-propelled mobile cranes for maintenance purposes only shall have "For Maintenance Only".

10.16.6 Responsibilities

10.16.6.1 Maintenance Officer (MO)

a. Designate the Assistant Maintenance Officer (AMO) (O-level) or SE Division Officer (I-level) as the SE Operator Training and Licensing Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP).

b. If needed, develop local command procedures (LCP) per [Appendix D](#) to specify additional procedures for SE Training and Licensing.

c. Sign and initial the USN Aviation Support Equipment Operator's License (OPNAV 4790/102) ([Figure 10.16-1](#)) or applicable ASM qualification as licensing official. This responsibility may be delegated in writing to AMO or a Detachment Officer In Charge (OINC) or Assistant OINC.

NOTE: For D-level activities, the CO may designate the appropriate licensing official. The licensing official shall also have the authority to revoke, suspend, or reinstate SE licenses per this NAMPSOP.

d. Process SE Misuse and Abuse Reports per [paragraph 7.6.2](#).

e. Revoke an SE operator's license when the operator:

(1) Displays unsafe operator habits or behavioral traits.

(2) Is involved in an accident or incident and the investigation determines negligence.

(3) Is cited for significant or recurring safety infractions.

(4) Loses on base driving privileges or their U.S. Government or DOD agency or State driver's license is revoked. (This applies to self-propelled equipment only.)

f. Suspend operator's license after an operator is involved in an accident or incident until investigation is complete and responsibility determined. Reinstate license if the operator is deemed "not at fault".

g. (I-level only) Provide Phase I SE training to command and tenant activity personnel requiring SE License Certification ([Figure 10.16-4](#)).

NOTE: For explosive handling equipment forklifts, the Weapons Officer is responsible for providing training that meets the requirements of NAVSEA SW023-AH-WHM-010.

10.16.6.2 Program Manager

10.16.6.2.1 General:

a. Perform program assessments per paragraph 10.7.

b. Maintain a program file to include:

(1) POCs.

(2) Program correspondence and message traffic.

(3) References or cross-reference locator sheets.

- (4) Most current CSEC assessment.

10.16.6.2.2 O-level AMO

- a. Manage the SE Training and Licensing Program.
- b. List SE licensed personnel in the MMP.
- c. Assist the Type Wing or MAW in developing standardized Phase II training and examination requirements.

NOTE: AMO is equivalent to Aircraft Maintenance Officer for the Marine Corps and the person(s) performing specific AMO duties for the D-level activities.

10.16.6.2.3 I-level SE Division Officer

- a. Manage the SE Training and Licensing Program.
- b. Designate Phase I instructors per [paragraph 10.16.3.6](#).
- c. Provide facilities for classroom and laboratory areas.
- d. Provide Phase I SE training to command and tenant activity personnel, for each end item of SE requiring an SE Operator's License ([Figure 10.16-1](#)).
- e. Publish a Phase I SE training schedule identifying the course, location, and time of instruction.
- f. On completion of Phase I SE training, sign and forward the SE License Certification ([Figure 10.16-4](#)) and forward it to the trainee's command.
- g. Develop Phase I training courses per [paragraph 10.16.3.6](#) for SE without a CNATT course.
- h. Coordinate with division to develop and publish job-specific Phase II training and testing requirements ([Figure 10.16-4](#)).

NOTES: 1. Requirements for WHE operators and personnel who operate WHE for maintenance purposes only are in NAVAIR 00-80T-119.

2. In maintenance activities where the MO is responsible for providing MHE training and licenses, the Program manager shall ensure training and testing meet all requirements of NAVSUP MHE 538 and MCO P11240.106.

- i. Notify user activities if a course update revision affects equipment operating procedures or requirements.
- j. Ensure personnel assigned to the SE operator pool on temporary additional duty (TAD) have completed Phase II training requirements for each T/M/S aircraft supported.

10.16.6.2.4 D-level FRC SE Program Manager

- a. Manage the SE Training and Licensing Program.
- b. Designate, in writing qualified Phase I instructors that are trained and capable in instructional techniques, E-5 or above, and licensed on each T/M/S aircraft or item of SE that training is conducted on.
- c. Provide facilities for classroom and laboratory areas.

d. Provide Phase I SE training listed on the SE Operator Training Request (Figure 10.16-3) or equivalent modified form, to command and tenant activity personnel, for each end item of SE on the List of Equipment Requiring an SE Operator's License (Figure 10.16-2) that the command operates or maintains.

e. Assist in developing requested Phase I training courses (using Figure 10.16-5) if not published by CENNAVAVNTECHTRA.

f. Assist in developing Phase II written examinations with the designated Division Officer or Training Management Office. Phase II requirements for WHE operators and personnel who operate WHE for maintenance purposes only are in NAVAIR 00-80T-119.

g. Notify user activities if a course update revision affects equipment operating procedures or requirements.

10.16.6.3 QA Representative (QAR):

a. Periodically monitor work in process to ensure only properly licensed personnel operate SE. Monitors shall include review of the expiration date of the individual's state/government/DOD agency driver's license for personnel operating self-propelled SE.

b. Administer Phase II written examinations and maintain a log of test scores identified as initial or renewal testing. A paper log will be used for SE not loaded in ASM, or if ASM is unavailable.

10.16.6.4 Division Officers

a. Submit SE Operator Training Requests (Figure 10.16-3).

b. Validate completion of Phase I and II training and testing requirements before signing and forwarding the SE License Certification (Figure 10.16-4). This responsibility cannot be delegated.

c. (I-level only) Ensure I-level personnel that use SE to perform tasks on aircraft receive Phase II training and testing specific to T/M/S aircraft assigned.

d. Sign, date and provide personnel with a photocopy of their current SE operator's license, whenever their license is in routing for signature (activities without ASMs). Photocopied licenses are valid for a maximum of 30 days.

e. (I-Level, Air Operations, and Weapons Officers) Coordinate with the Program Manager to develop Phase II SE training and testing (Figure 10.16-4) for SE used by the Division or Department.

10.16.6.5 Work Center Supervisors

a. Verify personnel are licensed or under the direct supervision of a licensed operator prior to assigning them to perform tasks requiring the operation of SE.

b. Ensure an adequate number of personnel are licensed to meet operations.

c. Ensure I-level personnel that use SE to perform tasks on aircraft receive Phase II SE training specific to T/M/S aircraft assigned (I-level only).

d. Monitor work-in-progress to verify personnel operating SE have valid licenses or are in Phase II SE training under direct supervision of licensed operators.

e. Train work center personnel on their responsibility to report incidents of SE misuse or abuse.

f. Verify SE License Certification (Figure 10.16-4) and Phase I and II SE training documentation is filed in the individual's qualification/certification record or U.S. Marine Corps Enlisted Aviation Maintenance Personnel Training/Qualification Jacket, or ASM. NKO Phase I SE Certificates shall be filed in the individual's training certification jacket/MATMEP or scanned into the ASM license accreditation.

10.16.6.6 SE Operators

a. Only operate SE listed on their USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Figure 10.16-1).

b. If licensed to operate self-propelled SE, operators shall maintain a valid State, U.S. Government, or DOD agency driver's license. Operators shall cease operation of self-propelled SE and report to their chain of command if their driver's license is revoked, suspended, or expires, or if they have changes to their physical qualifications, for example, loss of hearing or taking medications that impair motor skills or cause drowsiness.

c. Operate SE in a safe manner:

- (1) Perform pre-operation and post operation inspections.
- (2) Operate SE within designed capacities and capabilities.
- (3) Use equipment safety features and comply with operational safety requirements.

d. Report any observed reckless operation or intentional misuse/abuse of SE to supervisors and the QA SE Misuse/Abuse Program Manager.

COMNAVAIRFORINST 4790.2C
15 Jan 2017

OPNAVINST 4790.2
COMNAVAIRFORINST 4790.2
OPNAV M-8200.16

USN AVIATION SUPPORT EQUIPMENT OPERATOR'S LICENSE		
1. NAME OF OPERATOR		2. PAYGRADE/SERVICE
3. DATE ISSUED		
4. U.S. GOVERNMENT/STATE MOTOR VEHICLE OPERATOR'S LICENSE		
LICENSE NUMBER	ACTIVITY/STATE	EXPIRATION DATE
LICENSEE IS QUALIFIED TO OPERATE THE SUPPORT SUPPORT EQUIPMENT SPECIFIED IN BLOCK 8, SUBJECT TO THE RESTRICTIONS IN BLOCK 9.		
5. NAME OF ISSUING ACTIVITY		
6. SIGNATURE OF LICENSEE (Not Valid Unless Signed)		
7. ISSUED BY (Signature and Title)		
8A. TYPE EQUIPMENT(S) FOR WHICH QUALIFIED	B. EXPIRATION DATE	C. CERTIFIED BY (Initials)
(1)		
(2)		
(3)		
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		
(11)		
(12)		
(13)		
(14)		
(15)		
(16)		
(17)		
Add Row	Remove Last Row	
9. RESTRICTIONS		

Figure 10.16-1 : USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Sample)

List of Equipment Requiring an SE Operator's License

EQUIPMENT

ACU-20/M AIR COMPRESSOR UNIT
ACU-24/M PORTABLE AIR COMPRESSOR
A/M26M-3 LOX PURGE UNIT
A/M26U-14 OXYGEN SERVICING COMPRESSED GAS TRAILER
A/M26U-4B NITROGEN SERVICING TRAILER
A/M27T-3 HYDRAULIC POWER SUPPLY
A/M27T-5 HYDRAULIC POWER SUPPLY
A/M27T-6 HYDRAULIC TEST STAND
A/M27T-7 HYDRAULIC POWER SUPPLY
A/M27T-14 ELECTRIC HYDRAULIC POWER SUPPLY (EHPS)
A/M27T-15 DIESEL HYDRAULIC POWER SUPPLY (DHPS)
A/M32-A-108 SHORE MEPP
A/M32C-17 AIR CONDITIONER
A/M32C-21 AIR CONDITIONER
A/M32C-23 AIR CONDITIONER
A/M32M-18A TRAILER MOUNTED CC CART
A/M32M-24 2000 LBS HANGAR DECK CRANE
A/M32M-39 LARGE CORROSION CONTROL CART
A/M32M-40 SMALL CORROSION CONTROL CART
A/M32U-13B AIRBORNE ARMAMENT TRAILER
A/M37M-2 HYDRAULIC FLUID PURIFIER
A/M37M-11 HYDRAULIC FLUID PURIFIER
A/M42M-2A FLOOD LIGHT CART
A/M42M-5 STATIC FREQUENCY CONVERTER (SFC)
A/M47A-1 TRACTOR MOUNTED ENCLOSURE
A/M47A-4 JET AIRCRAFT START UNIT
A/M48A-5 STEAM CLEANER
A/M48M-4 PRESSURE WASHER
A/S32A-30A TOW TRACTOR
A/S32A-31A TOW TRACTOR (CILOP)
A/S32A-32 SPOTTING DOLLY
A/S32A-35A CARRIER CRASH CRANE (CVCC)
A/S32A-36A AMPHIB CRASH CRANE (AACC)
A/S32A-37 TOW TRACTOR
A/S32A-42 TOW TRACTOR
A/S32A-44 1500 LBS AIRCRAFT UTILITY CRANE

EQUIPMENT

A/S32A-45 MID RANGE TOW TRACTOR
A/S32K-1E WEAPONS LOADER
A/S32M-14 AIRCRAFT MAINTENANCE CRANE
A/S32M-17 AIRCRAFT MAINTENANCE CRANE
A/S32M-19 HEAVY MAINTENANCE CRANE
(HMC)(HMC)/A/S32P-16A FIRE TRUCK
A/S32P-25 FIRE TRUCK
A/S37A-3 SHIPBOARD MEPP
A/S47A-4 JET AIRCRAFT START UNIT
A/S48M-2 MAINTENANCE PLATFORM (DIESEL)
A/S48M-3 MAINTENANCE PLATFORM (ELECTRIC)
A/U26U-1A OXYGEN SERVICING TRAILER
A/U47A-5 MSU-200NAV AIR START UNIT
AWG-9 COOLANT CART
BT-400-46 PRE-HEATER
COMMON SHIPBOARD FORKLIFTS
DA-675/MSM DUMMY LOAD BANK
GTCP 100-82 GAS TURBINE
HALON 1211 RECYCLE/RECOVERY UNIT
HLU-196B/E HOIST LOADING UNIT
HLU-196D/E BOMB HOISTING UNIT
JG-75 TOW TRACTOR
MEP-006A GENERATOR SET
MEP-009A GENERATOR SET
MEP-105A GENERATOR SET
MEP-807A/MEP-809A TACTICAL QUIET GENERATOR
MMG-1A MOBILE ELECTRIC POWER PLANT
MSU 200NAV MOBILE START UNIT (GAS TURBINE)
NITROGEN CARTS/SERVICING BOTTLES
NC-10A/B/C MOBILE ELECTRIC POWER PLANT
ST-1000 REFRIGERANT RECOVERY/RECYCLE UNIT
TA-75A/B/C TOW TRACTOR
TMU-27M LIQUID OXYGEN CART
TMU-70/M LIQUID OXYGEN CART
550 DN FLIGHT DECK SCRUBBER
65A102-J1 CORROSION CONTROL UNIT

Courses for the SE listed above are stocked by CENNAVAVNTECHTRA. To request a special/replacement course, forward the request to: COMMANDING OFFICER, NAVAL AVIATION TECHNICAL TRAINING, 230 CHEVALIER AVE, STE C, PENSACOLA FL 32508-5003. Refer to the Catalog of Naval Training Courses (CANTRAC) NAVEDTRA 10500, Volume II for course number, description, and implementation date.

Operator training courses have not been developed by CENNAVAVNTECHTRA for the following equipment. Training may be obtained from NATEC, Public Works, or at the I-level using locally prepared courses.

MHAC-2AC-302-8 LIQUID COOLANT FILTERING UNIT

HM-GT1-C HYDROMITE (DIESEL/ELECTRIC)

NOTE: Operation of like SE installed in naval aircraft does not require SE licensing and shall be operated per aircraft publications.

Figure 10.16-2: List of Equipment Requiring an SE Operator's License

From: _____
Division Officer

To: SE Licensing Support Activity

Via: Assistant Maintenance Officer

Subj: SE OPERATOR TRAINING REQUEST

1. Request operating training for _____ on the following SE:
Last Name, First, MI Rate/Rank

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

(Single line item of SE per line, maximum of 5 lines)

2. The individual has been screened, physicals conducted and is considered a suitable nominee.

3. Date of Physical Examination (if applicable): _____

4. This training is for: _____

a. Initial qualification

b. Requalification _____

5. Currently Possesses:

a. A USN Aviation Support Equipment Operator's License (OPNAV 4790/102)

Yes _____ No _____

b. A US Government Motor Vehicle Operator's Identification Card (OF-346)

Yes _____ No _____

6. State Driver's License Information ([Share portal](#))

a. License number _____

b. State _____

c. Expiration date _____

d. Auto Extension

Yes _____ No _____

e. Restrictions _____

Division Officer Signature

Date

Figure 10.16-3: SE Operator Training Request (Sample)

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SE LICENSE CERTIFICATION

Last Name	First	MI	Rate/Rank	SSN	Activity	T/M/S Aircraft
-----------	-------	----	-----------	-----	----------	----------------

State Driver's License				U.S. Government Motor Vehicle Operator's License	
State	License No.	Expiration Date	Auto Extend <input type="checkbox"/> Yes <input type="checkbox"/> No	License No.	Expiration Date

PHASE I SECTION

Training Activity		
Support Equipment	Course Number	Date Completed
Self Propelled Vehicle <input type="checkbox"/> Yes <input type="checkbox"/> No	Flight Line Training Date	Weight Handling Equipment Physical
SE DIVISION OFFICER		DATE:

PHASE II SECTION

- NEW (Parts A, B, C, D, and E required)
- RENEWAL (Parts C, D and E required)
- PROFICIENCY (Parts C and E required)

PART A. REQUIRED READING	Trainee Signature	Date Read
A. COMNAVAIRFORINST 4790.2C, Chapter 10, paragraph 10.16		
B. NAVAIR 00-80T-96, Chapter____, Page____		
C. NAVAIR 00-80T-105 "Aircraft Emergency Procedures", Chapter____, Page____		
D.		
E.		

PART B. ON THE JOB TRAINING	Instructor's Signature	Date	Instructor's Signature	Date	Instructor's Signature	Date
1. Discuss ramp/flight line/hangar deck procedures.						
2. Discuss safety precautions.						
3. Discuss emergency procedures (Fuel spill, A/C or SE fire, etc.).						
4. Discuss personnel requirements and positioning.						
5. Discuss hand signals and other communication devices.						
6. Perform and document pre-operational inspection.						
7. Perform proper driving/towing procedures.						
8. Properly position and hookup SE.						
9. Perform maintenance/servicing tasks with the SE.						
10. Perform normal shutdown/disconnect procedures.						
11. Perform postoperational inspection.						

Figure 10.16-4 (front): SE License Certification (Sample)

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PART C. PRACTICAL EXAMINATION	SAT/ UNSAT	Examiner's Signature/Date:
1. Discuss ramp/flight line hangar deck procedures.		Remarks:
2. Discuss safety precautions		
3. Discuss emergency procedures (fuel spill, A/C or SE, fire, etc.).		
4. Discuss personnel requirements and positioning.		
5. Discuss hand signals and other communication devices.		
6. Perform and document preoperational inspection.		
7. Perform proper driving/towing procedures.		
8. Properly position and hookup SE.		
9. Perform maintenance/servicing tasks with the SE.		
10. Perform normal shutdown/disconnect procedures.		
11. Perform post operational inspection.		

PART D. QUALITY ASSURANCE WRITTEN EXAMINATION			
QAR Examiner	Signature	Exam Score: _____	Date
		(Min. Passing Score 85%)	

PART E. CERTIFICATION				
Work Center Supervisor	Signature	Recommended	Yes	No
Division Officer	Signature	Recommended	Yes	No
Support Equipment Officer (IMA only)	Signature	Recommended	Yes	No
AMO (OMA only)	Signature	Recommended	Yes	No
MO	Signature	Recommended	Yes	No

Figure 10.16-4 (back): SE License Certification (Sample)

Phase I Operator Training Outline

Lesson Topic 1.1.1: Equipment Familiarization

1. Purpose of Equipment
2. General Description of Equipment
3. Major Components, Assemblies, and Systems
4. Controls
 - a. Function, Purpose, and Use (normal or abnormal readings, position of indicators and switches)
 - b. Description and Location
5. Emergency and Special Situations (if applicable)

Lesson Topic 1.1.2: Theoretical Application

1. Preoperational Inspections
 - a. Purpose.
 - b. Description (When, Who, How, and What).
 - c. Types (Static Inspection and Functional Check).
 - d. Documentation.
 - (1) Purpose.
 - (2) Procedure (Correct form(s) and annotations).
2. Servicing Requirements
3. Shutdown Procedures
4. Safety Requirements (Identify "Warning", "Cautions" and "General Safety" to follow when operating SE)
5. Written Examination (required only for weight handling support equipment).

Lesson Topic 1.1.3: Practical Application

NOTE: The instructor shall explain and demonstrate each of the following procedures then allow students to perform items #1 and #3a using a job sheet. Item #2 may be simulated if servicing is unnecessary at time of instruction.

1. Preoperational Inspection: Step by step procedures.
 - a. Static.
 - b. Functional.
 - c. Documentation.
2. Servicing: Step by step procedures, including:
 - a. Materials and fluids to use.
 - b. Servicing points.
 - c. Reading and interpreting level indicators.
 - d. Proper servicing practices.

Figure 10.16-5 (page 1): Phase I Operator Training Outline

Phase I Operator Training Outline (continued)

Lesson Topic 1.1.3: Practical Application (continued)

3. Equipment Operation: Step by step procedures, including:
 - a. Normal Operation (In all modes).
 - (1) Start-up procedures (starter duty cycle, position of critical controls).
 - (2) Indicator readings and control adjustment.
 - (3) Driving or maneuvering self-propelled equipment on approved terrains.
 - b. Emergency and Special procedures (as applicable).
 - (1) Situations that could happen to equipment involved, which could cause personnel injury or equipment damage (Engine over speed or will not shutdown, electrical or fuel fires, brake failure, etc).
 - (2) Actions to be taken by the operator should these situations occur.
 - c. Towing.
 - (1) Peculiar requirements (Can the SE be towed or backed).
 - (2) Approved towing vehicles (maximum speed and distance).
4. Shutdown Procedures:
 - a. Park or stow in designated area.
 - b. Check for leaks.
 - c. Determine if servicing is needed.
 - d. Note any discrepancies that occurred during equipment operation. Report discrepancies to supervisor and document on appropriate forms (as applicable).
 - e. Secure equipment.
 - (1) Parking brake set.
 - (2) Chock and tie down in place.
 - (3) Panels, doors, switches, and controls properly secured or positioned.
 - (4) Equipment properly covered or protected.
 - f. Practical examination (required only for weight handling support equipment).

Figure 10.16-5 (page 2): Phase I Operator Training Outline

NEC or MOS Courses that satisfy Phase I SE training requirements

<u>NEC or MOS</u>	<u>Support Equipment</u>	<u>CIN</u>
7617	A/S32A-35A CARRIER CRASH CRANE	C-602-3307
7617	A/S32A-36A AMPHIBIOUS CRASH CRANE	C-602-3307
7603/6073	A/M32C-17 AIR CONDITIONER ¹	C-602-3279
7603	A/M32C-21 AIR CONDITIONER	C-602-3281
7614	A/S37A-3 SHIPBOARD MEPP	C-602-3314
7614/6073	NC-10B-1/C AND A/M32A-108 MEPP	C-602-3228
7614/6073/6499	A/M24M-5 STATIC FREQUENCY CONVERTER ²	C-602-3319
7614/6073	DA-675/MSM LOAD BANK ³	C-602-3302
7614/6073/6499	MEP-807A TACTICAL QUIET GENERATOR	C-602-3318
7614/6073/6499	MEP-809A TACTICAL QUIET GENERATOR	C-602-3318
7606/6072	MSU-200/NAV MOBILE START UNIT	C-602-3316
7607/6072	A/S32A-45 MRTT TOW TRACTOR	C-602-3317
7607	A/S32A-37 TOW TRACTOR ⁴	C-602-3286
7612/6072	A/M27T-14 HYDRAULIC POWER SUPPLY	C-602-3233
7612/6072	A/M27T-15 HYDRAULIC POWER SUPPLY	C-602-3233
7612/6072	A/M37M-11 HYDRAULIC FLUID PURIFIER	C-602-3216
7616	A/S48M-2 DIESEL SELF PROPELLED MAINT PLATFORM	C-602-3291
	A/S48M-3 ELECTRIC SELF PROPELLED MAINT PLATFORM	C-602-3291
	A/S39M-19 HEAVY MAINTENANCE CRANE	C-602-3320
7618	A/S32A-31B TOW TRACTOR ⁵	C-602-3309
	A/S32A-32 SPOTTING DOLLY	C-602-3290
	A/S32P-25 FIRE TRUCK ⁶	C-602-3292
6072	A/S32K-1E AIR LAUNCHED WEAPONS LOADER	C-602-3235

Note 1: A/M32C-23 is pending.

Note 2: A/M24M-5A is pending.

Note 3: A/M24T-17 is pending.

Note 4: A/S32A-48 is pending.

Note 5: A/S32A-49 is pending.

Note 6: A/S32P-25A is pending.

Figure 10.16-6: NEC or MOS Courses that satisfy Phase I SE training requirements

10.17 Support Equipment (SE) Planned Maintenance System (PMS) (NAMPSOP)

10.17.1 References

- a. NAVAIR 17-1-125, Section XI, Support Equipment Cleaning, Preservation, and Corrosion Control.
- b. NAVAIR 17-1-114.1, Inspection and Proof Load Testing of Lifting Slings for Aircraft and Related Components.
- c. NALDA TDRS NAT02, Support Equipment TD Listing.

10.17.2 Introduction

10.17.2.1 The Support Equipment Planned Maintenance System (SE PMS) establishes requirements for the maintenance of SE and Aviation Weapons Support Equipment (AWSE).

NOTE: In the context of this NAMPSOP, “SE” is used to denote both SE and AWSE.

10.17.2.2 This NAMPSOP does not apply to equipment managed under NAVSEA or NAVSUP requirements, such as forklifts and flight deck scrubbers that are maintained by ship or shore I-level activities. OMMS-NG and SKEDS must be used to document scheduled and unscheduled maintenance for NAVSEA or NAVSUP equipment. NALCOMIS will not be used to track any maintenance for NAVSEA or NAVSUP equipment.

10.17.2.3 SE acceptance, transfer, and loan procedures are addressed in paragraphs [5.1.1.7](#) and [5.1.1.8](#)

10.17.3 Requirements

10.17.3.1 Acceptance or Transfer Inspections

- a. Acceptance or transfer inspections are required upon permanent or sub-custody acceptance or transfer of SE. Acceptance inspections will be completed upon receipt and transfer inspections will be completed prior to transfer.
- b. The Support Equipment Acceptance/Transfer Checklist ([Figure 10.17-1](#)) provides the minimum acceptance or transfer inspection requirements for SE. D-level activities must develop similar forms.

NOTE: SE provided on temporary loan basis (vice transferred) will be jointly inventoried and pre-operational inspected by the activity providing the SE and the activity receiving the SE, prior to issuing or accepting the equipment. The SE Acceptance/Transfer Checklist is not required.

- c. If NRFI SE is approved for transfer by the Support Equipment Controlling Authority (SECA), any parts removed for maintenance and not re-installed will be forwarded with the SE. Supply documents, for parts on order or missing, will be attached to the SE Custody and Maintenance History Record (OPNAV 4790/51).

NOTE: If Auto Log-Sets (ALS) or other records are not received with In-service SE, check OMAWHOLE. If ALS has not been uploaded, contact the previous reporting custodian. If unable to obtain ALS or other records, contact the SECA before initiating a new record or ALS.

10.17.3.2 Preventive Maintenance (PM)

- a. PM will be performed per the schedule and procedures specified in technical manuals or manufacturer’s publications.

NOTE: PM specified in technical manuals takes precedence over other publications or directives.

b. If PM status cannot be verified for newly received SE, all PM requirements must be performed before placing the SE in service.

c. The PM cycle for newly manufactured SE that has never been placed into service will be established based on the acceptance inspection completion date. The first PM is not required until the prescribed inspection interval has been reached.

d. The MMCO or Production Control Officer must assess all equipment and publish a local MRC if the equipment meets one or more of the following criteria:

(1) Manufacturers' publications are the only publications available and they do not give detailed procedures and specific intervals for pre and post operational inspections or PM.

(2) The equipment requires NDI or proof load testing per NAVAIR 17-1-114.1.

(3) Injury to personnel or damage to equipment may occur if the equipment fails during use. This includes equipment whose operation involves moving parts, hazardous chemicals, or discharge of material, extreme heat or cold, or electrical shock.

e. PM requiring internal parts replacement (filters, hoses, bearings, etc.), proof load testing, or NDI must be performed by the supporting I-level activity.

f. PM, Technical Directives (TD), and other maintenance actions must be documented on a WO or MAF. If managing the SE as a lot ([paragraph 10.17.3.6c](#)), only one WO or MAF is required to document scheduled maintenance for the entire lot. The lot's lead serial number (block 3 of the OPNAV 4790/51) will be listed in the BU/SERNO block (A52).

NOTES: 1. If an item in a lot does not receive a PM or other scheduled maintenance action, a separate WO or MAF must be written for the specific serial numbered item.

2. Lot WOs or MAFs are not authorized for documenting unscheduled maintenance or repair actions, or for documenting TDs. Unscheduled maintenance (including unscheduled corrosion control) and TDs require a separate WO or MAF for each SE item.

3. Deviation procedures of [paragraph 5.1.1.5.2](#) apply to SE.

10.17.3.3 Preservation

SE that will not be used for extended periods must be preserved per NAVAIR 17-1-125, Section XI.

10.17.3.4 Calibration

SE requiring calibration will be calibrated per [paragraph 10.18](#).

10.17.3.5 Technical Directive Reviews

Technical Directive Reviews must be performed per the requirements of [paragraph 10.10](#). TD reviews will be documented in the Miscellaneous History section of the SE Custody and Maintenance History Record (OPNAV 4790/51) ([Figure 10.17-2](#)) per the procedures of [paragraph 10.17.3.6e](#), and will also be documented in the equipment's CM ALS, as applicable.

10.17.3.6 SE Custody and Maintenance History Record (OPNAV 4790/51)

a. SE with maintenance requirements specified in technical manuals or manufacturer's publications, or require incorporation of an applicable TD must have an SE Custody and Maintenance History Record (OPNAV 4790/51) (Figure 10.17-2).

NOTES: 1. CM ALS is the primary source of SE information for O-level activities using Optimized Organizational Maintenance Activity (OOMA). A paper OPNAV 4790/51 is not required to be maintained for assets permanently assigned to an O-level activity managing SE in OOMA unless the asset has scheduled DEPOT level maintenance. See paragraph 10.17.3.6.g. for direction on sub-custody SE.

2. At a minimum, the ALS for each item requiring an OPNAV 4790/51 will be saved weekly, in XPS format on a CD or external hard drive, and kept on file for 2 weeks. Refer to (<https://sailor.nmci.navy.mil>) FAQ section for instructions on how to save ALS items using XPS format.

3. In addition to electronically transferring ALS, a paper record of the OOMA ALS will accompany the item when permanently transferring custody or subcustody of SE to an O-level, I-level, or D-level activity operating OOMA. Refer to paragraph 5.2.3.10 when transferring SE to an activity that does not support CM ALS.

4. A separate paper SE Custody and Maintenance History Record (OPNAV 4790/51) is not required to be maintained for SE assets permanently assigned to a D-level activity. D-level activities will follow LCPs for SE records.

b. The SE Custody and Maintenance History Record (OPNAV 4790/51) (Figure 10.17-2) will be used to record:

- (1) Custody information.
- (2) Acceptance and transfer inspections.
- (3) Rework.
- (4) Preservation or de-preservation.
- (5) Technical Directives (TDs).
- (6) Inspections that involve NDI or proof load testing.

c. One SE Custody and Maintenance History Record (OPNAV 4790/51) may be used to group multiple like items of SE into lots of up to 10 items that meet the following conditions: All SE in the lot must be the same model; the same PM requirements must apply to the entire lot; and one technician must be able to complete PM for the entire lot in one work shift. For example: An activity has 20 electrostatic discharge (ESD) protective mats of the same type or model. One technician can inspect 10 mats in one work shift. Rather than creating 20 individual SE Custody and Maintenance History Records, the activity can create two records with serial numbers 1 through 10 on the first, and 11 through 20 on the second.

NOTE: If an item on a lot record is transferred, generate an individual SE Custody and Maintenance History Record (OPNAV 4790/51) for the item, and transfer the individual record and photocopies of historical files with the item.

d. Corrections to SE Custody and Maintenance History Records (OPNAV 4790/51) will be made by drawing a single line through each erroneous entry and initialing next to the deleted line. The correct entry will be entered on the next available line. Corrective tape or fluid is not authorized.

e. SE Custody and Maintenance History Record (OPNAV 4790/51) entries:

EQUIPMENT IDENTIFICATION

Block 1. NOMENCLATURE: Name listed on the equipment's technical manual, for example, Mobile Electric Power Plant.

Block 2. MODEL/TYPE: Model/type of equipment, such as A/S32A-45.

Block 3. SERIAL NUMBER: Serial number of the equipment. If the record is for multiple items being managed as a lot (10.17.3.6c), enter the word "LOT" and highlight it in yellow, followed by the serial number of the first item. Enter the remaining serial numbers in Column B (Remarks) of Section VI (Miscellaneous History). Serial numbers in Column B may be annotated in pencil to enable changes to the lot.

Block 4. MANUFACTURER: Manufacturer's code or name.

SECTION I - CUSTODY AND TRANSFER RECORD

Block A. DATE TRANSFERRED: YYMMDD equipment was transferred.

Block B. FROM: UIC and name of the transferring activity, for example, 22178/USS RONALD REAGAN.

Block C. TO: UIC and name of receiving activity.

Block D. AUTHORITY: List the reference directing the transfer. For example, the Transaction Report Authorization Number and DTG of the naval message directing transfer.

Block E. REMARKS: Clarifying comments by transferring or receiving activity. For example, "RFI" or "Missing cable P/N 123-4".

Block F. DATE RECEIVED: YYMMDD and signature of person making logbook/record entries.

SECTION II - RECORD OF REWORK (This section will be filled out by the rework activity, only.)

Block A. DATE INDUCTED: Enter date (YYMMDD) equipment was inducted into rework.

Block B. DATE COMPLETED: Enter date (YYMMDD) rework was completed.

Block C. DESCRIPTION OF WORK: Description of rework performed, such as "Complete rework" or "Inspect and Repair".

Block D. AUTHORIZATION: The reference authorizing the work, such as message DTG.

Block E. ACTIVITY: Rework activity that performed the work.

Block F. SIGNATURE: Signature of person making entries.

SECTION III - PRESERVATION/DE-PRESERVATION

Block A. DATE PRESV: YYMMDD equipment was preserved.

Block B. RE-PRESV DUE DATE: Pencil entries for due date of next preservation integrity check or re-preservation.

Block C. TYPE: Preservation category or level.

Block D. DATE DE-PRESV: YYMMDD equipment was depreserved.

Block E. DIRECTIVE COMPLIED WITH: Reference for preservation/depreservation action.

Block F. REASON FOR INACTIVE STATUS: Examples: "Awaiting parts" or "Infrequent use".

Block G. ACTIVITY: Three-position organization code of activity performing the action, for example, AT6.

Block H. SIGNATURE: Signature of person that made the record entries.

SECTION IV - TECHNICAL DIRECTIVES

Block A. TECHNICAL DIRECTIVE IDENTIFICATION.

Block (1) CODE: TD Code.

Block (2) BASIC: TD basic number.

Block (3) INT: If interim TD, enter "I". Otherwise, leave blank.

Block (4) REV: Revision letter (if applicable).

Block (5) AM: Amendment number (if applicable).

Block (6) PT: TD part number, for example, part 01, 02 (if applicable).

Block (7) KIT: Kit number. Enter 00 if no kit is required.

Block (8) PRI: Enter "I" for Immediate, "U" for Urgent, "R" for Routine, or "K" for Previously Incorporated (record purpose only).

Block B. STATUS: Status of the TD. Authorized entries:

INC - Indicates TD has been completely incorporated.

NINC - This is a temporary entry made in pencil to indicate TDs that have been issued, but not incorporated, and TDs that are only partially incorporated.

NA - TDs that do not apply to the particular model or serial number.

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NIS - This entry accounts for TDs that have not been issued. Only basic number and status code entries are required, no signature is required. Entries are made in numeric sequence, and are normally made in pencil.

CANCELLED - Also enter the reference that cancelled the TD in Block C.

NOTE: When an incorporated TD is canceled, status code remains INC.

TITLE/REMARKS section. No title is required. Q (TD Removal) - Used when an incorporated TD is removed. Do not make a separate entry to document removal of the TD. Draw a line through INC in the entry documenting incorporation and insert Q in the same block. Log the authority for removal in SECTION VI - MISCELLANEOUS HISTORY. If the TD is again incorporated, a new entry is required. The original entry with status code Q will remain.

Block C. TITLE/REMARKS: Enter the title and a brief description of the TD.

Block D. COMPLIANCE.

Block (1) BY (Activity): Three-position organization code of activity incorporating TD, for example, AT6.

Block (2) DATE: The TD completion date (YYMMDD).

Block E. SIGNATURE: Signature of person that made the entries.

SECTION V - NDI and PROOFLOAD RECORD. This section records inspections involving NDI and proof load testing, only.

Block A. TYPE INSPECTION: Type inspection performed, for example, "NDI" or "Proof Load Test".

Block B. DATE COMPLETED: Date (YYMMDD) the maintenance action was completed.

Block C. NEXT DUE: Date (YYMMDD) the next like NDI or proof load test is due.

Block D. ACTIVITY: The activity that performed the NDI or proof load test.

Block E. SIGNATURE: Signature of person that made the entry.

SECTION VI - MISCELLANEOUS HISTORY RECORD. This section records significant information provided in no other space. Examples of entries include: TD verifications; start or hour meter change; modification of scheduled PM inspection base date; replacement of major components; hydraulic contamination; hydrostatic test dates for nitrogen bottles; forced removal date for hoses or other components; and exposure to large quantities of salt water, fire extinguishing agents, or other corrosive agents.

Block A. DATE: Date (YYMMDD) the entry is made.

Block B. REMARKS: A short narrative of the history being recorded and short activity title name. Examples: "Verified NALDA TDSA TDRS NAT02 dated (YYMMDD), VFA-192". For equipment that includes cylinders, include the following statement, "Hydrostatic inspection performed. Date(s) (YYMMDD). Serno(s) 123456."

NOTE: If the record covers multiple items being managed as a lot, list the serial number of the first item in Block 3 and the remaining serial numbers in Column B of Section VI. Comments may be annotated in pencil to facilitate changes in serial numbers. If any item in the lot does not receive a documented action in Section IV or V of the OPNAV 4790/51 record, annotate (in pencil) the reason for non-compliance next to the items serial number. When the action is completed, erase reason for noncompliance and record item serial number in remarks column of Section IV or V (as applicable).

Block C. SIGNATURE: Signature of person that made the entry.

f. The current working copy and the last completed copy of the SE Custody and Maintenance History Record (OPNAV 4790/51) will be retained in Maintenance Control or Production Control.

g. The SE Custody and Maintenance History Record (OPNAV 4790/51) will accompany SE whenever permanently or sub-custody transferred to another activity. If transferred sub-custody, for example L-coded AMMRL equipment issued by an IMA to a squadron, the sub-custodian is responsible for maintaining the OPNAV 4790/51 and returning it with the equipment. If an O-level activity elects to manage sub-custody SE

within OOMA, the activity must update the paper OPNAV 4790/51 record whenever the equipment is returned to the IMA.

NOTE: The OPNAV 4790/51 is not required to accompany SE provided on temporary loan basis (vice transferred).

h. SE Custody and Maintenance History Records (OPNAV 4790/51) may be consolidated at any maintenance level when no space is available for further entries within any one section. All sections will be closed out on the old form by drawing a single diagonal line across the entire card. The word "Consolidated" and the signature of the person that consolidated the card will be entered on the diagonal line. Data will be transcribed to the new form using the following procedures:

EQUIPMENT IDENTIFICATION: Same as old record.

SECTION I - CUSTODY AND TRANSFER RECORD: Transcribe all information from the last entry on the old record. Instead of signing Block F, insert the word "CONSOLIDATED".

SECTION II - RECORD OF REWORK: Transcribe all information from the last rework entry on the old record. Instead of signing Block F, insert the word "CONSOLIDATED".

SECTION III - PRESERVATION/DE-PRESERVATION: If the item is NOT in preservation, no information will be transcribed. If the item is in preservation, transcribe all information from the last preservation entry. Instead of signing Block H, insert the word "CONSOLIDATED".

SECTION IV - TECHNICAL DIRECTIVES:

Block A(1). CODE: Transcribe.

Block B. STATUS: Transcribe.

Block C. TITLE/REMARKS: Transcribe.

Block D. COMPLIANCE: Enter the ORG code of the activity consolidating the SE Record and the date (YYMMDD) the record was consolidated.

Block E. SIGNATURE: Enter the word "CONSOLIDATED".

NOTE: A blanket statement that all TDs up to a specific TD have been incorporated is not authorized. Applicable TDs that have not been incorporated or have been removed must have separate line entries per [paragraph 10.17.3.6](#). TDs incorporated, but not documented, on the original OPNAV 4790/51 must have a separate line entry on the consolidated form.

SECTION V - NDI and PROOFLOAD RECORD: Transcribe all information from the last entry for each type of NDI or proof load testing on the old record. Instead of signing Block E, insert the word "CONSOLIDATED".

SECTION VI - MISCELLANEOUS HISTORY RECORD: Transcribe Block A and B information for the last entry of each like event, for example, last hydrostatic test date with serial numbers, or last NAT02 verification. All entries will contain the original activity short title followed by the word "CONSOLIDATED". After consolidating all entries, insert a new entry in the MISCELLANEOUS HISTORY RECORD with the date (YYMMDD) the consolidation was completed in Block A. In Block B, enter the statement "CONSOLIDATED. All entries are certified to be correct.". In Block C, enter the signature of the person that consolidated the record.

10.17.3.7 SE Preoperational Record (OPNAV 4790/52)

a. The SE Preoperational Record (OPNAV 4790/52) (Figure 5-7) will be maintained by the work center responsible for performing preoperational inspections. The record will be replaced with a new record when completely filled in. The old record will be retained for 30 days from date of last entry.

b. Pre operational inspections shall be conducted on SE/AWSE prior to the first anticipated use each day and prior to each use as specified in applicable MRCs. Inspections include visual and functional verification that a unit is properly serviced and ready for use.

10.17.3.8 SE Transaction Report (TR) (OPNAV 4790/64)

The SE Transaction Report (OPNAV 4790/64) (Figure 3-17) will be used to record transfer, receipt, and sub-custody of SE reported under the AMMRL Program (Chapter 5).

10.17.3.9 Historical File

a. A historical file will be maintained in sequence of TEC and serial number for each item requiring PM, as follows:

Left Side

Scheduled inspection or maintenance WO or MAF Retain most current completed PM WO or MAF until the next like inspection is filed, in JCN sequence.

OPNAV 4790/51 (Figure 10.17-2) Last completed and most current form.

Right Side

Unscheduled maintenance WO or MAF Retain for 6 months from completion date, filed in JCN sequence.

Preservation/Depreservation One complete preservation cycle.

Acceptance/Transfer Checklist (Figure 10.17-1) Retain until the next like inspection.

Technical Directive WO or MAF Retain for 6 months

NAT02 Subsequent Verification Retain until the next like inspection

NAT02 Baseline Verification Retain until the next like inspection

b. The historical file and all outstanding discrepancy WO or MAF will accompany SE that is transferred (permanent or sub-custody) to another activity. The activity having custody is responsible for maintaining the record.

NOTE: The historical file is not required to accompany SE provided on temporary loan basis (vice transferred).

c. Historical files will retain a full cycle of WO or MAF for prescribed scheduled inspections. For example, SE with 13, 26, or 52 week PM cycles will include the WO or MAF for the last completed 13, 26, and 52-week inspections.

d. I-level activities-with NALCOMIS history retrieval capability will store completed MAF data in the NALCOMIS database for 6 months from completion date. MAFs will be stored for one complete inspection cycle or until SE is transferred.

10.17.4 Responsibilities

10.17.4.1 Wing or MAW:

Conduct Material Condition Inspection (MCI) of SE during Maintenance Program Assessments (MPA) to verify activities are maintaining SE in satisfactory material condition.

10.17.4.2 Maintenance Officer:

a. Develop local command procedures (LCP) per [Appendix D](#), if required to direct geographic, T/M/S specific, or command directed actions for SE PMS not addressed in this NAMPSOP. Command LCPs will be submitted to the Wing or MAW for developing a Wing LCP, if deemed necessary.

b. Designate the MMCO or Production Control Officer or D-level designee as the SE PMS Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or D-level SME listing.

10.17.4.3 Program Manager:

a. Perform program audits per [paragraph 10.7](#).

b. Track hourly and metered requirements via the MMP.

c. Screen all SE for PM applicability using the criteria of [paragraph 10.17.3.2c](#).

d. Verify acceptance inspections and transfer inspections are conducted per [paragraph 10.17.3.1](#).

e. Verify preservation requirements are followed per [paragraph 10.17.3.3](#).

f. (O-level) Verify SE is returned to the supporting I-level activity—for scheduled and unscheduled I-level maintenance.

g. Publish an SE PM list in the MMP that includes SE nomenclature, serial number, work center, and due dates.

NOTE: I-level activities may use Support Equipment Standardization System (SESS) monthly schedules instead of publishing a separate list.

h. Verify SE records are maintained per this instruction.

i. Maintain a program file to include:

(1) POCs.

(2) Program related correspondence and message traffic.

(3) Applicable references/cross-reference locator sheets.

(4) Most current CSEC assessment.

10.17.4.4 Division Officer:

Verify material condition of division SE during Work Center Audits per [paragraph 10.7](#).

10.17.4.5 Work Center Supervisor:

- a. Verify personnel receive SE PMS Program indoctrination and refresher training per [paragraph 10.1](#).
- b. Maintain the material condition and operability of SE within their custody, whether or not the SE meets the criteria for PM outlined in [paragraph 10.17.3.2](#). Responsibilities include:
 - (1) Adherence to the inspection and maintenance requirements of [paragraph 10.17.3](#).
 - (2) Compliance with forced removal or replacement dates, hydrostatic test dates, load testing, and NDI.
 - (3) Thorough corrosion prevention and treatment.
 - (4) Prompt turn-in of non-operable SE.
- c. Randomly spot check work in progress to verify personnel are performing pre and post operational inspections per maintenance technical manuals.

SUPPORT EQUIPMENT ACCEPTANCE/TRANSFER CHECKLIST

IMRL/SE ASSET MANAGER

Received from: _____ UIC: _____ Date: _____
Transferred to: _____ UIC: _____ Date: _____
Authority: _____ Bar Code: _____
Condemned for disposal: ____ Yes ____ No Method of disposal: _____ Date: _____
Nomenclature: _____ Serial No: _____
Part No: _____ Cage: _____
Model No: _____
SERMIS Cal Required: ____ Yes ____ No
TEC: _____ Bar Code: _____ W/C: _____
OPNAV 4790/51 Record Included? ____ Yes ____ No
Repairable? ____ Yes ____ No
IMRL/SE Manager Signature: _____

QUALITY ASSURANCE (Only required for acceptance)

Maint. Manual: _____ Digital ____ Paper ____ Initials: _____
MRC: _____ Digital ____ Paper ____ Initials: _____
PRE-OP Card: _____ Digital ____ Paper ____ Initials: _____
PMs Required: _____ TEC: _____ Initials: _____
(CTPL) Update ADRL and JATDI, as necessary: Initials: _____
(CTPL) Notify IMRL Manager to update SERMIS database if the technical manual conflicts with information currently in SERMIS database. Initials: _____
QAR Signature: _____

MAINTENANCE/PRODUCTION CONTROL

1. Issue a WO or MAF (<https://sailor.nmci.navy.mil>) to conduct the Acceptance or Transfer Inspection Initials: _____
 2. (Acceptance) Establish OPNAV 4790/51 Record if none was provided Initials: _____
 3. (Acceptance) Verify Technical Directive configuration, if applicable TD are NINC, direct QA to initiate a TD Routing/Tracking form. Initials: _____
 4. (Acceptance) Add item to SESS (Transfer) Delete item from SESS Initials: _____
 5. (Acceptance) Verify PM status and issue WO or MAF for PMs due. Note: If no PM records provided, issue all PMs. For newly manufactured items, issue first PM as of acceptance date. Initials: _____
 6. (ICRL Manager) Update the ICRL if loss or gain affects capability Initials: _____
 7. (Transfer) Close out the OPNAV 4790/51 Record and deliver to the IMRL or SE Manager for inclusion with the equipment Initials: _____
 8. If the equipment is being condemned, dispose of record and annotate in IMRL Manager or SE Asset Manager section of form (First section). Initials: _____
 9. Remarks: _____
- Maintenance or Production Control Signature: _____

Figure 10.17-1 (page 1): Support Equipment Acceptance/Transfer Checklist

METCAL PROGRAM MANAGER (Coordinate with Metrology and Calibration Lab)

METPRO Cal required? Yes No Initials: _____
If yes, Cal interval: _____ Initials: _____
Current Due Date: _____ Initials: _____
Add to Format 310/350 for Work Center Initials: _____
Require off-ship/station calibration? Yes No Initials: _____
Notify IMRL Manager if SERMIS Cal conflicts with METPRO Initials: _____
METCAL Program Manager Signature: _____

WORK CENTER

1. If receiving or transferring to another activity, skip to step 3.
 2. If condemning, complete the following and skip to step 7. Initials: _____
 - a. Comply with FEDLOG "REC_REP_CODE" for any special handling instructions.
 - b. Comply with FEDLOG "DEMIL CODE" for any special destruction requirements.
 - c. Ensure item is HAZMAT free.
 - d. RED tag item as condemned and segregate away from RFU IMRL until disposed of.
 3. Perform acceptance or transfer inspection and generate discrepancy MAF, as necessary.
 - a. Inspect for corrosion, treat as required Initials: _____
 - b. Inventory all components per IPB Initials: _____
 - c. Hydraulics: Verify hoses for forced removal dates, external hoses for serialization to the device, and perform Hydraulic Fluid Analysis Initials: _____
 - d. Pressure bottles: Verify hydrostatic dates Initials: _____
 - e. Weight Bearing devices (slings/fixtures): Provide a copy of the Load Test tag to PC Logs and Records. Verify foil tag are up to date per most recent PM. Initials: _____
 4. Comply with PM WO or MAF, if included Initials: _____
 5. Comply with TD WO or MAF, if included Initials: _____
 6. Perform preoperational inspection and functional test Initials: _____
 7. I certify all work center acceptance or transfer requirements were met
CDI Signature/Stamp: _____
-

All requirements of this SE Acceptance/Transfer Inspection Checklist have been accomplished and records updated as required by COMNAVAIRFORINST 4790.2.

(Print name, sign, and date.)

IMRL/SE ASSET MANAGER _____ Date: _____

DIVO/MMCO as Program Manager _____ Date: _____

Figure 10.17-1 (page 2): Support Equipment Acceptance/Transfer Checklist

10.18 Naval Aviation Metrology and Calibration (METCAL) Program (NAMPSOP)

10.18.1 References

- a. NAVAIRINST 13640.1C, Naval Aviation Metrology and Calibration Program.
- b. NAVAIRINST 13680.1D, Depot Level Rework Program for Support Equipment End Items.
- c. OPNAVINST 3960.16A, Navy Test, Measurement, and Diagnostic Equipment (TMDE), Automatic Test Systems (ATS), and Metrology and Calibration (METCAL).
- d. OP43P6B, Metrology Automated System for Uniform Recall & Reporting (MEASURE) User's Manual.
- e. NAVAIR 17-35NCE-1, Navy Calibration Equipment List (NCE) General Information.
- f. NAVAIR 17-35MTL-1, Metrology Requirements List (METRL).
- g. NAVAIR 17-35QAC-01, Naval and Marine Corps Calibration Laboratory extensions by Audit/Certification Manual.
- h. NAVAIR 17-35QAL-15, Naval Aircraft Carrier and Amphibious Assault Ships Metrology and Calibration (METCAL) Program Manual.
- i. NAVAIR 17-35FR-06, Facility Requirements for Navy and Marine Corps Calibration Laboratories.
- j. NAVAIR 17-35POP-01B, Metrology and Calibration Program Operations Process Manual.
- k. NAVAIR 17-35TR-8, Technical Requirements for Calibration Labels and Tags.
- l. NAVSEA SE700-AA-MAN-100, Radiation, Detection, Indication, and Computation (RADIAC) Policy and Procedures Manual; Navy RADIAC Program User's Manual; Volume I, Policies and Procedures Manual.
- m. NAVSUP Publication 700, Common Naval Packaging.
- n. COMNAVAIRSYSCOM METCAL Fiscal Year (current FY) Scheduling Procedures for Calibration of Aviation Support Equipment (SE), Test Measurement and Diagnostic Equipment (TMDE), and Calibration Standards (CALSTDS) Letter, referred to in this document as the NAVAIR METCAL Scheduling Letter.

NOTE: The NAVAIR METCAL Scheduling Letter is published annually and provides information on POCs, TMDE scheduling, CALSTDS repair, on-site calibration, deployment planning, Operation Inter-Lab Program, MEASURE procedures, restricted repair CALSTDS, depot man-hour reporting, flow meter calibration requirements data, AIG, packaging and shipping of CALSTDS, and authorized commercial or calibration service providers.

10.18.2 Introduction

10.18.2.1 This NAMPSOP establishes requirements and responsibilities for calibrating TMDE used by naval aviation activities. TMDE includes all devices and aviation SE used to measure, calibrate, gage, test, inspect, diagnose, or otherwise examine materials, supplies, and equipment to determine compliance with specifications, engineering drawings, technical orders, technical manuals, maintenance instructions, and/or serviceability standards.

10.18.2.2 Periodic calibration of TMDE confirms an acceptable level of measurement reliability. TMDE performance is compared against CALSTDS for a higher level of accuracy. This often occurs in upper level

calibration laboratories with traceability to national standards maintained by the National Institute of Standards and Technology (NIST) and the United States Naval Observatory (USNO) using natural physical constants or ratio type calibrations.

10.18.2.3 COMNAVSEASYSKOM is the lead systems command for the Navy's METCAL Program per OPNAVINST 3960.16.

10.18.2.4 COMNAVAIRSYSKOM (AIR-6.7.6.3) is the In-Service Support Center (ISSC) for aviation calibration and related matters that is responsible for the Naval Aviation Metrology and Calibration Program policy, procedures, budgeting, and program funding allocation. AIR-6.7.6.3 develops the D-level METCAL schedule requirements and funds the cost of repair and calibration of I-level CALSTDS by D-level facilities.

10.18.2.5 MEASURE is the designated Management Information System (MIS) for the METCAL Program per OP43P6B. The MEASURE Operational Control Center (MOCC) in San Diego, CA publishes equipment recall schedules and provides data used by the Naval Surface Warfare Center Measurement Science Department (NSWC MSD) in Corona, CA in support of the METCAL Program.

10.18.2.6 The primary activities performing calibration of naval aviation equipment are D-level laboratories, Regional Calibration Centers (RCC), and Field Calibration Activities (FCA).

a. RCCs support NAVAIR and NAVSEA workload in fleet concentration areas. RCCs supporting NAVAIR workload are:

- (1) Mid-Atlantic Regional Calibration Center, Norfolk, VA.
- (2) Southeast Regional Calibration Center, Jacksonville, FL.
- (3) Southwest Regional Calibration Center, San Diego, CA.

b. FCAs are I-level calibration activities normally co-located on a naval air station, Marine Corps air station, or ship with the activities they support. FCAs operate a Work Center 670 (FCA Branch) and provide calibration and repair support for TMDE. I-level activities, not designated as FCA only, operate a Work Center 67A (FCA Receipt and Issue) responsible for coordinating with RCCs and FCAs for scheduling and calibrating the equipment for I-level and O-level activities the I-level supports.

10.18.3 Requirements

10.18.3.1 Any TMDE or CALSTDS used to make quantitative measurements or to provide a reference quantity of known value must be calibrated. Each item of calibrated TMDE or CALSTDS must have a unique serial number affixed to enable tracking. If the manufacturer affixed no serial number to the equipment, the calibrating activity will assign a serial number per OP43P6B.

10.18.3.2 TMDE or CALSTDS will be calibrated and repaired at the most effective maintenance level in consideration of applicable laws, urgency, priority, crew impact, capability, capacity, and total ownership cost per OPNAVINST 3960.16.

NOTES: 1. Oxygen TMDE will only be calibrated and repaired by specified D-level activities.

2. Select FCAs have been augmented with D-level personnel to perform specified D-level calibrations approved by COMNAVAIRSYSKOM (AIR-6.7.6.3). Contactor Engineering and Technical Services (CETS) personnel assigned to expanded capabilities laboratories must comply with the Quality Assurance (QA) policies of the host I-level.

10.18.3.3 TMDE or CALSTDS will be calibrated per the interval and procedures specified in NAVAIR 17-35MTL-1 (METRL).

NOTE: RADIAC equipment will be calibrated and repaired as specified in NAVSEA SE700-AA-MAN-100.

10.18.3.4 Calibration interval changes issued by TYCOMs or published in the monthly NSWC MSD Corona, CA Metrology Bulletin (METBUL) must be implemented upon receipt. New calibration intervals will be documented on equipment by placing a Special Calibration Label (NAVSEA 4734/15) next to, not over, the current calibration label. The Special Calibration Label will cite the TYCOM direction or METBUL, by month and year of publication, as the authority. The new calibration interval will be annotated on the METER Card (OPNAV 4790/58) with the next due date changed.

NOTE: If the new calibration interval impacts operations due to otherwise serviceable equipment becoming overdue for calibration, the activity may submit an extension request per the procedures of paragraphs 10.18.3.4a and 10.18.3.4b.

a. Calibration intervals of non-safety related aviation TMDE may be extended by the TYCOM, for only one interval as specified in NAVAIR 17-35MTL-1 or 4 months, whichever is less. Extension requests for safety related aviation TMDE can only be authorized by NAVAIRSYSCOM-6.7.6.3 with the following restrictions:

- (1) Extensions will be granted only in situations of operational necessity.
- (2) TMDE suspected to be out of tolerance will not be extended.
- (3) CALSTDS calibration intervals will not be extended.

NOTES: 1. Safety related TMDE is designated on the MEASURE inventory with a pound (#) sign as the last character in the Sub custodian field, block 6 of METER Card (OPNAV 4790/58). There is no definitive list of safety related SE. An item used for aircraft support might impact safety, but when used for a different function may not.

2. Extended TMDE must be turned in for calibration, as soon as possible, after the operational requirement has been satisfied or calibration capability becomes available.

b. Activities requesting a calibration interval extension must submit a naval message to the TYCOM with an information copy to COMNAVAIRSYSCOM (AIR-6.7.6.3). Requests for an extension will contain the following information:

- (1) Part number.
- (2) Serial number.
- (3) Nomenclature.
- (4) Next due date.
- (5) Extension term requested.
- (6) Aircraft or ship systems supported.
- (7) Number and status of like items on hand (all assets that perform the same maintenance function).
- (8) Safety certification (whether or not safety related when used in that particular application).
- (9) Asset condition statement, indicating any significant maintenance since last calibration.
- (10) Justification for an extension.

NOTE: Extension requests for RADIAC equipment will be forwarded to COMNAVSEASYSYSCOM (Code 04R) via NAVSEA Detachment Radiological Affairs Support Office Yorktown, VA (Code 02) per NAVSEA SE700-AA-MAN-100. An information copy will be sent to the ACC (COMFAIRFWD Code N42), if operating in WESTPAC.

c. Extensions will be documented by placing a Special Calibration Label (NAVSEA 4734/15) next to (not over) the expired calibration label of each extended asset. The Special Calibration Label will cite the activity that authorized the extension and the DTG of the naval message.

10.18.3.5 Activities performing calibration or repair of naval aviation TMDE must be certified per NAVAIR 17-35QAC-01.

10.18.3.6 Calibration Technicians, whether military, civilian, or contractor, must be qualified to perform the assigned calibration functions per NAVAIR 17-35POP-01. Navy military personnel performing calibrations must be from an electronic technical rating and possess either NEC 6673, 6718, or 1589. Marine Corps Military Calibration Technicians must possess MOS 6492. The following are exceptions:

a. Personnel from other ratings or MOS may perform basic physical or mechanical calibration actions (Phase B and D) if trained and certified, in writing, through locally developed on the job training (OJT) syllabus. Calibration Work Center Supervisors must sign final certification for calibration personnel qualified via OJT.

b. Activities supporting the Consolidated Automated Support System (CASS) category of Automatic Test Equipment (ATE) can use NEC 6705 or MOS 6469 to perform calibration and application of the calibration label to the CASS Bench.

c. Technicians supporting the NAVSEA SISCAL Program onboard ships must possess NEC 6673 or 6718, MOS 6492, or be a graduate of the Shipboard Gage Calibration Program (SGCP) Operator course, CIN A-652-0510, and NEC 4782.

10.18.3.7 A complete and current inventory of CALSTDS must be maintained on the activities Calibration Standards and Equipment List (CALSEL), 17-35 CAD-Series document, and MEASURE system per [paragraph 10.18.3.11b](#).

a. CALSTDS requiring servicing by NIST will be forwarded to NIST via the Navy Primary Standards Lab (NPSL).

b. All CALSTDS and CALSEL listed ancillary items must have a Calibration Standard (NAVSEA 4734/21 or 4734/22) decal ("Meat Ball") affixed to it.

c. CALSTDS assigned to I-level activities are under direct inventory control of the activities TYCOM and will not be reported under the Aircraft Maintenance Material Readiness List Program.

d. Requests for new or additional CALSTDS will be submitted via the activities TYCOM to COMNAVAIRSYSCOM (AIR-6.7.6.3) per the activities CALSEL. If AIR-6.7.6.3 approves the request, they will coordinate with NAVAIR Calibration Standards Ready Issue Activity (CSRIA) to obtain the CALSTDS.

NOTE: NAVAIR 17-35 NCE-1 provides listings of primary standards and substitutes. Questions regarding standards equivalency will be referred to NSWC-MSD Corona, CA Monthly METBUL via COMNAVAIRSYSCOM (AIR-4.1.12) METCAL In-Service Engineering Activity (ISEA).

e. Requests for deletion of CALSTDS must include a detailed justification and be submitted, per the activities specific CALSEL, to the TYCOM. If the TYCOM authorizes deletion, the activity must package the CALSTDS for shipment per NAVSUP Publication 700, complete a METER Card (OPNAV 4790/58) per

OP43P6B, and Requisition and Invoice/Shipping Document (DD 1149) or DoD Single Line Item Requisition System Document Manual (DD 1348). Mail the packaged CALSTDS to the address listed below:

NAVAIR CALIBRATION STANDARDS READY ISSUE ACTIVITY (CSRIA)
ATTN: FCA STANDARDS
BLDG 612 BAY 9
MARINE CORPS AIR STATION
BEAUFORT, SC 29904-5017

NOTE: COMNAVAIRSYSCOM METCAL Integrated Program Team (IPT) provides funding for calibration and repair of I-level CALSTDS beyond the capability of the FCA.

10.18.3.8 Individual Material Readiness List (IMRL) assets may be used to perform calibration, if they are specifically called for in the calibration procedure. A Calibration Standards decal ("Meat Ball") will not be affixed to IMRL assets used for calibration.

NOTES: 1. IMRL assets specifically designated for use in test equipment repair shops are listed in SERMIS Systems 835, 835A, and 835B.

2. COMNAVAIRSYSCOM METCAL Program funds will not be used to repair IMRL assets used for calibration.

10.18.3.9 METER Cards (OPNAV 4790/58) will be used for recording and inducting TMDE for calibration or repair, a separate MAF or WO is not required.

a. Quality Assurance (QA) Inspectors must place their QA stamp or stamp number in the quality verification steps, when required, and list the model and serial number of all CALSTDS used to complete the calibration or repair.

b. METER Card (OPNAV 4790/58) buff copies will be filed in MEASURE Inventory Format 310 order and maintained on file for 12 months or one calibration cycle, whichever is greater.

c. METER Card (OPNAV 4790/58) buff copies for CALSTDSs must be maintained for the life of the CALSTD at the activity.

NOTES: 1. The MEASURE User Manual provides additional procedures for METER Cards (OPNAV 4790/58).

2. A METER Card (OPNAV 4790/58) will also be used to document calibration of CASS category ATE.

10.18.3.10 The following are the most commonly used inventory and MEASURE Recall Format Reports required by OP43P6B:

a. Inventory Format 310 Report lists all calibratable TMDE under a customer activities cognizance and provides part number, serial number, sub custodian, calibration interval, and next due date. Inventory Format 310 will be maintained by the customer activity.

b. Inventory Format 311 Report lists the activities CALSTDS and CALSEL listed ancillary items. Inventory Format 311 will be maintained by activities performing calibration.

c. Inventory Format 350 Report lists items from the issuing activities Inventory Format 310 Report. Inventory Format 350 will be issued by the servicing calibration activities and maintained by custodians or sub custodians of TMDE.

d. Recall Format 802 Report lists items due for turn-in or overdue for calibration, due in the present month, and within the next two months for calibration. Recall Format 802 is distributed monthly and

sequenced by custodian or sub custodian. Recall Format 802 will be issued by servicing calibration activities to custodians or sub custodians of TMDE.

e. Recall Format 805 Report lists equipment scheduled into a laboratory by due date that is overdue for calibration, due in the present month, and within the next two months for calibration. Recall Format 805 will be issued by servicing calibration activities to custodians or sub custodians of TMDE.

10.18.3.11 The following are documentation procedures for acceptance of commercial, non-Navy, calibration of TMDE:

a. OEM calibration labels or certificates are authorized for acceptance of new (unused) TMDE for the initial calibration cycle, only if the equipment is listed in METRL with a calibration cycle and an approved procedure, or if the model or CAGE is listed in the Authorized Calibration or Commercial Service Providers List in the NAVAIR METCAL Scheduling Letter. Recurring calibration, life-of-type or calibration after repair, is authorized to be accepted, only if the model or CAGE is listed in the Authorized Calibration or Commercial Service Providers List in the NAVAIR METCAL Scheduling Letter.

b. Transfer the information from the OEMs Certificate of Calibration to a METER Card (OPNAV 4790/58) to account for the calibration. Indicate the Condition Received (block 61). Enter any Out of Tolerance Data (blocks 30 through 35). Enter the receiving calibration facility as the Servicing Lab Code (block 21). Enter the affixed Special Calibration Label as the Servicing Label (block 59). Calculate the Next Due Date (block 29), based on the OEMs calibration date, the calibration cycle listed for the asset in NAVAIR 17-35MTL-1, and the NAVAIR METCAL Scheduling Letter. Attach a copy of the OEM Certificate of Calibration to the METER Card (OPNAV 4790/58).

NOTE: The NAVAIR METCAL Scheduling Letter provides additional guidance.

c. Attach a Special Calibration Label to the equipment, as close as possible, to the OEMs Calibration Label. The Special Calibration Label will state “(OEMs name) calibration is accepted per state authority, such as this instruction, NAVAIR METCAL Scheduling Letter, or NAVAIR 17-35MTL-1”. Confirm the Special Calibration Label Next Due Date agrees with the Meter Card Next Due Date (block 29).

NOTE: Unsupported item procedures listed in the NAVAIR METCAL Scheduling Letter must be followed for TMDE not listed in METRL with an interval and approved calibration procedure, or in the Authorized Calibration, or Commercial Service Providers List.

10.18.3.12 TMDE or CALSTDS must be labeled per NAVAIR 17-35TR-8 to indicate calibration status. In addition to NAVAIR 17-35TR-8, the METBUL also lists authorized calibration labels and tags. NAVAIR-6.7.6.3 prohibits the use of Special Calibration Labels to document calibrations performed to reduce tolerances (other than those specified in the Instrument Calibration Procedure) without the NAVAIR-6.7.6.3 Chief Engineer’s permission.

NOTE: NAVAIR 17-35TR-8 may be accessed at any Navy or Marine Corps calibration facility using the METPRO suite.

10.18.3.13 TMDE or CALSTDS must be protected when transported or stored, to include:

- a. ESD protective shielding material used on all exposed electrical connectors.
- b. Environmental protection, such as hard cases or barrier paper used to keep water and dust out.
- c. TMDE or CALSTDS will be appropriately packaged to prevent equipment damage.

10.18.4 Responsibilities

10.18.4.1 D-level METCAL Activities:

- a. When authorized by NAVAIR-6.7.6.3, repair and calibrate metrology calibration standards received from COMNAVAIRSYSCOM FCA laboratories and activities.
- b. Perform incidental repair and calibration services for:
 - (1) COMNAVSEASYSYSCOM and COMSPAWARSYSCOM.
 - (2) Other DOD and government agencies.
 - (3) Commercial contractors working under government contracts.
 - (4) In-house equipment that requires calibration within the laboratory's capability, not recalled or scheduled by COMNAVAIRSYSCOM (AIR-6.7.6.3).
- c. Contact the cognizant TYCOM for disposition guidance for CALSTDS that fail calibration.
- d. Provide specialized calibration training to other Navy calibration laboratory personnel on the theory and use of calibration equipment.
- e. Request assistance from COMNAVAIRSYSCOM (AIR-6.7.6.3) to obtain technical data or procedures for equipment not specified in the METRL. Pending approval, interim local calibration procedures may be used, if authorized by AIR 6.7.6.3 metrology engineering staff. AIR-6.7.6.3 will determine if the local calibration procedure will be incorporated into the METRL.
- f. Assist COMNAVAIRSYSCOM (AIR-6.7.6.3) with inspecting and surveying calibration facilities.
- g. Provide pickup and delivery service of TMDE or CALSTDS between custodians (customers) and COMNAVAIRSYSCOM calibration laboratories, as directed by COMNAVAIRSYSCOM (AIR-6.7), using government owned or commercial vehicles. TMDE or CALSTDS will be protected during transportation to prevent damage per procedures outlined in [paragraph 10.18.3.13](#).
- h. Perform additional tasks assigned by COMNAVAIRSYSCOM (AIR-6.7.6.3).
- i. Include workload generated by in-house calibratable assets in requirements projections.
- j. Accept non-aviation TMDE for calibration or repair, only if funding has been provided.
- k. Maintain a file of METCAL Program directives and AIG messages in the work center. Retain METCAL AIG messages for a minimum of 1 year.
- l. Review NSWC MSD Corona, CA Monthly METBULs for pertinent METCAL Program information. See [paragraph 10.18.3.4a](#). for interval change information.
- m. Initiate SE Misuse/Abuse Reports per [Chapter 7](#), when negligence is suspected to have caused damage to TMDE.
- n. Perform calibration procedures per NAVAIR 17-35MTL-1 and affix labels and tags per NAVAIR 17-35TR-8.
- o. Verify environmental and facility requirements are being met per NAVAIR 17-35FR.

p. Record probable causes for significant temperature and humidity changes that exceed specified limits, such as power outage and air conditioner failure on a paper or electronic log and maintain on file for a minimum of 1 year.

10.18.4.2 I-level Responsibilities:

NOTE: METCAL Program organization and responsibilities for CVN/L-class ships operating combined calibration laboratories are outlined in NAVAIR 17-35QAL-15.

a. Maintenance Officer (MO):

(1) Designate a METCAL Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

(2) Request calibration extensions per [paragraph 10.18.3.4.a\(1\)](#)

(3) Develop local command procedures (LCP) per [Appendix D](#), if required to direct geographic, type/model/series (T/M/S) specific, or command directed actions for METCAL information not addressed in this NAMPSOP.

b. Quality Assurance (QA) Officer:

Designate a Quality Assurance Representative (QAR) as the naval aviation METCAL Program Monitor. Designation will be in writing via the MMP or SME listing.

c. QA METCAL Program Monitor:

Perform audits per [paragraph 10.7](#).

d. Avionics Division Officer:

(1) Operate a Work Center 670 (FCA Branch), Work Center 67A (FCA Receipt and Issue), and any Work Center 67 series calibration or repair shops required to support customer activities.

NOTE: Where regionalized calibration support is in place, non FCA I-levels will only establish a Work Center 67A (FCA Receipt and Issue) for calibration coordination between supported customer activities, supporting RCCs, FCAs, and depots, and in support of CASS ATE calibration.

(2) Coordinate assignment of a vehicle to Work Center 67A (FCA Receipt and Issue) for transportation of TMDE or CALSTDS shore-based I-levels.

e. METCAL Program Manager:

(1) Perform a program assessment within 30 days of assignment and annually thereafter per [paragraph 10.7](#).

(2) Manage calibration scheduling and recall of equipment.

(3) Coordinate processing of calibration extension requests per [paragraph 10.18.3.4](#).

(4) Update Inventory Format 310, 311, and 350 reports and submit necessary changes to MOCC per OP43P6B.

(5) Designate safety related TMDE on the MEASURE inventory.

(6) Evaluate items inducted into higher level calibration activities to determine the feasibility of calibrating or repairing items at the FCA. Requests for additional standards to support new workload will be submitted via the TYCOM per the activities CALSEL.

(7) Coordinate depot repair of TMDE for items beyond FCA repair capability per NAVAIRINST 13680.1.

(8) Coordinate depot repair of CALSTDS for items beyond FCA authorization per the CALSEL.

NOTE: TMDE calibrated by a D-level lab and FCA CALSTDS will not be inactivated unless authorized by the TYCOM for TMDE or NAVAIR 6.7.6.3 for CALSTDS.

(9) Submit requirements for additional phases, standards, or temporary replacement standards via TYCOM per the CALSEL.

(10) Request disposition instructions via the TYCOM for obsolete, excess, redundant, unused, substitute, duplicate, rejected, or otherwise no longer required items per the CALSEL.

(11) Manage the inventory of CALSTDS for ATE (CASS, EOTS, etc.) and those designated in NAVAIR 17-35NCE-1 phase packages.

NOTE: I-level CALSTDS will not be loaned out or used by other work centers, with the exception of ATE CALSTDS, which may be temporarily distributed to ATE Work Centers designated for ATE calibration. For example, CALSTDS specifically designated for CASS may be held in the CASS Work Center.

(12) Prepare requests for engineering support from the ISSC METCAL PST (Team 2).

(13) Report additions and deletions to CALSTDS inventory per [paragraph 10.18.3.8](#).

(14) Maintain a program file to include:

- (a) POCs.
- (b) Program correspondence and message traffic.
- (c) References or cross-reference locator sheets.
- (d) Most current CSEC assessment.

f. Work Center 670 (FCA Branch):

(1) Perform calibration per NAVAIR 17-35MTL-1 and affix applicable labels and tags per NAVAIR 17-35TR-8.

(2) Maintain and calibrate TMDE held for issue to O-level activities.

(3) Submit TMDE or CALSTDS for calibration per NAVAIR 17- 35MTL-1.

(4) Screen inducted items for required SECs or SEBs and comply with requirements specified for I-level action.

(5) Perform CALSTDS preventive maintenance.

(6) For items requiring D-level calibration, comply with the following:

(a) Verify calibration cannot be performed at the FCA level. Request assistance from the TYCOM, if a temporary constraint exists, for example, lack of personnel, standards, or publications.

(b) Forward TMDE or CALSTDS scheduled for D-level calibration to the laboratory specified by NAVAIR METCAL Program Office (AIR-6.7.6.3).

NOTE: TMDE or CALSTDS scheduled for D-level calibration must be checked for operable condition prior to shipment. NRFI TMDE will be repaired or processed under the SE Rework Program. Contact the cognizant TYCOM for disposition instructions for NRFI CALSTDS per the CALSEL.

(c) Use the METCAL Program Invoice ([Figure 10.18-1](#)), or a locally produced form, to document transfer or induction of TMDE or CALSTDS into D-level calibration activities. The equipment's METER Card (OPNAV 4790/58) will be transferred to the calibrating activity.

(d) Track D-level man-hour expenditures against the total allocation provided by NAVAIR (AIR-6.7.6.3). Prioritize D-level workload to confirm the most important assets are calibrated within allocated man-hours. The standard man-hour figure, listed on MEASURE Inventory Format 310, will be used when deducting man-hours. Immediately notify the TYCOM METCAL Program Manager of discrepancies.

NOTES: 1. MEASURE MSRPT14 (weekly summary of man-hours used) and MSRPT15 (weekly itemized list of assets submitted) reports provide man-hour utilization data for each activity.

2. Forward a request for additional man-hours to TYCOM via e-mail or naval message when D-level calibration requirements exceed allocated man-hours. NAVAIR must authorize the additional man-hours prior to submitting items to D-level calibration activities.

3. Non-aviation (non IMRL) TMDE forwarded to D-level calibration laboratories for calibration or rework must be clearly identified as non-aviation TMDE. Calibration of non-aviation SE is not funded by NAVAIR and must be submitted under separate shipping documents from aviation TMDE or CALSTDS.

(7) Schedule and perform calibration services on jet engine test cells per NAVAIR 17-35MTL-1.

NOTE: D-level calibration requirements must be completed prior to engine test cell correlation by the activity performing the correlation.

(8) Provide calibration and repair support for TMDE assigned to Naval Educational Training Command (NETC) as directed by the TYCOM.

(9) Comply with QA requirements per [Chapter 7](#). The inspector's stamp or signature will be stamped or entered on-the METER Card (OPNAV 4790/58) buff copy in the quality verification section.

(10) Process TMDE Discrepancy Reports ([Figure 10.18-2](#)).

(11) Maintain a technical library of calibration and commercial maintenance manuals on instrument calibration procedures for repair of TMDE or CALSTDS within Work Center 670 (FCA Branch).

(12) Document calibration and repair actions on a METER Card (OPNAV 4790/58) or NAVSEA equivalent at NAVSEA activities per OP43P6B. In addition to MEASURE documentation, document repair actions in NALCOMIS to facilitate parts procurement. Repair actions requiring parts procurement will only be entered into NALCOMIS.

(13) Maintain a file of METCAL Program directives and AIG messages in the Work Center 670 (FCA Branch). Retain METCAL AIG messages for a minimum of 1 year.

(14) Review NSWC MSD Corona, CA Monthly METBULs for pertinent METCAL Program information. See [paragraph 10.18.3.4](#) for interval change information.

(15) Initiate SE Misuse/Abuse Reports per [Chapter 7](#), when negligence is suspected to have caused damage to TMDE.

(16) Verify environmental and facility requirements of NAVAIR 17-35FR-06 are being met. Record probable causes for significant temperature and humidity changes that exceed specified limits, such as power outage or air conditioner failure on paper or in an electronic log. Maintain all recorded data on file for a minimum of 1 year.

g. Work Center 67A (FCA Receipt and Issue):

- (1) Maintain a current Recall Format 802 and 805 Report on file.
- (2) Recall items due for calibration.
- (3) Pick up and deliver TMDE from supported activities.
- (4) Handle, transport, and store calibratable TMDE or CALSTDS to prevent equipment damage.
- (5) Review MEASURE Inventory Format 310 and 311 Reports monthly upon receipt and submit corrections and changes (including new or recently received items, not previously reported) to the MOCC within ten working days per OP43P6B.
- (6) Receive and distribute Inventory Format 350 and Recall Format 802 Reports to appropriate sub custodians.
- (7) Review sub custodian changes to their Inventory Format 350 Report and update related sections of Inventory Format 310 and Recall Format 805 Reports.
- (8) Notify activities in possession of equipment recalled for calibration, but not turned in.
- (9) Verify TMDE inducted for calibration or repair comes with a preprinted METER Card (OPNAV 4790/58). If the preprinted METER Card (OPNAV 4790/58) is not available, print one from the AIS Web site or hand scribe a METER Card (OPNAV 4790/58) using data from MEASURE reports and the equipment data plate.

NOTE: If equipment is received without a METER Card (OPNAV 4790/58) buff copy, recreate the buff copy from data listed in the pink copy or equivalent METCAL form.

(10) Verify all TMDE has a serial number affixed or assigned. If manufacturer affixed no serial number to the equipment, assign a serial number per OP43P6B.

(11) Verify METER Cards (OPNAV 4790/58) are annotated per OP43P6B.

(12) Conduct a meeting with sub custodian calibration representatives each month to distribute Inventory Format 350 Reports and, if needed, provide training on the use of MEASURE reports and local induction and receipt policies.

(13) Manage shipment or transportation and track receipt of items inducted into other calibration facilities.

10.18.4.3 O-Level Activity Responsibilities:

a. Maintenance Officer (MO):

(1) Designate a METCAL Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

(2) Verify operational necessity prior to requesting calibration interval extensions per [paragraph 10.18.3.4a\(1\)](#).

(3) Develop LCPs per [Appendix D](#), if required to direct geographic, T/M/S specific, or command directed actions for METCAL not addressed in this NAMPSOP. Command LCPs must be submitted to the Wing or Marine Aircraft Wing (MAW) for consideration of developing a Wing LCP.

b. Quality Assurance (QA) Officer:

Designate a QAR as the METCAL Program Monitor. Designation will be in writing via the MMP or SME listing.

c. QA METCAL Program Manager:

Perform audits per [paragraph 10.7](#).

d. METCAL Program Manager:

(1) Perform a program assessment within 30 days of assignment and annually thereafter per [paragraph 10.7](#).

(2) Arrange delivery of TMDE scheduled for calibration to Work Center 67A (FCA Receipt and Issue). Obtain a receipt and follow up, if equipment is not promptly returned.

(3) Provide related cables, accessories, charts, and any peculiar technical data the FCA requires to be turned in with the equipment. The TMDE Discrepancy Report ([Figure 10.18-2](#)) or a form provided by the FCA will be used to document any missing items or non-operational conditions.

(4) Update MEASURE data via the FCA, whenever TMDE is transferred or received.

(5) When items are returned from calibration, retain the METER Card (OPNAV 4790/58) pink copy until the new calibration date is reflected on the Inventory Format 350 Report.

(6) Within 5 days of receipt of a new Inventory Format 350 Report, review and reconcile errors in the report data, annotate corrections, and sign and return the corrected report to the supporting activity's METCAL Program manager. Corrections include, but are not limited to, items that have been transferred, new items not on the report, cycle times not matching the next due and last serviced dates, and like items with different cycle times. Corrections will be annotated in the format directed by the calibration lab. Retain a copy on file until corrections appear on subsequent Inventory Format 350 Reports.

(7) Maintain a working copy of the Inventory Format 350 Report and annotate changes as items are turned in, rejected, transferred, newly received, and returned from calibration.

(8) Store TMDE in appropriate packaging to prevent equipment damage.

(9) Coordinate resolution of TMDE shortages.

(10) Designate safety related TMDE on MEASURE inventory per [paragraph 10.18.3.4a](#).

(11) Plan the calibration schedule to minimize equipment becoming due for calibration during deployment.

(12) Arrange for calibration services from an FCA or Navy Calibration Laboratory within the battle group or area of operation, if deployed without direct FCA support.

(13) Coordinate deployment requirements with the supporting FCA, at least 90 days prior to the projected deployment date, regardless of the length of the deployment. In the case of a short notice deployment, Program Managers will notify the calibration lab as soon as the deployment is known.

(14) Maintain a current Recall Format 802 Report on file.

(15) Replace "REJECTED" TMDE per COMNAVAIRFORINST 13650 and dispose of rejected consumable items per local policy.

(16) Maintain a program file to include:

- (a) POCs.
- (b) Program correspondence and message traffic.
- (c) References or cross-reference locator sheets.
- (d) Most current CSEC assessment.

10.18.4.4 O-level and I-level Work Center Supervisors:

a. Verify personnel receive NAMP indoctrination training on the METCAL Program per [paragraph 10.1](#).

b. Verify TMDE assigned to the work center is serviceable and has a valid calibration label affixed.

NOTE: Equipment without valid calibration labels or items with damaged "CALIBRATION VOID IF SEAL BROKEN" labels will not be used.

c. Remove from service and turn in any TMDE that is non-operational or suspected to be not functioning correctly, regardless of actual calibration due date. Provide all cables, accessories, charts, and any peculiar technical data the FCA requires to be turned in with the equipment. The TMDE Discrepancy Report ([Figure 10.18-2](#)) or a form provided by the FCA will be used to document any missing items or non-operational conditions.

d. (I-Level Only) Arrange delivery of TMDE schedule for calibration to Work Center 67A. Obtain a receipt and follow up if equipment is not promptly returned.

e. (I-Level Only) When items are returned from calibration, retain the METER Card (OPNAV 4790/58) pink copy until the new calibration date is reflected on the Inventory Format 350 Report.

f. (I-Level Only) Within 5 working day of receipt of a new Inventory Format 350 Report, review and reconcile errors in the report data, annotate corrections, and sign and return the corrected report to the supporting activity's METCAL Program Manager. Corrections include, but are not limited to, items that have been transferred, new items not on the report, cycle times not matching the next due and last serviced dates, and like items with different cycle times. Corrections will be annotated in the format directed by the calibration lab. Retain a copy on file until corrections appear on subsequent Inventory Format 350 Reports.

g. (I-Level Only) Maintain a working copy of the Inventory Format 350 Report and annotate changes as items are turned in, rejected, transferred, newly received, and returned from calibration.

h. Store TMDE in the appropriate packaging to prevent equipment damage.

METCAL Program Invoice

FROM:			INVOICE NO:		
TO:			LOCATION:		
AUTHORIZATION (Officers Name, Rank, Signature)			PHONE OR EXT. NO.		JOB NO: (Not For FCA USE)
			DATE		ACCOUNTING
ITEM NO.	MODEL OR PART NUMBER	SERIAL NUMBER	NOMENCLATURE	DATE IN	DATE OUT
RECEIVED			DATE	BY (SIGNATURE)	

Figure 10.18-1: METCAL Program Invoice (Sample)

**TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT DISCREPANCY
REPORT**

Date: _____

From: _____

To: Work Center 670/Field Calibration Activity

Subj: REPAIR OF TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT
(TMDE)

1. Request repair of the following TMDE

Model Number _____

Serial Number _____

Nomenclature _____

2. Describe the malfunction in detail:

Figure 10.18-2: TMDE Discrepancy Report (Sample)

10.19 Hazardous Material Control and Management (HMC&M) Program (NAMPSOP)

10.19.1 References

- a. OPNAV M-5090.1, Environmental Readiness Program Manual.
- b. NAVSUP Publication 722, Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) Manual.
- c. OPNAVINST 5100.19, Navy Safety and Occupational Health (SOH) Program Manual for Forces Afloat.
- d. OPNAVINST 5100.23, Navy Safety and Occupational Health Program Manual.
- e. DODINST 6050.05, DOD Hazard Communication (HAZCOM) Program.
- f. NAVMC DIR 5100.8, Marine Corps Occupational Safety and Health (OSH) Program Manual.
- g. 29 CFR Part 1910, Occupational Safety and Health Standards.
- h. 40 CFR Chapter VII, Environmental Protection Agency and Department of Defense; Uniform National Discharge Standards for Vessels of the Armed Forces.

10.19.2 Introduction

10.19.2.1 The Hazardous Material Control and Management (HMC&M) Program establishes policy for storage, handling, disposal, and documentation of hazardous material (HAZMAT) used to maintain aircraft and aeronautical equipment.

10.19.2.2 The Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) is a mandated Navy policy that provides the only source for aviation maintenance activities to control and manage HAZMAT per NAVSUP Publication 722. Under CHRIMP, all HAZMAT is centrally controlled using the Shore Work Center Authorized Use Lists (AUL) or afloat Type Ships Hazardous Materials Lists (T-SHML) and is supplied based on validated customer needs and properly trained users. Ships' and stations' Hazardous Material Minimization Centers (HAZMINCEN) are required to comply with CHRIMP.

10.19.2.3 NAVAIR (AIR-6.7.1.1.1) maintains the Aviation Hazardous Material List (AHML) database of HAZMAT authorized or not authorized by the engineering technical authority for use on aviation weapon systems and support equipment (SE). The AHML database correlates the HAZMAT requirements identified by aviation program offices with supply information and T-SHML Allowed on Board (AOB) Codes. Only HAZMAT identified national stock numbers (NSN) with Navy interest in technical publications are included in the AHML. The AHML database is available on the Shipboard/Shore-based/Aviation Requirements (SSAR) Web site (<https://ssar.nswc.navy.mil>). Questions concerning HAZMAT or the AHML can be sent to navair.hazmat.gm.fct@navy.mil

NOTE: HAZMAT used for general office and housekeeping are not included in the AHML.

10.19.2.4 Navy policy requires the development of facility, activity, and work center AULs to ensure the use of non-hazardous or the least hazardous, technically acceptable materials. Depending on the HAZMAT database used at a location, the HAZMINCEN or Environment, Safety, and Occupational Health (ESOH) offices can provide copies of AULs.

10.19.2.5 Naval Supply Weapon Systems Support - Mechanicsburg (NAVSUP WSS - M) manages the afloat T-SHMLs for all ship types (e.g. carriers, destroyers, etc.). T-SHMLs provides surface ships with the ability

to determine the HAZMAT authorized onboard and precludes stocking materials the ship does not use. The SHML database is available on the Naval Logistics Library Web site <https://nll2.ahf.nmci.navy.mil/shml/shmlmain.cfm>.

10.19.2.6 OSHA Hazard Communication Standard (29 CFR 1910.1200) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDS) (formerly Material Safety Data Sheets (MSDS)) for each hazardous chemical to users to communicate the products hazardous information. The SDS includes information, such as the properties of each chemical, the physical and environmental health hazards, protective measures, and safety precautions for handling, storing, and transporting the chemical.

10.19.2.7 The Hazardous Materials Information Resource System (HMIRS) contains SDS information on specific HAZMAT characteristics, such as packaging and OSHA compliant hazardous labeling requirements, shipping, and storage handling safety precautions to assist in the management of HAZMAT. HMIRS is available at Web site <http://www.dla.mil/HQ/InformationOperations/Offers/Products/LogisticsApplications/HMIRS/requestaccess.aspx> or on CD-ROM. OPNAVINST 5100.23 and OPNAVINST 5100.19 outline the Navy's HMIRS operations (both ashore and afloat) and provide HMIRS access information. NAVMC DIR 5100.8 outlines the Marine Corps Occupational Safety and Health (OSH) Program (Marine Corps only).

10.19.3 Requirements

The HMC&M Program applies to all Navy, Marine Corps, and other government activities performing maintenance or other functions in support of naval aviation.

10.19.3.1 ESOH Compliance

All aviation maintenance activities shall fully support and comply with federal, state, and local ESOH laws and regulations concerning HAZMAT handling, storage, use, reuse, minimization, and disposal, to include compliance with OPNAV M-5090.1, OPNAVINST 5100.19, OPNAVINST 5100.23, NAVSUP Publication 722, DODINST 6050.05, NAVMC DIR 5100.8, 29 CFR Part 1910, and 40 CFR Chapter VII.

NOTES: 1. Failure to comply with HAZMAT environmental laws and regulations could result in civil or criminal liability.

2. Per the Occupational Safety and Health Administration Global Harmonizing System, MSDS are now referred to as SDS. Existing MSDSs are valid until new SDSs are received.

10.19.3.2 Training and Qualification Requirements

All personnel who handle or use HAZMAT must receive HAZCOM training within 30 days of assignment and annually thereafter. OPNAVINST 5100.19 and OPNAVINST 5100.23 outline the job specific training requirements for specific types of HAZMAT including familiarization with storage and handling safety requirements and HAZMAT SDS information. Training shall be documented per [paragraph 10.1](#). Additional HMC&M training required depends on the job position.

a. Command HMC&M Program Manager:

- (1) Must be a commissioned officer or civilian equivalent.
- (2) Must be assigned as HMC&M Program Manager for a minimum of 12 months.
- (3) Complete the following training within 60 days of assignment:

(a) Introduction to Hazardous Materials Ashore Global Online course (Course A-493-0331) or Defense Hazardous Material/Hazardous Waste Handling course (Course 9E-F50/322-F34 (MT)).

(b) (CONUS activities) Introduction to Hazardous Waste Generation and Handling course (Course A-493-0080) as applicable to their CONUS duty location.

(c) (OCONUS activities) Overseas Hazardous Waste Facility Operations course (Course A-493-0093) as applicable to their OCONUS duty location.

(4) Complete the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Review course (Course A-493-0081) annual refresher training.

Note: D-level HMC&M Program Manager duties may be divided between an HMC&M Program Manager and Hazardous Waste (HW) Program Manager. Both are required to take the above training or equivalent.

b. Command HMC&M Supervisor:

(1) Must be E-5 (or above) or civilian equivalent.

(2) Must be assigned as a HMC&M Supervisor for a minimum of 24 months.

(3) Complete the following training within 120 days of assignment:

(a) Introduction to Hazardous Materials (Ashore) Global Online course (Course A-493-0331) or the Defense Hazardous Material/Hazardous Waste Handling course (Course 9E-F50/322-F34 (MT)).

(b) (CONUS activities) Introduction to Hazardous Waste Generation and Handling course (Course A-493-0080) as applicable to their CONUS duty location.

(c) (OCONUS activities) Overseas Hazardous Waste Facility Operations course (Course A-493-0093) as applicable to their OCONUS duty location.

(4) Complete the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Review course (Course A-493-0081) annual refresher training.

NOTES: 1. HMC&M Supervisors based at a detachment location in a different state than their parent command must complete the Hazardous Waste Generation and Handling course (Course A-493-0080) requirements for that state.

2. Completion of HMC&M Technician course (Course A-322-2600/2601) does not fulfill the requirement for Ashore HMC&M Supervisors. Introduction to Hazardous Material (Ashore) course (Course A-493-0080) are required only for Ashore commands.

c. Work Center Supervisors and Work Center HAZMAT Coordinators:

Must complete HAZMAT storage and handling training provided by the station HAZMINCEN within 30 days of assignment.

10.19.3.3 HAZMAT Documentation and Reporting

a. AHML:

(1) Only HAZMAT listed in the AHML may be used for aviation maintenance.

(2) If required HAZMAT is not listed on the AHML, submit an AHML Change Request via the SSAR Web site <https://ssar.nswc.navy.mil/Default.aspx>.

(a) If the HAZMAT is approved for use on an aviation weapon system, the AHML will be updated.

(b) If the HAZMAT is not approved, an alternative will be provided.

b. Ashore Work Center AUL:

(1) All HAZMAT used at an ashore facility must be reviewed by the local ESOH office prior to being added to the work center AUL.

(2) Only HAZMAT listed on the work center AUL shall be procured.

(3) Adding items to the work center AUL for HAZMAT listed on the AHML shall be performed in accordance with procedures established by the local ESOH offices.

(4) OPNAVINST 5100.23 states each activity shall assign a unique identifier (letter, number or alphanumeric) next to each item on the AUL. The label, SDS, AUL, and HAZMAT storage location inventory will use the same unique identifier for the HAZMAT item. The unique identifier will also be used on the SDS Training Documentation Form (Figure 10.19-1).

NOTES: 1. Local environmental regulations may not allow HAZMAT listed in the AHML to be used. If this occurs, submit an email to navair.hazmat.gm.fct@navy.mil for identification of a suitable alternative.

2. Implementation of the Hazardous Materials Management System (HMMS) provides for compliant SDS, AUL, and inventory requirements.

c. T-SHML:

(1) All HAZMAT used afloat must be authorized on the T-SHML with an AOB Code of A (Allowed – No restriction on use of this HAZMAT on surface ships) or R (Restricted – HAZMAT not allowed on surface ships except with specific restrictions).

(2) Updates to T-SHMLs for aviation HAZMAT requirements shall be submitted using the AHML Change Request from the AHML module in the SSAR Web site <https://ssar.nswc.navy.mil/Default.aspx>.

d. Work Center Logs – HAZMAT Storage Location Inventory:

Work center personnel shall maintain a written or electronic log of HAZMAT present in the work center. HAZMAT lists will contain the unique identifier, NSN or national item identification number (NIIN), nomenclature, and MIL SPEC or part number.

e. Work Center Logs HAZWASTE Generation Log:

Work center personnel shall maintain a written or electronic log of HAZWASTE collected in the work center in accordance with local command procedures (LCP).

10.19.3.4 HAZMAT Storage:

a. HAZMAT will be containerized, labeled, and stored per OPNAV M-5090.1 and any additional station or ship requirements.

b. HAZMAT will be stored in an approved storage location (e.g. container, locker, freezer, room, facility, etc.). Incompatible materials will be segregated per OPNAVINST 5100.19, Volume II, Chapter C23.

10.19.3.5 HAZWASTE Requirements:

a. HAZWASTE shall be stored per OPNAV M-5090.1 and any additional ship or station requirements.

b. Each container of HAZWASTE will have a HAZWASTE Generation Log and be labeled as HAZWASTE per OPNAV M-5090.1 paragraph 27-3.4b.

10.19.4 Responsibilities

10.19.4.1 COMNAVAIRSYSCOM:

- a. Manage the AHML and review AHML Change Requests for adding HAZMAT to T-SHML.
- b. Submit requests for updating the T-SHML to NAVSUP-WSS-M after confirming the requirement.
- c. Respond to emails sent to navair.hazmat.gm.fct@navy.mil.

10.19.4.2 Type Wing or Marine Aircraft Wing (MAW):

If not in a ship or station directive, publish an LCP per [Appendix D](#) for a HAZMAT Spill Emergency Response Plan with procedures to contain, report, and clean-up HAZMAT spills. An LCP will be submitted to the host ship or station environmental office to review for compliance with their Pollution Prevention Plan.

10.19.4.3 Commanding Officer (CO):

Designate a Command HMC&M Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

NOTES: 1. Helicopter Mine Countermeasures Squadrons will use the same HMC&M Program Manager and Supervisor for Aircraft Maintenance and Airborne Mine Countermeasures Maintenance Department.

2. The D-level designation letter will also designate the HW Program Manager, where applicable.

10.19.4.4 Maintenance Officer (MO) or D-level Environmental Division Director:

- a. Nominate, to the CO, a candidate for assignment as the Command HMC&M Program Manager that meets the qualifications per [paragraph 10.19.3.2a](#).
- b. Designate a Command HMC&M Supervisor that meets the qualifications per [paragraph 10.19.3.2b](#). Designation will be in writing via the MMP or SME listing.

NOTE: The HMC&M Supervisor assignment shall not be a collateral duty in those activities that have an OPNAV 1000/2 established billet.

c. Be knowledgeable of local ship or station environmental office and applicable DoD, local environmental, HAZMAT, and HAZWASTE laws, rules, regulations, and procedures pertaining to the Maintenance Department.

d. Publish LCPs per [Appendix D](#), if required to direct geographic, T/M/S specific, or command directed HMC&M actions not addressed in this NAMPSOP. O-level LCPs shall be submitted to the Wing or MAW for consideration of developing a Wing LCP.

10.19.4.5 Command HMC&M Program Manager:

- a. Complete a Computerized Self Evaluation Checklist (CSEC) assessment within 30 days of assignment as Program Manager and annually thereafter.
- b. Nominate, to the MO or D-level Environmental Division Director, a candidate for assignment as Command HMC&M Supervisor that meets the qualifications per [paragraph 10.19.3.2b](#).

- c. Immediately notify MO or D-level Environmental Division Director of any actual or potential HMC&M Program violations or noncompliance issues.
- d. Resolve potential or actual environmental, compliance, HAZMAT, or HAZWASTE related problems, as soon as possible.
- e. Direct HAZMAT refresher training, as deemed necessary, to resolve deficiencies noted on program audits and HAZMAT emergency response drills.
- f. Coordinate with the ship or station Environmental Office and Legal Department on environmental issues.
- g. Screen command environmental reports and records for accuracy prior to filing.

NOTE: D-level HMC&M Program Manager duties may be divided between the HMC&M Program Manager and the HW Program Manager.

10.19.4.6 Command HMC&M Supervisor:

- a. Maintain an updated library of SDS for all HAZMAT used within the command, either in paper format or an electronic database, such as the HMIRS, HMMS, or the HAZMINCENs data management system. If the SDS is not in the HMIRS, send an electronic copy to NAVSUP WSS-M (wraps.prime.fct@navy.mil) or facsimile to (717)-605-5219.
- b. Periodically spot check all HAZMAT storage locations and command work spaces to verify only materials listed in the AUL are available for use and are properly labeled, handled, and used.
- c. Manage the AUL and submit changes per [paragraph 10.19.3.3b](#).
- d. When afloat, verify all materials used are listed in the appropriate T-SHMLs and are properly labeled, handled, and used.
- e. Review and take action on recommended changes to the AUL and T-SHML.
- f. Use the CHRIMP facility established by the host ship or station.
- g. Assign a unique identifier to HAZMAT labels, corresponding SDSs, AUL, and SDS Training Documentation Form ([Figure 10.19-1](#)).
- h. Review and monitor shelf life extensions.
- i. Monitor the status of HAZMAT requisitions.
- j. Track completion of Work Center Supervisor and Work Center HMC&M Coordinator training per [paragraph 10.19.3.2c](#).
- k. Conduct a meeting with Work Center Supervisors or their designated HMC&M coordinator, at least quarterly, to discuss HMC&M procedures and disseminate new regulations and requirements.
- l. Control Maintenance Department HAZMAT storage facilities and HAZWASTE collection points.
- m. Verify all HAZMAT or HAZWASTE is properly containerized, labeled, and stored per OPNAV M 5090.1 and ship or shore requirements.
- n. Maintain a written or electronic log of HAZMAT material used, turned in for reuse, and disposed of as HAZWASTE.

o. Coordinate and supervise HAZMAT spill drills IAW local response procedures, no less than annually. Provide a written After Action Report to the MO or D-level Environmental Division Director summarizing the content of the drill, procedural discrepancies, and corrective actions.

p. Immediately inform the chain of command of any violations of HAZMAT or HAZWASTE procedures and coordinate corrective action.

q. Verify work centers are maintaining HAZWASTE Generation Logs and other required documents per OPNAV M-5090.1.

r. Maintain environmental reports and records to demonstrate compliance with the local HAZWASTE Management Plan.

s. (O and I level) Coordinate with ship or station HAZMINCEN six months prior to deployment to establish HAZMAT requirements.

t. (O and I level) Coordinate with station HAZMINCEN three months prior to detachment to establish HAZMAT requirements.

u. Maintain a program file to include:

(1) Applicable POCs, at a minimum, HMC&M Program AMMT Inspectors, Wing Inspector, HAZMINCEN Supervisor, Industrial Hygienist, Safety Officer, and Environmental Officer.

(2) AUL and active list of hazardous materials used within the command. This document shall include the unique identifier, NSN or NIIN, nomenclature, and MIL SPEC or part number.

(3) Program related correspondence and message traffic.

(4) References or cross-reference locator sheets.

(5) Reports on emergency spill drills performed for a period of one year.

(6) Most current CSEC assessment.

NOTES: 1. For D-level locations where the HMC&M Supervisor duties are divided between the HMC&M Program Manager and the HW Program Manager, the HMC&M Program Manager is responsible for HAZMAT requirements (a through o and r through t) and the HW Program Manager is responsible for HAZWASTE requirements (l through q).

2. D-levels do not have a MO, HMC&M Supervisor, Division Officer, or Work Center HMC&M Coordinators. The responsibilities of those positions are shared by the Environmental Division Director, HMC&M Program Manager, HW Program Manager (where assigned), Work Center Supervisor, and subordinate employees according to LCP.

10.19.4.7 Quality Assurance (QA) Officer:

Designate a QAR as the HMC&M Program Monitor. Designation will be in writing via the MMP or SME listing.

10.19.4.8 HMC&M Program Monitor:

a. Perform CSEC audits of the HAZMAT Program per [paragraph 10.7](#).

b. Periodically monitor HAZMAT storage facilities and HAZWASTE collection points to verify:

(1) All HAZMAT is properly containerized, labeled, and stored per [paragraph 10.19.3.4](#).

(2) All HAZMAT and HAZWASTE is stored in an approved storage location or container and incompatible materials are segregated per paragraphs [10.19.3.4](#) and [10.19.3.5](#).

c. Periodically, monitor work in progress to verify personnel are only using approved HAZMAT and the prescribed PPE.

10.19.4.9 Division Officers:

a. Periodically, spot check to verify HAZMAT used or stored in the division is being properly handled, collected, and disposed of per [paragraph 10.19.3.4](#).

b. Designate Work Center HMC&M Coordinators, at paygrade E-4 or above or civilian equivalent. Designation will be in writing via the MMP or SME listing.

c. Be knowledgeable of the requirements of this NAMPSOP, DoD and local environmental, HAZMAT, and HAZWASTE laws, rules, regulations, and procedures applicable to the division.

d. Immediately notify the Command HMC&M Program Manager of any violations with program compliance.

10.19.4.10 Work Center Supervisors:

a. Verify Work Center Supervisors and HAZMAT Coordinators complete training per [paragraph 10.19.3.2c](#).

b. Review and update the work center AUL and route change recommendations through the HMC&M Supervisor.

c. Verify shelf life limits are not exceeded on HAZMAT maintained in the work center.

d. Maintain HAZMAT records per paragraphs [10.19.3.3d](#) and [10.19.3.3e](#).

e. Provide the HMC&M Supervisor with a list of HAZMAT kept in the work center.

f. Periodically, spot check work in progress to verify personnel are only using approved HAZMAT and PPE.

g. Notify the HMC&M Supervisor before establishing new HAZWASTE streams or HAZWASTE collection points.

10.19.4.11 Work Center HMC&M Coordinators:

a. Assist the Work Center Supervisor in complying with the HMC&M Program.

b. Attend maintenance department or division HMC&M meetings.

c. Maintain an inventory of HAZMAT required to be in the work center and ensure shelf life has not expired.

d. Verify all HAZMAT used is on the work center AUL.

e. Maintain a supply of HAZMAT spill materials in the work center.

f. Conduct a weekly inspection of work center HAZMAT and HAZWASTE sites. Inspections will be documented in a written or electronic log spanning a minimum of 12 months of inspections.

- g. Verify HAZMAT and HAZWASTE containers are inventoried, labeled, segregated, and free of corrosion and leakage.
- h. Notify the HMC&M Supervisor when HAZWASTE collection drums or containers are full.
- i. Maintain the HAZWASTE Generation Log per [paragraph 10.19.3.3e](#).
- j. Prepare documentation for each container of HAZWASTE per [paragraph 10.19.3.5](#).

Safety Data Sheet (SDS) Training Documentation

UNIQUE I.D	SDS	PRODUCTNAME	MEMBER SIGNATURE	DATE	UNIQUE I.D	SDS	PRODUCT NAME	MEMBERSIGNATURE	DATE
1A	BKMDX	JP-5 FUEL(CHEVRON OIL COMPANY)							
1B	BHFNZ	JP-5 FUEL(EXXON COMPANY)							
2A.1	BPPCM	EPOXY PART A (UNITED RESIN)							
2A.2	BPPCN	EPOXY PART B (UNITED RESIN)							
3A	CLMF	HYDRAULIC FLUID, FIRE RESISTANT (TECH LUBE COMPANY)							
3B	BXYFC	HYDRAUUC FLUID (VELICOL COMPANY)							

Command: _____
Work Center: _____

Member (Print) _____

Figure 10.19-1: Safety Data Sheet (SDS) Training Documentation Form (Sample)

10.20 Intermediate Maintenance Activity (IMA) Component Repair Review and Individual Component Repair List (ICRL) Validation Procedures (NAMPSOP)

10.20.1 References

- a. NAVSUPINST 4423.29, Navy Uniform Source, Maintenance and Recoverability (SMR) Codes.
- b. NAVAIRINST 4423.12, Assignment and Application of Uniform Source, Maintenance and Recoverability Codes.

10.20.2 Introduction

10.20.2.1 Periodic reviews of component repair rates and the accuracy of the ICRL are key elements to an IMA achieving optimal productivity and cost efficiency. The ICRL is the primary reference for components processed through Aeronautical Material Screening Unit (AMSU) or Joint Aviation Screening Unit (JASU). Accuracy of the ICRL is critical to ensuring AMSU or JASU either inducts a component into the correct IMA work center for repair or expeditiously processes it for shipment to depot repair activities. Normally, the ICRL does not normally contain end items, such as the F414 Engine or A/S32A-30 Tow Tractor. However, IMAs may list end items on the ICRL if it is an effective reference for managing induction.

10.20.2.2 The COMNAVAIRFOR NIIN Analysis Tool (NAT) and the COMNAVAIRFOR Combined ICRL are two resources managed by COMNAVAIRPAC (Code N422B) to assist IMAs with reviewing their component repair capabilities and ICRL.

10.20.2.2.1 The NAT enables comparison of the RFI rate of all IMAs, by NIIN. CNAP N422B updates the NAT in April and October to provide activities with current data for conducting Component Repair Reviews. The NAT can be downloaded from the Share portal at [CNAP Share portal](#).

10.20.2.2.2 The COMNAVAIRFOR Combined ICRL is a compilation of ICRL extracts from all IMAs. The Combined ICRL can be downloaded from the Share portal at [CNAP Share portal](#). The Combined ICRL enables IMAs to:

- a. Determine the appropriate work center to induct items not listed on the local ICRL. Search the NIIN or commercial and government entity (CAGE) or part number (P/N) of ICRL to determine if item has been listed by other IMAs and identify which work center it was assigned to.
- b. Compare repair capability to other IMAs.
- c. Determine repair and return opportunities.
- d. Find names and e-mail addresses of ICRL Managers and NALCOMIS Maintenance Database Administrator (DBAs) of other IMAs.

10.20.3 Requirements

10.20.3.1 Periodicity

An IMA Component Repair Review and ICRL Validation shall be completed twice per year, during May and November, to review component repair performance and validate the accuracy of the ICRL. The major elements of the review are:

- a. Comparing RFI rates to other IMAs.
- b. Comparing ICRL Capability Codes (CC) to other IMAs.

- c. Checking status and resolving deficiencies for items with CC of X2, X3, and X6.
- d. Reviewing and trending beyond capability of maintenance (BCMs).
- e. Validating accuracy of ICRL data fields.

NOTE: CVN and L-Class AIMDs shall perform component reviews in accordance with pre-deployment milestones.

10.20.3.2 Review and Validation Procedures

a. Generate an Improvement Opportunities Report from the NAT by selecting the fiscal year under consideration, entering the activities ORG code, and an asterisk (*) for the work center. Review the report, investigate constraints to productivity, and annotate the report with the findings of the investigation.

NOTE: The RFI comparison percentage default setting for the Improvement Opportunities Report is 15%, which may be changed by the user.

b. Submit SM&R Code Change Requests for items repaired with an SM&R Code of PAOOO (Repair and Dispose of at the O-level), PAODD (No I-level Repair Authorized) or PA_ZZ (No Repair Authorized). SM&R Code Change Requests will be sent to the TYCOM Aircraft or Equipment Class Desk per the procedures of NAVAIRINST 4423.12. Status of previously submitted SM&R Code Change Requests will also be reviewed during the Component Repair Review.

NOTES: 1. One Touch Support (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>) shall be used as the primary reference for all ICRL data fields. If there are differences between One Touch Support and other references, One Touch Support takes precedence. Notify the COMNAVAIRFOR N422B Combined ICRL Team (<https://cpf.navy.deps.mil/sites/cnap/default.aspx>) of differences between One Touch Support and other sources.

2. SM&R Codes shall not be changed in the ICRL until official notification is received from NAVSUP WSS, NAVAIR, or the change is reflected in One Touch Support.

c. Review the BCM trend for each work center, by code and percentage of total component workload. BCM data shall be entered in a trend chart each month, covering a minimum 24 month period. Investigate BCM trends utilizing the NAT to determine RFI rates, BCM costs, BCM Codes and average time to reliably replenish (TRRs) to identify opportunities for cost effective improvements. Collaborate with IMAs that have a higher repair success rate to share best practices and improve site repair capability.

d. The AIRSpeed Continuous Process Improvement (CPI) Team shall evaluate the accuracy of TRR and Buffers for components that entered EXREP status at any time during the 6 month period.

e. Review each ICRL data field for accuracy and conformance with the requirements of [paragraph 10.20.3.4](#).

NOTE: Corrections to component data (Nomenclature, NSN, P/N, CAGE Code, FGC, work center assignment, COG, etc.) do not require an ICRL Change Request ([Figure 10.20-1](#)). Corrections shall be submitted to the ICRL Manager by memorandum or email, citing the specific reference for the correct data.

f. Use the COMNAVAIRFOR Combined ICRL to compare repair capability to other IMAs for items with a CC of A1. Any A1 item listed by another IMA as C1 will be investigated for the potential to improve the repair capability.

g. Review at least 50% of the X1 CC (Repair Not Authorized) items listed on the ICRL during the May review and the remaining items during the November review. Procedures:

(1) Validate that the SM&R Code for the item does not assign any repair capability to the I-level.

(2) Research the COMNAVAIRFOR Combined ICRL to determine if any other IMA is repairing the item and contact the repairing IMAs for information on the repairs they are able to perform. If warranted, submit an ICRL Change Request to change the X1 CC to C1/A1/R1.

(3) Update the ICRL Local Use column with the date the X1 item was reviewed.

Note: The X1 CC review may be broken into more frequent segments (monthly or quarterly) as long as 100% of X1 items are reviewed each year.

h. Review status of resolving deficiencies causing CCs of X2, X3, or X6.

i. Process ICRL Change Requests (Figure 10.20-1) for additions or deletions of items and changes to CCs.

10.20.3.3 Tailored ICRL Reviews.

Tailored ICRL reviews shall be conducted under the following conditions:

a. IMA assumes responsibility for a new T/M/S aircraft, engine, or mission system.

b. Currently supported aircraft, engines, or mission systems are modified.

c. New models of test and servicing equipment are installed.

10.20.4 ICRL data fields shall be annotated as follows:

NOTE: One Touch Support at (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>), shall be used as the reference for P/N, CAGE Code, and NIIN.

a. PART NO. Enter P/N or other reference number (if the P/N is not available) of the component. Ensure all elements of the P/N are entered, for example, dashes and slashes. If multiple P/Ns, all shall be listed.

b. CAGE. Enter CAGE Code used with the P/N. A specific P/N may have multiple CAGE Codes. If multiple CAGE Codes, all should be listed.

c. WUC. Enter WUC (up to 32 alphanumeric characters) that identifies the P/N. All repairable items must list the WUC specified in the DECKPLATE WUC Baseline Report. If a WUC cannot be determined, submit a Baseline Trouble Report (BTR) per paragraph 10.9, Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP).

d. TEC. Enter TEC applicable to the end item. A specific P/N may have multiple TECs. If IMA supports multiple TECs that use the same component, all shall be listed.

NOTE: The OOMA Baseline and DECKPLATE are the authoritative sources for TECs and WUCs and shall be used to verify the correct TEC/WUC for P/N.

e. SRC IND. Enter A, E, M, or S for those items requiring a history record or card. A = ASR/AESR, E = EHR, M = MSR, and S = SRC. Leave blank if no history record or card is required.

f. CC. Enter CC, which reflects the IMAs repair capability for the P/N. Refer to ICRL Capability Codes (Figure 10.20-2) for specific descriptions.

g. WC. Enter the work center designated as having repair or test and check capability.

h. SM&R. Enter SM&R Code for the specific P/N, CAGE Code, and NIIN as identified by One Touch Support at (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>).

NOTE: NAVSUPINST 4423.29 provides information on SM&R Code composition and specific information for Supply and Maintenance personnel. NAVAIRINST 4423.12 provides direction on submission SM&R Codes Change Requests.

i. NOMENCLATURE. Enter a brief description of the item using the same nomenclature as One Touch Support at (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>).

j. COG-MCC-FSC-NIIN-SMIC. Enter COG, MCC, FSC, NIIN, and SMIC as identified by One Touch Support at (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>).

k. TCC. Enter IMAs anticipated repair CC. ICRL Capability Codes (Figure 10.20-2) defines CCs. ICRL Requirements for Target Capability Codes (TCCs) and Target Capability Code Dates (TCC DTs) (Figure 10.20-4) provide guidelines for assigning TCCs.

l. TCC DT. Enter the Julian date, which approximates when the TCC will be achieved, not to exceed 180 days. ICRL Requirements for TCCs and TCC DTs (Figure 10.20-4) provides specific criteria.

NOTE: TCC is an anticipated future repair capability that is different from the current CC. TCC and CC are never the same. If no change in current capability is anticipated, TCC and TCC DT remain blank.

m. ICRL UPDATE DT. Date is automatically updated when information is changed.

n. BC. Enter a locally assigned number to identify a test bench within a work center.

o. LOC IND. Currently not used in NALCOMIS, will always be Y.

p. LOCAL USE. Entries in this column represent nonstandard data of significance only to the repair facility, on whose ICRL they appear, for example, to flag P/Ns, which are marked "Repair and Return" to other repair facilities, special notes, or to enter a repair capability based on use of the Huntron Tracker or Pin Point Program.

10.20.5 Responsibilities

10.20.5.1 NAVAIR Program Offices:

a. Perform a yearly review of the NAT to determine if IMA production conforms to the Maintenance Plan, specifically the SM&R Code and the planned overall I-level RFI Rate.

b. Coordinate with the responsible Program Office to correct deficiencies in SE, ATE, or other acquisition or engineering related factors that are constraining productivity.

c. Coordinate with COMNAVAIRFOR N422 in prioritizing Program Related Logistics (PRL) funding for IMA performance improvement.

10.20.5.2 COMNAVAIRPAC (N422B):

a. Produce the NAT.

b. Sixty days prior to each T/M/S aircraft Cost Performance Index (CPI) review, conduct a review of the NAT and send each supporting IMA a list of potential productivity degraders, to include:

(1) RFI rates 15% or more lower than the highest performing IMA with a particular emphasis placed on the T/M/S Aircraft Top Degraders List.

- (2) X1 CCs miscoded per the SM&R Code.
- (3) C3, X2, X3 and X6 CCs over 30 days old.

10.20.5.3 Maintenance Officer (MO):

- a. Publish a local command procedure (LCP) per [Appendix D](#) to specify additional procedures and responsibilities for accomplishing reviews, such as AIRSpeed Team involvement, timeline, and format for reporting the outcome of the review.
- b. Designate the MMCO/PCO as the Component Repair Review and ICRL Validation Program Manager. Designation will be in writing via the MMP.
- c. Review the results of the Component Repair Review and ICRL Validation results and direct any changes deemed necessary to most effectively provide I-level support.
- d. Review SM&R Code Change Requests before submission to the TYCOM.

10.20.5.4 Supply Officer:

- a. Assist the MO in developing LCPs per [Appendix D](#), if needed, to specify additional procedures for the Supply Department.
- b. Assign, in writing, a Supply ICRL Program Representative to manage Supply Department responsibilities for the ICRL.

10.20.5.5 Assistance Maintenance Officer (AMO):

- a. Validate requests to change CC to X3.
- b. Confirm the TYCOM or MAW cannot mitigate the skill shortfall.
- c. Verify required NECs and schools or OJT.

NOTES: 1. Requests to downgrade capability to X3 must have a TCC and TCC DT. If the Enlisted Distribution Verification Process shows personnel with that NEC or MOS reporting in the future, or a technician has been slated to report to a school to acquire the NEC or MOS, the date the technician reports or becomes available from school will be the TCC DT ([Figure 10.20-2](#) and [Figure 10.20-4](#)).

2. Technical skills deficiencies shall be reported in the activities Personnel Situation and Management, Enlisted Manning Inquiry, or Unplanned Loss Reports (or Marine Corps equivalents) per [paragraph 5.1.2.12.6.2c](#).

10.20.5.6 Maintenance Material Control Officer (MMCO) or Production Control Officer (PCO):

- a. Be responsible to the MO for maintaining optimal component repair productivity and verifying the accuracy of the ICRL.
- b. Conduct an audit of Component Repair Review and ICRL validation procedures within 30 days of assignment and annually thereafter. The Computerized Self Evaluation Checklist (CSEC) and the command's LCP shall be used as references for the audit.
- c. Designate an ICRL Manager to assist with managing the ICRL. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing. To facilitate continuity for at least one complete review cycle, the ICRL Manager shall be assigned for a minimum of one year. The ICRL Manager shall be E-5 or above and skilled in technical research using the following Web sites:

- (1) DECKPLATE at (<http://www.navair.navy.mil/logistics/>).
- (2) One Touch Support at (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>).
- (3) WebFLIS at (<https://www.dlis.dla.mil/PublicHome/webFLIS/default.aspx>).

d. Conduct Component Repair Reviews and ICRL Validations and provide a written report to the MO with a summary of findings, to include:

- (1) Actions taken on items with RFI rates that are 15% lower than the highest RFI rate in the NAT.
- (2) Justifications for additions/deletions of components and changes to CC.
- (3) SM&R Code Change Requests.
- (4) BCM trend reports and findings.
- (5) Division Officer reports on actions taken to improve productivity [paragraph 10.20.4.14d](#).

e. Debrief Production Control and Division Officers on the results of the Component Repair Review and ICRL Validation.

f. Act as final approver for ICRL Change Requests ([Figure 10.20-1](#)).

g. Review and verify that SM&R Code Change Requests are prepared per the procedures of NAVAIRINST 4423.12, prior to forwarding to the MO.

10.20.5.7 ICRL Manager:

- a. Complete the IMA Production Control Procedures course (Course C-555-0043).
- b. Be responsible to the MMCO for the maintenance of the ICRL.
- c. Provide ICRL data required for Component Repair Reviews.
- d. Provide training on ICRL data fields, use of references for validating data, procedures for annotating corrections, and procedures for submitting ICRL Change Requests to Work Center Supervisors, and Work Center ICRL Program Petty Officers, upon their initial assignment.
- e. Coordinate the completion of ICRL Change Requests ([Figure 10.20-1](#)) with the Work Center Supervisor and assign a tracking number.
- f. Prior to making changes or corrections to the ICRL, verify the component data is accurate using One Touch Support (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>).
- g. Coordinate the completion of ICRL Validations with the Work Center Supervisor:
 - (1) Provide each Work Center ICRL PO/NCO with a copy of their portion of the ICRL and assign a due date for completing the review.
 - (2) Hold annual refresher training for Work Center ICRL POs or NCOs on the ICRL data fields and how to use the references for validating data. Provide direction on the manner for annotating corrections and for submitting ICRL Change Requests.
 - (3) Upon completion of work center validations, conduct a meeting to include a Production Control Representative (E-6 or above), Work Center Supervisor, Work Center ICRL Program PO or NCO, Supply

ICRL Program Representative, and an AMSU or JASU representative to review and validate the recommended changes.

(4) After validating work center inputs, forward ICRL Change Requests to Production Control for review prior to forwarding to the MMCO for approval.

h. Take action on ICRL Error messages. As AMSU or JASU inducts components, the W/C, WUC, TEC, CAGE Code, and P/N blocks from the MAF or WO are compared to the activities ICRL. When these data elements do not match, an ICRL Error Mailbox message is created. If ICRL is correct and the MAF/WO documentation is wrong, the ICRL Manager will delete the ICRL Error message and have the NALCOMIS DBA correct the MAF/WO. If ICRL is incorrect, the ICRL Manager will correct the discrepancy.

i. Maintain a program file to include:

(1) POCs.

(2) Program correspondence and message traffic.

(3) References and cross-reference locator sheets for program information.

(4) Results of the most current CSEC assessment.

(5) Paper or CD copy of the current ICRL.

(6) Copies of ICRL Change Requests ([Figure 10.20-1](#)) and supporting data. Copies shall be maintained on file for a minimum of 1 year after final action.

(7) Copies of ICRL Validation Reviews that shall be maintained on file for a minimum of one year.

(8) Copies of Tailored ICRL Reviews per [paragraph 10.20.3.3](#) shall be maintained on file for a minimum of two years.

10.20.5.8 Production Control:

a. Coordinate Division Component Repair Reviews with ICRL Manager.

b. Review ICRL Change Requests before forwarding to the MMCO for approval.

10.20.5.9 NALCOMIS DBA:

a. Issue the special maintenance qualification (SMQ) for incorporating ICRL changes only to the ICRL Manager.

b. Register as the Activity DBA on the COMNAVAIRFOR Combined ICRL [Share portal](#).

c. Quarterly, forward an ICRL extract to CNAP N422B for building the COMNAVAIRFOR Combined ICRL. CNAP N422B promulgates extract submission times and procedures via naval message.

d. Assist with Component Repair Reviews. Enter the NIINs of repaired components into the COMNAVAIRFOR NAT and provide the MMCO with a list of NIINs where the activities RFI rate is 15% or more below the highest RFI rate listed in the NAT.

10.20.5.10 AMSU/JASU:

a. Initiate an ICRL Change Request ([Figure 10.20-1](#)) for P/Ns being inducted for the first time. Confer with Production Control to determine which work center will receive the inducted item.

b. Verify the P/N and CAGE Code on the incoming component matches the entries on the WO, and the P/N and CAGE Code entries on the ICRL. Accuracy of P/Ns includes, but is not limited to, slashes and dashes to prevent duplication of P/Ns in the ICRL. If P/N and CAGE Code do not match the ICRL, AMSU will submit an ICRL Change Request (Figure 10.20-1)

c. Screen discrepancies against X1 CC items. X1 items with minor discrepancies, for example, broken/missing knobs or fasteners, shall be referred to Production Control to determine if repair is possible.

10.20.5.11 Supply ICRL Program Representative:

a. Manage the Supply Department responsibilities for the ICRL, to include assisting with maintaining accuracy of the ICRL by reviewing CAGE, P/N, and NIIN entries, per paragraph 9.1.16.

b. Review ICRL Change Requests (Figure 10.20-1) initiated by AMSU or JASU for accuracy and forward to the ICRL Manager.

10.20.5.12 Division Officers:

a. Designate Work Center ICRL Petty Officers or NCOs using the Work Center ICRL Program Petty Officer Designation (Figure 10.20-3).

b. Review ICRL Change Requests (Figure 10.20-1) and forward to the ICRL Manager.

c. Review SM&R Code Changes and forward to the MMCO or PCO.

d. Review the results of Component Repair Review and ICRL Validations and provide a memorandum to the MMCO outlining actions taken to improve component repair performance and capability. Specific comment shall be made on efforts to resolve X2, X3, and X6 items.

10.20.5.13 Work Center Supervisors:

a. Nominate an E-4 or above to the Division Officer for designation as Work Center ICRL Program PO/NCO.

b. Verify the accuracy of the ICRL Validation before submission to the ICRL Manager.

c. Verify ICRL Change Requests (Figure 10.20-1) before forwarding to the Division Officer for review. Justifications on change requests shall fully explain the reason for the change and the anticipated impacts, including average number of components processed on a yearly basis, current RFI rate vs. projected RFI rate, and impact to AVDLR and consumables cost.

10.20.5.14 Work Center ICRL Program Petty Officer or NCO:

a. Upon initial assignment, receive training from the ICRL Manager on the procedures for reviewing ICRL Validations and submitting ICRL Change Requests (Figure 10.20-1).

b. Conduct ICRL reviews per the direction of the ICRL Manager.

c. Submit ICRL Change Requests (Figure 10.20-1) to the Work Center Supervisor for review.

d. Keep the Work Center Supervisor current on the status of equipment, tools, facilities, and tech data required for components with X2 and X6 CCs.

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15 Jan 2017

Tracking Number (Assigned by ICRL Manager)					
1. Date:		Initiating Work Center:		POC:	
2. Requested Action:		a. Initial Induction Screening	b. Addition:	c. Deletion:	d. Capability Code Change:
Current CC:		TCC:	TCC Date:		
3. Part Data:					
a. Nomenclature:		b. NSN:	c. P/N:		d. CAGE:
					e. COG:
					f. FGC:
g. WUC:		h. TEC:	i. SM&R:		j. Logbook Record Type:
4. Demand & Cost Information:		a. Demand last 12 months:			b. RFI last 12 months:
c. BCM Rate:		d. AVDLR net cost per item:			e. Total AVDLR cost last 12 months:
ICRL Manager:				Date:	
5. Additional Equipment/Tool Requirements (Required for Additions or CC Changes to X2):					
a. Additional Equipment Required:				Requisition Number:	
IMRL Manager:				Date:	
b. Additional Tools Required:				Requisition Number:	
TCP Coordinator:				Date:	
6. Additional Technical Data Requirements (Required for Additions or CC Changes to X6)					
Technical Data Required:				Requisition Number:	
CTPL:				Date:	
7. Additional Skills Requirements (Required for requests to add capability to change CC to X3)					
a. NEC/MOS Requirement:				b. School Requirement:	
AMO/Manpower Manager:				Date:	
8. Division Recommendation and Justification:					
W/C Supervisor:				Date:	
Branch/Division Chief:				Date:	
Division Officer:				Date:	
9. Production Control Recommendation:					
Production Control Chief:				Date:	
10. MMCO/PCO: Approved/Disapproved (Circle One)				Remarks:	
MMCO/PCO:				Date:	
11. ICRL Manager:					
a. ICRL Updated:				b. NALCOMIS OIMA Updated:	
ICRL Manager:				Date:	

Note: Bold areas of ICRL Change Request Indicate signature and date signed requirement.

Figure 10.20-1: ICRL Change Request

ICRL CAPABILITY CODES

C1 - Capable of Repair. This code identifies items for which some failures can be repaired and tested, and Ready For Issue (RFI) certification performed. C1 will be assigned for all items for which the Source, Maintenance, and Recoverability (SM&R) Code indicates repair should be performed by the activity unless there is a deficiency in equipment (X2), skill (X3) or technical data (X6) that prevents repair.

C3 - Limited Repair. This code identifies items for which the normal range of repair cannot be accomplished. However, repair to some extent beyond test and Ready For Issue (RFI) certification can be performed. Example: The IMA is capable of landing strut repair, to include replacement of out-of-tolerance bearings. However, the bearing press is not working, which prevents the repair of landing struts with out-of-tolerance bearings.

A1 - Check and Test Only. This code identifies items, which can be tested for range of common failures, but cannot be repaired at the activity.

M1 - Assemble/Manufacture. This code identifies material, which can be assembled or fabricated by the I-level activity.

R1 - Repair and Return to Originating Activity. This code identifies components that are automatically and routinely sent from one shore I-level activity to another shore I-level activity for repair and return. The R1 capability code is NOT to be used in an afloat IMAs ICRL. This code can only be used with Work Center 05A.

X1 - Repair Not Authorized. This code indicates the activity is not authorized to repair the component. This code is equivalent to BCM 1 and indicates that the I-level activity is not authorized to repair the component. X1 may not be used for field level repairable equipment and can only be used with Work Center 05A.

X2 - Lack of Authorized Equipment/Tools/Facilities. This code indicates authorized equipment, tools, or facilities are not available. This code must always be accompanied by a Target Capability Code (TCC) and a Target Capability Code Date (TCC DT).

X3 - Lack of Required Technical Skills. This code indicates required skills are not available. This code must always be accompanied with a TCC and a TCC DT.

X6 - Lack of Technical Data. This code indicates repair cannot be accomplished due to lack of maintenance manuals, drawings, test program disk/tape, test program instruction, etc., which describe detailed repair procedures and requirements. A TCC and a TCC DT must always accompany this code.

Z1 - Consumable Material. This code identifies material assigned SM&R Code with ZZ in the fourth and fifth positions or B in the fourth position for which a repair program has not been planned but a capability exists to repair a limited range of failures, or for which the I-level activity is capable of performing a servicing function, for example, flushing or cleaning.

D1 - Full D-Level Capability. This code identifies items for which the full range of failures can be completely repaired, reworked, or overhauled. This code signifies an activity as being a DRP.

D3 - Partial D-Level Capability.

Figure 10.20-2: ICRL Capability Codes

From: _____
Division Officer

To: _____
(Work Center ICRL Petty Officer/NCO)

Subj WORK CENTER ICRL PETTY OFFICER/NCO DESIGNATION

Ref: (a) COMNAVAIRFORINST 4790.2

1. You are assigned as the Work Center _____ ICRL Petty Officer/NCO and shall perform your duties per reference (a). Your duties will include, but are not limited to the following:

- a. Be responsible for the proper upkeep of work center ICRL.
- b. Attend training as directed by the ICRL Manager.
- c. Research all items listed in the ICRL using applicable IPBs and One Touch Support at (<https://www.onetouch.navy.mil/ots/content/home/index.jsp>) to ensure all data entered is complete and accurate.
- d. Ensure ICRL reviews are complete by the due date assigned by the ICRL Manager.
- e. Ensure all items with capability codes X2 and X6 have the required materials on order and provide documentation to the Work Center Supervisor and the Program Manager.

2. I certify that I have read and understand the responsibilities of the assigned billet and shall perform the duties to the best of my ability.

_____	_____
Assignee Signature	Date
_____	_____
Division Officer Signature	Date

Original to:
Individual's Qualification/Certification Record
Copy to: ICRL Manager

Figure 10.20-3: Work Center ICRL Petty Officer/NCO Designation

ICRL REQUIREMENTS FOR TARGET CAPABILITY CODES AND TARGET CAPABILITY CODE DATES

1. Target Capability Codes (TCCs) and Target Capability Code Dates (TCC DTs) apply only to the following capability codes:

X2 - Test equipment/special tools required to perform the maintenance on the component is not available. The Work Center Individual Component Repair List (ICRL) Petty Officer shall coordinate obtaining required equipment or tools with the Individual Material Readiness List (IMRL) Manager or Tool Control Program (TCP) Coordinator. Documentation to support the request for the equipment will be provided by the IMRL Manager by message to the Support Equipment Controlling Authority requesting the equipment, or a revision, be submitted to add it to the activities IMRL. If the item is a special tool (non IMRL), the TCP Coordinator shall provide a document number to the Work Center ICRL Petty Officer and ICRL Manager and provide status updates during the quarterly ICRL review until the tool is received.

X3 - Use when a specific Navy Enlisted Classification (NEC)/Military Occupational Specialty (MOS) is required. If the Enlisted Distribution Verification Process showing personnel with that NEC/MOS reporting in the future, or a technician has been slated to report to a school to acquire the NEC/MOS, the date the technician will become available from school will be the TCD.

X6 - When used, the Work Center ICRL Petty Officer shall place the required publication on order through the Central Technical Publications Library (CTPL), or required test program disk, test program medium, test program instruction, or test program set through the IMRL Manager. The document number or message DTG must be provided to the ICRL Manager when submitting changes during semi-annual ICRL review.

2. TCCDTs shall not exceed 180 days and shall be reviewed and updated semi-annually. During the semi-annual ICRL review, each Work Center ICRL Program Petty Officer shall validate the X2 and X6 document numbers to ensure they are still valid and update as required.

3. When the equipment or technical data is received, the IMRL Manager, TCP Coordinator, or CTPL shall ensure the Work Center ICRL Program Petty Officer is notified so the ICRL changes can be submitted to the ICRL Manager.

4. The ICRL Manager shall update the ICRL as changes are received.

Figure 10.20-4: ICRL Requirements for Target Capability Codes and Target Capability Code Dates

10.21 Electrostatic Discharge (ESD) Protection and Electromagnetic Interference (EMI) Reporting Program (NAMPSOP)

10.21.1 References

- a. MIL-HDBK-263B, Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Initiated Explosive Devices) (Metric).
- b. MIL-HDBK-773A, Electrostatic Discharge Protective Packaging.
- c. NAVAIR 01-1A-23, Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair.
- d. NAVAIR 17-600-193-6-2, Periodic Maintenance Requirements Manual, PACE Soldering Station, PACE Incorporated.
- e. NAVAIR 17-600-193ESD-6-1, Preoperational Checklist, Electrostatic Discharge (ESD) Protection Devices.
- f. NAVAIR 17-600-193-6-1 Preoperational Checklist, PRC-2000-2M System Electronic Rework Power Unit.
- g. NAVSUP Publication 723, Navy Inventory Integrity Procedures.
- h. OPNAVINST 3750.6R, The Naval Aviation Safety Management System.

10.21.2 Introduction

10.21.2.1 Improper handling of Electrostatic Discharge Sensitive (ESDS) devices can cause components to fail. Electromagnetic Interference (EMI) can cause degraded performance of mission critical systems. This NAMPSOP establishes policy for handling, protecting, storing, and transporting of ESDS devices or components, and for the reporting and mitigation of EMI incidents.

10.21.2.2 COMNAVAIRSYSCOM (AIR 4.1.13) is the technical lead for the Air Systems Electromagnetic Interference Corrective Action Program (ASEMICAP).

10.21.3 Requirements

10.21.3.1 Training

All personnel that handle, inspect, package, transport, or maintain ESDS items must receive job specific initial training and annual refresher training per [paragraph 10.1](#). Initial training must be completed prior to personnel being allowed to handle or independently perform maintenance on ESD items without the supervision of a trained individual.

NOTE: The ASEMICAP Web site (<https://asemicap.navair.navy.mil>) contains ESD or EMI training materials. Training can be requested through the Web site or from local ASEMICAP Fleet Support Specialists.

10.21.3.2 ESDS Component Protection

- a. All electronic weapons replaceable assembly (WRAs), shop replaceable assembly (SRAs), and electronic components will be considered ESDS.
- b. ESDS items exposed to ESD or handled without protective equipment will be considered non-ready for issue material (NRFI) and must be tested prior to certifying RFI.

c. ESDS items not rendered ESD safe will be handled at ESD protected work areas that comply with requirements identified in NAVAIR 01-1A-23, WP 004 00.

d. Uninstalled WRAs and SRAs must have external cannon plugs and connector pins covered with the provided connector cap or an ESD Cap. If authorized covers are not available, ESD finger cots or ESD tape can be applied. SRAs can be protected by an inner layer of anti-static pink poly material and an outer layer of static shielding material, or a bag with both characteristics.

NOTE: Approved ESD protective materials and caution labels are listed on the ASEMICAP Web site (<https://asemicap.navair.navy.mil>).

e. Affix ESD caution labels to or near the face of ESDS WRA or SRA unless NAVAIR 01-1A-23, WP 004 00 specifies affixing the caution label to the outside of the static shielding material. If ESD caution labels are not available, mark the outside of the static shielding in such a way as to identify that an ESDS item is inside.

f. ESDS items must be placed in ESD safe condition immediately after removal from aircraft or equipment, and will remain in ESD safe protective packaging until time of repair or re-installation.

g. While being transported, ESDS items will remain in ESD protective packaging. To minimize the potential for foreign object damage (FOD) to aircraft, only ESD finger cots or ESD tape will be used when ESDS WRAs are transported to flight lines or flight decks.

h. Prior to storage or shipment, properly protected ESD safe components that require extra protection from physical damage will be placed in a protective container or wrapped with standard bubble wrap secured with tape. Affix an ESD caution label to the outside of the package to identify the item as ESDS.

NOTES: 1. Pink poly bubble wrap, bags, and caps provide physical protection, but do not provide shielding protection.

2. ESD protective materials, for example, conductive caps and anti-static shielding bags, are a FOD hazard and must be controlled.

i. Maintenance kits (in-flight troubleshooting kits, squadron pack-up kits, I-level maintenance assist kits, etc.) containing ESDS items will be constructed with a protective layer of antistatic material, such as pink poly bubble wrap, that physically surrounds each ESDS item.

j. ESDS items received from supply that are not packaged per MIL-HDBK-773A will be reported via a Supply Discrepancy Report (SDR) per NAVSUP Publication 723.

10.21.3.3 ESD Protected Work Areas

a. ESD protected work areas will be identified with signs or posters per NAVAIR 01-1A-23, WP 004 00.

b. ESD protective work areas will contain, at a minimum, a properly configured Electrostatic Protected Area (EPA) per MIL-HDBK-263B, WP 004 00.

c. ESD protective floor mats and heel grounders must be used in work areas where non anti-static carpeting is installed and in areas where personnel wrist straps do not provide adequate protection per NA01-1A-23, WP 004 00.

d. ESD protected areas must be grounded per NAVAIR 01-1A-23, WP 004 00. If ESD protective wrist straps cannot be used, personnel must wear ESD Heel Grounders per NAVAIR 01-1A-23, WP 004 00.

WARNING: FOR PERSONNEL SAFETY, EQUIPMENT MUST BE DE-ENERGIZED WHEN WRIST STRAPS ARE IN USE.

e. No prime generators, as defined in NAVAIR 01-1A-23, WP 004 00, will be closer than 24 inches to an ESD protected work area.

f. Preoperational checks for ESD protected work areas must be performed per NAVAIR 17-600-193ESD-6-1 or NAVAIR 17-600-193-6-1. Preoperational checks must be documented on an OPNAV 4790/52 Preoperational Inspection Record.

g. Periodic maintenance for ESD protected work areas used for 2M repairs will be performed per NAVAIR 17-600-193-6-2 or NAVAIR 17-600-193ESD-6-2.

h. O-level activities that remove or replace SRAs or components within WRAs must have an ESD protected work area, or, at a minimum, an ESD Field Service Kit.

(1) When practical, portable ESD field service kits will be used when removing or replacing individual SRAs or components onboard aircraft during in-flight or ground maintenance. Personnel, work mats, and wrist straps must be grounded against the aircraft frame during maintenance on ESDS items.

(2) Squadron detachments deployed aboard air capable ships must have an ESD field service kit, at a minimum, if required to handle ESD SRAs or components within WRAs.

NOTE: When an ESD field kit is not practical while performing maintenance on aircraft, the technician will use a wrist strap connected to the aircraft structure or achieve an equipotential grounding status by contacting the aircraft structure.

i. Supply Departments and Material Control must have an ESD protected work area or a portable ESD station. Supply Department and Material Control personnel must receive job-specific training on handling ESDS items. Training is available on the ASEMICAP Web site (<https://asemicap.navair.navy.mil>).

10.21.3.4 EMI Incident Reporting

a. When EMI incidents occur, ground maintenance personnel will receive a debrief from pilots and aircrew as soon as possible to collect operational circumstances and flight effects of the incident.

b. Operational circumstances occurring in-flight must be duplicated, as closely as possible, during ground troubleshooting.

c. EMI incidents will be reported as a Hazardous Material Report (HMR) per [paragraph 10.9](#) and as a Safety Report per OPNAVINST 3750.6.

10.21.4 Responsibilities

10.21.4.1 Type Wing or Marine Aircraft Wing:

Publish a training guide and lessons for T/M/S job specific ESD and EMI training per [paragraph 10.21.3.1](#).

10.21.4.2 Maintenance Officer (MO) or Production Officer:

a. Publish local command procedures (LCPs) per [Appendix D](#), if required, to specify T/M/S or other command directed actions for ESD or EMI not addressed in this NAMPSOP. O-level LCPs must be submitted to the Type Wing or Marine Aircraft Wing for consideration of a Wing LCP.

b. Designate an ESD or EMI Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

10.21.4.3 Supply Officer:

- a. Publish an LCP, if required to specify T/M/S or other command directed actions for ESD or EMI not addressed in this NAMPSOP.
- b. Designate a Supply Department ESD Protection or EMI Reporting Program Coordinator. Designation will be in writing via the MMP or SME listing.
- c. Verify personnel complete ESD training prior to handling ESDS items.
- d. Stock ESDS protective materials in the local supply system.
- e. Comply with ESD protective packaging and handling requirements of MIL-HDBK-773A when shipping and stocking ESD items (including pre-expended bins).

10.21.4.4 ESD Protection or EMI Reporting Program Manager:

- a. Perform an assessment of the program within 30 days of assignment and annually thereafter per [paragraph 10.7](#).
- b. Remain current in ESD protection requirements of the references listed in [paragraph 10.21.1](#).
- c. Publish a lesson guide based on information in MIL-HDBK-263B and the ASEMICAP Web site (<https://asemicap.navair.navy.mil>) if there is no Wing lesson guide.
- d. Provide initial and annual refresher ESD training per [paragraph 10.21.3.1](#).
- e. Conduct monthly inspections of ESD protected work areas with the Work Center Supervisor to verify areas are maintained per [paragraph 10.21.3.3](#) and ESD protective materials are available and being used.
- f. Remain current on EMI problem historical data in ASEMICAP EMI Problem Database (<https://asemicap.navair.navy.mil>) for their T/M/S aircraft.
- g. Interview aircrew and maintenance personnel, and coordinate completion of the EMI Incident actions of [paragraph 10.21.3.4](#).
- h. Maintain a program file to include:
 - (1) POCs.
 - (2) Program related correspondence and message traffic.
 - (3) References and cross-reference locator sheets.
 - (4) Most current Computerized Self Evaluation Checklist (CSEC) assessment.
 - (5) (O-level) The most current ASEMICAP Web site (<https://asemicap.navair.navy.mil>) list of EMI problems related to T/M/S aircraft maintained.

10.21.4.5 Supply Department ESD Protection or EMI Reporting Program Coordinator:

- a. Be responsible to the Supply Officer for implementing the program.
- b. Remain current in ESD and EMI protection requirements referenced in [paragraph 10.21.1](#) and the ASEMICAP Web site (<https://asemicap.navair.navy.mil>).

- c. Provide initial and annual refresher training to Supply Department personnel per [paragraph 10.21.3.1](#).
- d. Conduct monthly work area reviews to verify sufficient ESD protective materials are available and utilized, and ESD protected work areas are maintained per [paragraph 10.21.3.2](#) and [10.21.3.3](#).
- e. Periodically inspect ESDS items that have been prepared for shipment to verify the packaging requirements of MIL-HDBK-773A are being followed.
- f. Maintain a program file to include:
 - (1) POCs.
 - (2) List of Supply personnel who have completed training.
 - (3) Program related correspondence and message traffic.
 - (4) References and cross-reference locator sheets.

10.21.4.6 Quality Assurance (QA) Officer:

Designate an avionics Quality Assurance Representative (QAR) or Quality Assurance (QA) Specialist as the ESD Protection and EMI Reporting Program Monitor. Designation will be in writing via the MMP or SME listing.

10.21.4.7 ESD Protection and EMI Reporting Program Monitor:

- a. Perform audits per [paragraph 10.7](#).

NOTE: Other QARs or QA Specialists may monitor the program, but the designated ESD or EMI Program Monitor must perform the annual program audits.

- b. Provide ESD or EMI protection training to all QARs or QA Specialists applicable to their areas of responsibility.
- c. Coordinate with the QA of the discrepant activity to resolve packaging, handling, and transportation discrepancies.

10.21.4.8 Division Officers:

Periodically monitor work in progress in ESDS Work Centers to verify ESD protective measures are being taken.

10.21.4.9 Work Center Supervisors:

- a. Perform spot checks of equipment, and work in progress to verify compliance with the ESD Protection and EMI Reporting Program.
- b. Verify ESDS items are being properly packaged for turn-in per [paragraph 10.21.3.2](#).
- c. Submit SDRs on improperly protected ESDS items received from supply per [paragraph 10.21.3.2j](#).
- d. Coordinate with the ESD Protection and EMI Reporting Program Manager for annual refresher training of work center personnel.
- e. Periodically spot check parts shelves and bins to verify ESDS items are in their proper protective packaging when AWM, AWP, or in long term local storage.

10.21.4.10 Maintenance Personnel:

Comply with ESD handling and protection requirements while performing maintenance on ESDS items.

10.21.4.11 Material Control Division Personnel:

Verify retrograde ESDS items are properly packaged before accepting them from work centers per [paragraph 10.21.3.2](#).

10.22 Miniature/Microminiature (2M) Program (NAMPSOP)

10.22.1 References

- a. NAVAIR SE-004-PQS-000, Certification Manual for Miniature/Microminiature (2M)/Module Test and Repair (MTR) Program.
- b. NAVAIR 01-1A-23, Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair.
- c. NAVAIR 17-15-99, PRC-2000-2M System, Electronic Rework Power Unit.
- d. NAVAIR 17-600-193-6-2, Periodic Maintenance Requirements Manual, PACE Soldering Station, PACE Incorporated.

10.22.2 Introduction

10.22.2.1 The Miniature/Microminiature (2M) Program establishes requirements for training and certification and recertification of 2M Repair Technicians and 2M activities.

10.22.2.2 The complexity of electronic assemblies and the sensitivity of their components to physical and electrical overstress requires repairs be performed by formally trained and certified 2M Repair Technicians at designated 2M activities. NAVAIR SE-004-PQS-000 contains the combined NAVAIR AND NAVSEA 2M certification and recertification requirements, and provides guidance for managing and monitoring 2M repair facilities and technicians.

10.22.2.3 NAVAIR (AIR-6.7) manages aviation 2M program requirements. The In-Service Engineering Activity (ISEA) responsible for the Navy's 2M program is COMMANDER, CRANE DIVISION, NAVAL SURFACE WARFARE CENTER, CODE GXST, BLDG 3287E, 300 HWY 361, CRANE IN 47522-5001, DSN 482-1510 or COMM (812) 854-1510.

10.22.3 Requirements

10.22.3.1 2M Repairs:

2M repairs will be performed only by activities designated 2M capable by their ACC or TYCOM.

10.22.3.2 2M Technician Certification:

- a. Miniature repair certification requires completion of the Miniature Electronics Repair Course (A-100-0072).
- b. Microminiature repair certification requires completion of the Miniature Electronics Repair Course (A-100-0072) and the Microminiature Electronics Repair Course (A-100-0073).

NOTE: 2M Certification Identification Cards will be issued upon completion of the initial course and upon completion of each recertification.

10.22.3.3 2M Technician Recertifier:

- a. Be E-5 or above with Navy NEC 9503, or Marine MOS 6423 (military only), or civilian equivalent.
- b. Meet NAVAIR SE-004-PQS-000 requirements.
- c. Be designated as a Micro-miniature Collateral Duty Inspector (CDI) per [Chapter 7](#).

10.22.3.4 Recertification:

- a. 2M Technicians, 2M Technician Recertifiers, and CNATTU 2M Instructors must be recertified every 18 months.
- b. Recertification must be conducted and documented per NAVAIR SE-004-PQS-000.

NOTE: Activities without assigned 2M Technician Recertifiers will request recertification from the nearest activity with 2M Technician Recertifiers.

10.22.3.5 2M Workstations:

- a. 2M workstations must conform to the requirements specified in NAVAIR 01-1A-23 and NAVAIR SE-004-PQS-000.

NOTE: Due to the complex nature of certain electronic systems and the advancement of new technologies, specialized 2M equipment may be used, if approved by the NAVAIR 2M Program Manager (AIR-6.7.1) in writing, prior to use.

- b. I-level 2M workstations will be fully outfitted as specified in NAVAIR SE-004-PQS-000, [Appendix F](#), including consumables.
- c. D-level 2M facilities will maintain at least one fully outfitted micro workstation and miniature workstation, with consumables locally accessible. Other 2M workstations used daily by D-level artisans will only be outfitted with what is needed for their workload.
- d. 2M workstations will be maintained per NAVAIR 17-15-99 and NAVAIR 17-600-193-6-2 (as applicable).

10.22.3.6 2M Facilities:

- a. 2M facilities must meet the certification requirements specified in NAVAIR 01-1A-23 and NAVAIR SE-004-PQS-000.
- b. D-level Safety Departments must verify medical evaluations and industrial hygiene surveys. Safety Department verification of 2M facilities must be obtained whenever the industrial hygiene survey expires or the 2M Work Center is relocated.

10.22.4 Responsibilities

10.22.4.1 COMNAVAIRFOR and NAVAIR Aviation Maintenance Management Teams (AMMT):

- a. Validate and certify 2M repair sites in compliance with NAVAIR 01-1A-23 and NAVAIR SE-004-PQS-000 2M program requirements during the site's Aviation Maintenance Inspection (AMI).
 - (1) The COMNAVAIRFOR AMMT will perform certifications for all Navy and Marine Corps aviation 2M sites not assigned to NAVAIR.
 - (2) The NAVAIR AMMT 2M Evaluator will perform certifications for D-level 2M maintenance facilities and other NAVAIR activities.
- b. Report 2M repair site certifications in the 2M database per NAVAIR SE-004-PQS-000.

NOTE: Per NAVAIR SE-004-PQS-000, paragraph 3-13, a site recertification is required if a 2M workstation is relocated to a different room, building, or MF. 2M repair sites may request an interim certification in advance of their next AMI by submitting a message or letter to their AMMT with a copy of an Industrial Hygiene Survey meeting the requirements of NAVAIR 01-

1A-23. The Industrial Hygiene Survey should be conducted on the new facility prior to moving the equipment, to verify the new site meets the requirements of NAVAIR 01-1A-23.

10.22.4.2 Maintenance Officer (MO):

a. Designate a senior technician possessing Navy NEC 9526 or Marine MOS 6423 as the 2M Program Manager (normally the 2M Work Center Supervisor). Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

NOTE: D-level Program Managers do not have to possess Navy NEC 9526 or Marine MOS 6423, but must be qualified in 2M procedures.

b. Designate 2M Technician Recertifiers. Designation will be in writing via the MMP or SME listing.

c. Publish a local command procedures (LCP) per [Appendix D](#), if required to address any 2M procedures not covered in this NAMPSOP.

10.22.4.3 Program Manager:

a. Perform a program assessment within 30 days of assignment as Program Manager and annually thereafter, per [paragraph 10.7](#).

b. Coordinate corrective action of program audit discrepancies.

c. Maintain a program file to include:

(1) List of 2M certified technicians, including name, rate, work center, certification level, date of last certification/recertification, next recertification due date, and projected rotation date.

(2) Copies of 2M Certification Identification Cards for all qualified technicians.

(3) List of 2M workstations per NAVAIR SE-004-PQS-000, [Appendix F](#), including equipment location and serial numbers.

(4) POCs.

(5) Program related correspondence and message traffic.

(6) References or cross-reference locator sheets.

(7) Most current Computerized Self Evaluation Checklist (CSEC) assessment.

10.22.4.4 Quality Assurance (QA) Officer:

Designate an avionics QAR as the 2M Program Monitor. Designation will be in writing via the MMP or SME listing.

10.22.4.5 QA 2M Program Monitor:

a. Perform program audits per [paragraph 10.7](#).

NOTE: Other QARs or QA Specialists may monitor the program, but the designated 2M Program Monitor must perform the annual program audit.

b. Provide recommendations for corrective action for recurring 2M program discrepancies.

c. Spot check work in progress to verify 2M CDIs are inspecting only the repair level they are certified to perform.

10.22.4.6 2M Technician Recertifiers:

a. Issue 2M Certification Identification Cards to recertified 2M Technicians and report 2M recertifications in the 2M database per NAVAIR SE-004-PQS-000.

b. Assist the Program Manager with developing and providing training to 2M Technicians.

c. Maintain a 2M Technician Recertifier file, to include:

(1) Copies of 2M Certification Identification Cards for all certified technicians.

(2) List of 2M Technician certification and recertification due dates.

(3) Completed 2M recertification performance tests.

(4) (D-level) Copies of performance information memorandums.

NOTE: Duplicate paper records are not required, if the activity is using an electronic training management system, such as ASM.

10.22.4.7 2M Work Center Supervisor:

a. Verify all personnel performing 2M repairs are certified 2M Technicians per this NAMPSOP.

b. Spot check work in progress to verify electrostatic discharge (ESD) protective measures are observed when performing 2M repairs per NAVAIR 01-1A-23.

c. Assign each 2M Technician sufficient workload to maintain the dexterity and proficiency required to perform quality 2M repairs.

d. If workload does not consistently cover all facets of NAVAIR SE-004-PQS-000, conduct training projects in those 2M repair techniques not routinely encountered.

NOTE: Training projects should be performed using NRFI electronic assemblies. DLA Disposition Services may be a source for 2M training material.

e. Conduct periodic maintenance and maintain 2M workstations per NAVAIR 17-15-99 and NAVAIR 17-600-193-6-2 (as applicable).

f. Stock the minimum required consumables, tools, and SE for accomplishing the site's 2M repair responsibilities, as specified in NAVAIR SE-004-PQS-000, [Appendix F](#).

10.22.4.8 Center for Naval Aviation Technical Training Unit (CNATTU) 2M Instructors:

a. Be currently certified 2M Instructors and complete recertification training every 18 months per NAVAIR SE-004-PQS-000.

b. Request and complete 2M training site certifications every 12 months per NAVAIR SE-004-PQS-000.

10.23 Gas Turbine Engine Test System (GTETS) and Global Test Facility (GTF) Operator Training and Certification Program (NAMPSOP)

10.23.1 References

- a. NAVAIRNOTE 4700, Gas Turbine Engine Maintenance Assignment By Depot Maintenance, Intermediate Maintenance and In-Service Support Center Activities.
- b. NAVPERS 18068F, Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards.
- c. Applicable Gas Turbine Engine Test System Maintenance Technical Manuals.
- d. N98-NTSP-A-50-1003/A, Navy Training Systems Plan for the Aviation Engine Test Systems (AETS).

10.23.2 Introduction

10.23.2.1 The Gas Turbine Engine Test System (GTETS) and Global Test Facility (GTF) Operator Training and Certification Program establishes procedures for training and designating jet engine test facility GTETS or GTF operators and qualifiers.

10.23.2.2 Proper operation of GTETS facilities is critical to safe and thorough aircraft engine testing. Improper operation can result in mishaps, reduced operational readiness, and unnecessary engine replacement costs. All GTETS or GTF operators and qualifiers must be knowledgeable of operational characteristics, safety precautions, and emergency procedures in order to reduce the risk of personal injury and equipment damage.

10.23.2.3 Reworked, repaired, or overhauled gas turbine engines normally require operational test or functional check in a GTETS or GTF. GTETS or GTF operators and qualifiers are certified to operate a particular test system or test cell and type engine or equipment. Only qualified test cell operators or test cell operators under instruction are authorized to perform test cell operations.

10.23.2.4 NAVAIRNOTE 4700 specifies what activities are authorized to repair specific model aircraft engines and what level of repair they are authorized to perform.

10.23.2.5 Test cells (excluding GTFs) are being replaced with commercial off the shelf computer controlled facilities, referred to as Jet Engine Test Instrumentation (JETI) for turbo-fan type engines, Shaft Engine Test Instrumentation (SETI) for turbo-shaft type engines, and Turbo Prop Test Instrumentation (TPTI) for turbo-prop engines. For standardization, all models of the new test cell have identical instrumentation.

10.23.3 Training Requirements

10.23.3.1 In-service GTETS or GTF operator training and on-job training (OJT) can be provided by a NATEC Joint Test System (JTS) representative or a GTETS or GTF qualifier for the test cell and type engine or equipment operated.

NOTE: The GTETS or GTF qualifier does not have to be assigned to the trainee's command.

10.23.3.2 GTETS or GTF operator training shall be conducted using the specified NTSP in conjunction with locally prepared site specific OJT. OJT syllabuses shall be jointly developed by the Program Manager, GTETS or GTF qualifiers, and Quality Assurance (QA) personnel and must be approved for use by the MO. Marine Corps personnel shall use the Maintenance Training Management and Evaluation Program (MATMEP) Individual Qualification Record (IQR) for Aircraft Power Plant Test Cell Operator (MOS 6023).

10.23.3.3 NATEC JTS representative on-site training is normally performed coincident with the initial installation and calibration of the test facility. Activities should also request NATEC on-site training when needed to improve technical knowledge and skill.

10.23.3.4 GTETS or GTF operator training shall include site-specific OJT conducted with locally developed OJT syllabuses. OJT shall include, as a minimum, the following task or knowledge areas:

- a. Use of test system and type engine maintenance technical manuals.
- b. Engine test system instrumentation and controls.
- c. Gas turbine engine operating parameters and limitations.
- d. Engine test facility installed systems; such as fuel, lubrication, engine start, fire extinguishing, vibration and temperature monitoring systems.
- e. Installation and inspection of engine on run trailer, including engine or adapter servicing and FOD prevention inspections.
- f. Pre-operational inspections of engine test system and engine per maintenance technical manuals.
- g. Safety and responsibility briefs, including communications and hand signals to be used.
- h. Simulated emergencies, such as fuel spills or leaks, engine or propeller over speed, engine fire, throttle input failure, unstable engine, and personnel injuries per maintenance technical manuals.
- i. Engine performance calculations and documentation.
- j. Post-operational inspections of engine test system and engine per maintenance technical manuals.
- k. Engine and test system troubleshooting procedures per maintenance technical manuals.
- l. A minimum of two performance runs as the GTETS or GTF operator under the direct supervision of a GTETS or GTF qualifier or NATEC JTS representative as part of the pass or fail practical examination.

NOTES: 1. Personnel designated as GTETS or GTF operators by a previous command on the same engine test system and type engine are not required to complete a performance run prior to taking the practical examination.

2. Activities without GTETS qualifiers may request assistance in training personnel from the nearest activity authorized to conduct GTETS operator training for the same test system and type engine(s) being certified on. Activities without GTF qualifiers may request assistance from the system OEM for the same test system and type support equipment (SE) the trainee is being certified on.

10.23.3.5 GTETS or GTF qualifiers shall be trained by a NATEC JTS representative for the test system and type engine. Previous training by NATEC for designation as a GTETS or GTF operator does not satisfy the requirement for training as a GTETS or GTF qualifier.

10.23.4 Designation Requirements

10.23.4.1 Operator Designation

a. Upon completion of training, nominees for test cell operator must pass a written exam administered by QA or Training Management Office and a practical examination (pass or fail) administered by a GTETS qualifier or NATEC JTS representative. Recertification written and practical exams shall emphasize safety and emergency procedures.

b. Operators shall be designated, in writing, by the MO. The designation shall indicate the engine test system and type engines qualified to operate. Designation or re-designation may be documented in ASM.

NOTES: 1. GTETS operators previously designated at another command may be designated after passing a written examination administered by QA or Training Management Office and a practical examination administered by a GTETS qualifier or NATEC JTS representative. Previously designated GTETS operators failing either the written or practical examinations must complete refresher training or the entire OJT syllabus, as determined by the Program Manager. Previous certification records shall be retained in the IQR or ASM.

2. GTF operators previously designated at another command may be designated per local policy.

10.23.4.2 Qualifier Designation

a. Must be an E-5 or above with NEC 6422 or MOS 6023, or a qualified artisan designated as an operator in the activity.

b. Must be a designated operator on each test cell and type engine they will be a GTETS or GTF qualifier on.

c. Must receive GTETS or GTF qualifier training from a NATEC or JTS representative and be thoroughly familiar with safety and emergency procedures.

d. GTETS or GTF qualifiers shall be designated, in writing, by the MO. The designation shall indicate each test cell and type engine the qualifier is certified to train personnel on. Designation or re-designation may be documented in ASM.

10.23.5 Proficiency and Recertification Requirements

10.23.5.1 Proficiency Requirements

GTETS or GTF operators and qualifiers are required to maintain proficiency for each type engine for which they are certified on. As a minimum, GTETS or GTF operators and qualifiers shall run any type or model aircraft engine every 90 days and shall run at least one engine for each type certified every 12 months. Engine runs for proficiency may be run on any type test cell with a certified operator for that test cell. Engine runs shall be documented in the IQR or ASM. Every attempt should be made to maintain proficiency on all type engines for safety and effectiveness. Failure to maintain proficiency on one type of engine within a 12 month period will result in loss of certification for that specific type engine.

10.23.5.2 Recertification Requirements

a. GTETS or GTF operators shall be recertified every 24 months. Recertification requires passing the same written and practical examinations required for initial certification for each type engine they are qualified on. Afloat activities that are unable to operate their test cell for extended periods of time (greater than 3 months) may perform their recertification practical examinations at another activity with a NATEC JTS representative or GTETS or GTF qualifier designated, in writing, for that type test cell. For planning purposes and operational commitments, recertification examinations can be completed up to 3 months prior to the GTETS or GTF operator's certification expiration date.

NOTE: GTETS or GTF qualifiers are not required to recertify as GTETS or GTF operators while assigned to the same command as long as proficiency is maintained per [paragraph 10.23.5.1](#).

b. Certification for GTETS or GTF operators exceeding 24 months since designation or recertification will be suspended until they have completed refresher training by a GTETS or GTF qualifier or NATEC JTS representative and pass the written and practical examinations. GTETS or GTF operators failing either the written or practical examination, must complete refresher training or complete the entire OJT syllabus as determined by the Program Manager.

10.23.6 Responsibilities

10.23.6.1 NAVAIR:

Maintain the Navy Training Systems Plan (NTSP) for Aviation Engine Test Systems. GTF do not require a NTSP.

10.23.6.2 Maintenance Officer (MO):

a. Designate the Power Plants Division Officer as the GTETS and GTF Operator Training and Certification Program Manager. Designation will be in writing via the Monthly Maintenance Plan (MMP) or Subject Matter Expert (SME) listing.

b. Publish local command procedures (LCPs) per [Appendix D](#) for designation or re-designation of GTETS or GTF operators and qualifiers. Local command procedures shall include OJT syllabuses tailored to each engine test system the activity operates and differentiate the operation of each type engine or equipment tested.

c. Designate, in writing or ASM, GTETS qualifiers. GTF qualifiers will be designated per local policy. Prior to designation, GTETS or GTF qualifiers shall be trained per [paragraph 10.23.5](#), and recommended by a NATEC JTS representative and the GTETS or GTF Program Manager.

d. Designate or re-designate, in writing or ASM, GTETS operators. GTF operators will be designated per local policy.

e. Suspend GTETS or GTF operator designation when a mishap involves injury to a person or damage to an engine or equipment until an investigation is completed. If operator error is determined to be a contributing factor to the mishap, designation shall not be reinstated until remedial training has been completed and the operator has demonstrated knowledge and skill in the area of deficiency.

f. Revoke GTETS or GTF operator designation when the operator:

- (1) Misuses or abuses GTETS equipment.
- (2) Displays unsafe operator habits or behavioral traits.
- (3) Is involved in a mishap determined to be caused by negligence.
- (4) Is cited for significant or recurring safety infractions.

g. Submit a Navy Enlisted Classification (NEC) Change Request NAVPERS 1221/6 to award NEC 6422 to individuals initially designated as GTETS Operators (Navy IMAs only).

10.23.6.3 Program Manager:

NOTE: Upon designation as Program Manager, an assessment will be performed within 30 days and annually thereafter per the procedures in [paragraph 10.7](#).

a. Provide GTETS and GTF Operator Training and Certification Program indoctrination and annual training to personnel assigned to the Test Cell Work Center. Training includes an overview of GTETS operator and qualifier designation requirements, engine run procedures, safety precautions and emergency procedures. Document training in ASM. If ASM is unavailable, document training on the NAMP Indoctrination Training Sheet ([Figure 10.1-3](#)) and file in the IQR.

b. Develop written and practical examinations for testing GTETS or GTF operators and qualifiers.

c. Develop local (in-service) training lectures and OJT syllabuses for specific types of engines run procedures, used for training and the designation of GTETS or GTF operators. CBT via AMTCS or NKO (<https://wwwa.nko.navy.mil>) and NATEC JTS representative GTF Program Manager lesson guides may be used in lieu of local lesson guides. Marine Corps personnel shall use the MATMEP IQR for Aircraft Power Plant Test Cell Operator (MOS 6023).

d. Verify NATEC JTS representatives and GTETS or GTF qualifiers are certified on the specific test cell and type engine or equipment they are providing training on.

e. Monitor GTETS or GTF operators and qualifiers to validate they are maintaining proficiency requirements per [paragraph 10.23.5](#).

f. Publish a schedule of GTETS or GTF operator recertification due dates. Verify completion of recertification requirements of [paragraph 10.23.5](#).

g. Prepare a checklist for startup, shutdown, and emergency procedures to be used during engine test system operation. The checklist shall be posted within the control cab.

h. Maintain a program file to include:

(1) List of GTETS or GTF operators and qualifiers, including name, rate or rank, or series or grade, type test cell, type engines, date designated, operator recertification due date, and projected rotation date.

(2) Copy of GTETS or GTF qualifier designation letters (if not documented in ASM).

(3) Copy of documentation from NATEC JTS representative of the GTETS Qualifier training conducted for each qualifier assigned.

(4) POCs.

(5) Program correspondence and message traffic.

(6) References or cross-reference locator sheets.

(7) Most current program assessment and QA audit.

10.23.6.4 Quality Assurance (QA) Officer:

Designate a QAR or D-level Quality Assurance Specialist as the GTETS or GTF Training and Certification Program Monitor. Designation will be in writing via the MMP or SME listing. This assignment does not preclude other QARs D-level Quality Assurance Specialist from monitoring this program, but the designated Program Monitor has overall responsible for tracking and verifying the monitors are performed.

10.23.6.5 Program Monitor:

a. Perform audits using CSEC per [paragraph 10.7](#).

b. Review CSEC information and reports and provide recommendations to the chain of command.

c. Administer written certification and recertification examinations for GTETS or GTF operators. (Any QAR or Training Management Office personnel from the activity can administer the written examination.)

10.23.6.6 GTETS or GTF Qualifier:

a. Administer practical examinations for GTETS or GTF operators.

- b. Assist the Program Manager in developing GTETS or GTF operator training.

10.23.6.7 GTETS and GTF Supervisors:

- a. Manage engine test workload assignments to ensure GTETS and GTF operators and qualifiers maintain the proficiency and recertification requirements of [paragraph 10.23.5](#).

- b. Ensure a minimum of one designated test cell operator, one technician, and one safety observer are present during all aircraft engine operations, in addition to applicable fire bottle watches and support equipment operators.

10.24 Aviation Maintenance Inspection (AMI), Maintenance Program Assessment (MPA), and Material Condition Inspection Program (MCI) (NAMPSOP)

10.24.1 Reference

OPNAVINST 4790.2J, The Naval Aviation Maintenance Program (NAMP).

10.24.2 Introduction

10.24.2.1 This NAMPSOP directs the performance of Aviation Maintenance Inspections (AMI), Maintenance Program Assessments (MPA), and Material Condition Inspections (MCI).

10.24.2.2 An AMI is a formal Aircraft Controlling Custodian (ACC) inspection to verify compliance with the Naval Aviation Maintenance Program (NAMP) and related directives. AMIs include drills and practical examinations to validate proficiency and application of correct procedures. The AMI is based on the same Computerized Self Evaluation Checklist (CSEC) standards used by maintenance activities to self-audit their NAMP compliance, as specified in the NAMP Compliance Auditing Program, [paragraph 10.7](#).

10.24.2.3 An MPA is performed by the ACC, Type Wing, or MAW to determine areas of deficiency and assist in performance improvement. Additionally, the MPA for a Carrier or L-Class Ship Aircraft Intermediate Maintenance Department (AIMD) serves as CNAF certification that the AIMD is prepared to support air wing operations during the turnaround training operations. MPAs are conducted using the CSEC and Wing Supplemental CSEC, if applicable.

10.24.2.4 MCIs are formal inspections by the ACC, Type Wing, or MAW to assess the material condition of aircraft/ or equipment and adherence to corrosion prevention and treatment procedures. O-level MCIs are conducted by Type Wing or MAW Corrosion Inspectors using standardized type/model/series (T/M/S) Panel/Area Lists. I-level MCIs are conducted by the COMNAVAIRFOR Aviation Maintenance Management Teams (AMMT) in conjunction with AMIs to evaluate the overall material condition of support equipment (SE), Aircraft Armament Systems (AAS), Armament Weapons Support Equipment (AWSE), and Mobile Facilities (MFs).

NOTE: T/M/S Panel/Area Lists and related Focus Area Lists (FAL) are available on the [CNAP Share portal](#).

10.24.3 Requirements

10.24.3.1 AMI

10.24.3.1.1 AMIs will be conducted by COMNAVAIRFOR for O-level and I-level Navy and Marine Corps activities operating or supporting aircraft assigned to COMNAVAIRPAC, COMNAVAIRLANT, COMNAVAIRFORES, and CNATRA.

10.24.3.1.2 AMIs for O-level, I-level, and D-level activities assigned to NAVAIR will be conducted by COMNAVAIRSYSCOM.

10.24.3.1.3 AMI Periodicity:

a. Deploying squadrons and CVN or L-Class AIMDs must receive an AMI prior to deployment. AMIs for deploying squadrons will be completed no earlier than 120 days and no later than 60 days prior to deployment. AMIs for CVN or L-Class AIMDs will be performed during the integrated or advanced phase of the Fleet Response Plan. Time between AMIs for deploying activities will not exceed 30 months, with the exception of CVN and L-Class ships undergoing an extended maintenance period.

NOTE: To meet short notice deployments, COMNAVAIRFOR (N422) may direct the Type Wing or MAW to conduct an MPA, in lieu of an AMI. The MPA results will be provided to

COMNAVAIRFOR (N422) for review. If the results of the MPA are determined acceptable, COMNAVAIRFOR may extend the AMI due date by a maximum of 12 months.

b. Marine Aviation Logistics Squadron (MALS) and squadrons that deploy detachments. Helicopter Maritime Strike Squadron (HSM), Fleet Logistics Support Squadron (VR), Fleet Tactical Support Squadron (VRC), and Fleet Air Reconnaissance Squadron (VQ) will receive an AMI every 24 months, not to exceed 30 months.

c. Activities permanently based Outside Continental United States (OCONUS) will receive an AMI every 24 months, not to exceed 30 months.

d. Non-deploying squadrons or units, for example, Training Wing (TRAWING), Fleet Replacement Squadron (FRS), Marine Helicopter Squadron (HMX), Naval Strike and Air Warfare Center (NSAWC), Test Evaluation Squadron (VX), Navy Composite Squadron (VFC), Operations Maintenance Division (OMD), and Fleet Readiness Center (FRC) will receive an AMI every 30 months, not to exceed 36 months.

10.24.3.1.4 AMI Grading Criteria:

a. NAMP programs and processes will be graded as “On-Track”, “Off-Track”, or “Needs More Attention” based on the criticality and scope of deficiencies. Definitions:

Critical - The discrepancy creates a hazardous or unsafe condition that directly affects the airworthiness of aircraft or aircrew, or causes risk of death or injury to maintenance personnel.

Major - The discrepancy is less than “Critical”, but increases the risk of aircraft or SE failure, degrades the quality of maintenance performed, increases the cost or man-hours to perform maintenance, or increases the risk of a maintenance accident or health impact to maintenance personnel.

Minor - Does not meet the criteria of “Critical” or “Major”, but is a deviation from specified procedures.

b. Drills and practical examinations will be graded “Satisfactory” or “Unsatisfactory” based on the activity’s ability to accurately complete the task in accordance with specified procedures, correctly respond to emergent situations, availability and proper use of personal protective equipment (PPE), and adherence to safety precautions.

c. Squadrons and IMAs will receive a point grade for overall performance on the AMI. Details on the AMI grading process, including information on “Critical” and “Major” discrepancies, drills, and practical examinations are posted on the [CNAP Share portal](#).

10.24.3.2 MPA

10.24.3.2.1 MPA Periodicity:

a. MPAs for deploying squadrons and MALS will be conducted by the Type Wing or MAW, mid-cycle between AMIs. MPAs are optional for non-deploying activities. If performed, MPAs for non-deploying activities will be performed mid-cycle between AMIs.

b. MPAs for CVN and L-Class AIMDs will be conducted by COMNAVAIRFOR during the basic phase of the Fleet Readiness Training Plan, approximately 60 days prior to the first major operational training event with the CVW or ACE. COMNAVAIRFOR will also provide a post-yard assist visit for CVNs or L-Class AIMDs that have undergone an extended refueling or overhaul or are newly commissioned.

NOTE: MPAs performed solely to prepare an activity for an AMI are not required.

10.24.3.2.2 MPA Grading Criteria:

MPAs will be graded in the same manner as AMIs per [paragraph 10.24.3.1.4](#).

10.24.3.3 MCI

10.24.3.3.1 I-level MCIs will be conducted during the AMI and MPA. A grade of “Pass” or “Fail” will be assigned to each item of support equipment (SE), aircraft armament systems (AAS), armament weapons support equipment (AWSE), and mobile facility (MF) inspected.

10.24.3.3.2 O-level MCIs will be performed by the Type Wing or MAW. Activities with multiple T/M/S aircraft, for example, VX-9, VX-1, and NSAWC will request an MCI from the closest Type Wing or MAW with responsibility for that T/M/S aircraft.

10.24.3.3.3 MCI Periodicity:

a. Deploying squadrons, detachments, and expeditionary units will receive the following MCIs:

- (1) Pre-deployment MCI, no later than 60 days prior to deployment.
- (2) Mid-cycle MCI, during the deployment (operations permitting).
- (3) Post-deployment MCI, no later than 60 days after return.

NOTES: 1. Permanently forward deployed activities, for example, CVW-5, VMM-262, and HM Detachments will receive an MCI every 18 months.

2. Marine Corps Unit Deployment Program squadrons/detachments that assume custody of permanently sited aircraft will receive an MCI 30 to 60 days prior to the end of their deployment.

3. Time between MCIs for deploying activities will not exceed 24 months.

b. Non-deploying squadrons, for example, FRS and squadrons that deploy detachments will receive an MCI every 24 months.

c. Two aircraft or 25% (whichever is greater) of assigned aircraft must be inspected. Aircraft selected for MCI must include:

(1) Aircraft with the longest time since completion of the last scheduled depot rework event (planned maintenance interval (PMI), integrated maintenance concept/program (IMC/P), etc.).

(2) Aircraft with the shortest time since completion of the last phase or major corrosion special inspection.

(3) All aircraft in preservation will be inspected for compliance with directed preservation requirements.

(4) Post-deployment MCIs must include at least one of the aircraft inspected during the pre-deployment MCI. In squadrons or detachments with four or less aircraft, the post-deployment inspection must also include any aircraft not inspected during the pre-deployment or mid-deployment MCIs.

d. FAL areas with O-level MRC correlation must be inspected during MCI events. Waivers may be requested through COMNAVAIRFOR (N422). T/M/S MCI Panel/Area Lists are posted on the [Share portal](#).

e. A minimum of 25% of assigned mission equipment and ALSS must be inspected.

NOTE: The MCI Team Officer may expand the scope of the MCI if deemed necessary to determine the extent and causal factors of unsatisfactory conditions in the initial group of aircraft inspected.

10.24.3.3.4 MCI Grading Criteria:

a. Material Discrepancies:

Non-Flight Critical (NFC) (1 point). Any discrepancy that is not directly related to safety of flight and there is no visible sign of corrosion or corrosive attack; for example, working rivets, delamination, and loose hardware.

Foreign Objects (2 points). Two points will be assessed for soft foreign objects, such as plastic wire bundle straps, accumulated dirt, and liquids. Hard foreign objects near flight control components or engine control components will be graded as Flight Critical (FC) and assessed 5 points.

Flight Critical (FC) (5 points). Any discrepancy directly related to safety of flight or aircrew.

NOTE: Any flight-critical discrepancy is a grade of "Fail" for the discrepant aircraft. The aircraft must be restricted from flight until the discrepancy is corrected.

b. Corrosion Discrepancies:

Category 1: Light Corrosion (1 point). Protective coating is scarred, or etched, and the condition of the metal is characterized by discoloration. White/red/black corrosion products are present on the surface of the component being evaluated, but no significant attack is present. This type of corrosion can normally be removed by light sanding.

Category 2: Moderate Corrosion (2 points). Appearance is similar to light corrosion, with the addition of blistering, or evidence of scaling and flaking of the coating or paint system. Mild white/red/black corrosion products are present on the component surface. This type of corrosion normally requires extensive hand sanding or light mechanical sanding to remove.

Category 3: Severe Corrosion (3 points). The general appearance is similar to moderate corrosion, with the addition of severe inter-granular corrosion, blistering, scaling, flaking, or exfoliation. Corrosion attack has resulted in significant base metal loss. Voluminous white/red/black corrosion products are present on the component surface. The structural integrity of the component may or may not be compromised. Extensive mechanical sanding or grinding is required to remove this type of corrosion.

Category 4: Flight Critical Corrosion (5 points). Perforation of the base metal has occurred. No metal remains at the point of severest corrosion attack. The component has lost structural integrity.

NOTE: Any Category 4 corrosion discrepancy is a grade of "Fail" for the discrepant aircraft. The aircraft must be restricted from flight until the discrepancy has been corrected.

10.24.4 Responsibilities

10.24.4.1 COMNAVAIRFOR (N422):

a. Organize AMMTs to inspect, train, and assist Navy and Marine Corps O-level and I-level activities assigned to CNAP, Commander, Naval Air Forces Atlantic (CNAL), Commander, Naval Air Forces Reserve (COMNAVAIRFORR) and CNATRA ACCs. AMMTs will consist of Navy and Marine Corps aviation ground maintenance officers and senior enlisted personnel (E7-E9).

b. Each quarter, publish the schedule of AMIs/MPAs planned for the following 12 months.

c. Update the O-level and I-level portions of the CSEC as changes to references and requirements occur.

- d. Publish advisories to inform activities of common problems found during AMIs, MPAs, and MCIs.
- e. Maintain a database of AMIs and MCIs and analyze performance statistics to verify acceptable performance standards are being met.

10.24.4.2 NAVAIR (AIR 5.0):

- a. Organize an AMMT to inspect, train, and assist O-level, I-level, and D-level activities assigned to NAVAIR ACC. AMMT shall consist of Navy and Marine Corps aviation ground maintenance officers and senior enlisted personnel (E7-E9).
- b. Update the D-level portions of the CSEC as changes to references and requirements occur.

10.24.4.3 Type Wing or MAW:

- a. Organize a Maintenance Assessment Team (MAT) comprised of members from the maintenance staff to conduct MPAs and MCIs and assist activities in compliance with the NAMP.
- b. Conduct MPAs and MCIs per the intervals and procedures specified in paragraphs 10.24.3.2 and 10.24.3.3.
- c. Publish an MCI instruction using the ACC T/M/S Panel/Area List to identify, at a minimum, the aircraft areas to be inspected. MCI instructions must emphasize critical safety of flight systems (ejection seats, flight controls, engines, etc.) and the areas identified in the FAL with Maintenance Requirements Card (MRC) correlation.

NOTE: Type Wings and MAWs responsible for the same or similar T/M/S aircraft, for example, FA-18A thru D, will coordinate a joint MCI Instruction to ensure standardization.

- d. Report MCI results, trends, and discrepancy mitigation efforts to the ACC (Figure 10.24-1). MCI results will be submitted to CNAP (Codes N421 and N422) each quarter, no later than 15 January, 15 April, 15 July, and 15 October.
- e. Review MCI Corrective Action Letters (Figure 10.24-2) and direct additional actions, if deemed necessary.
- f. Publish advisories to provide activities with information on common problems noted in Wing MPAs and MCIs and other maintenance related information.
- g. Review AMI Corrective Action Reports (Figure 10.24-3) and verify prompt corrective action has been taken for Off-Track Programs, safety of flight, and safety of personnel discrepancies.

10.24.4.4 AMMT and Type Wing or MAW MAT:

- a. Conduct audits, using the CSEC, to verify compliance with the NAMP and related directives.
- b. Conduct drills and practical examinations to verify the activity has sound, safe maintenance practices, and is able to respond appropriately to emergency situations.
- c. Provide training and assistance in areas of deficiency.
- d. Trend discrepancies and submit changes to the NAMP and other governing directives when inadequate policy is determined to be a contributing factor to non-compliance.
- e. Provide instruction to the activity when a safety of flight or safety of personnel discrepancy warrants immediate action.

f. Provide the ACC or Wing Commander with a recommendation for re-inspection, when deemed necessary to verify correction of deficiencies and sustained performance improvement.

10.24.4.5 Maintenance Activities:

a. Take immediate action to correct critical safety of flight and safety of personnel discrepancies.

b. (O-level) Within 30 days of completion of the inspection, provide the Wing or MAW with a Corrective Action Report for any “Fail” discrepancies noted during MCIs ([Figure 10.24-2](#)), and any programs graded Off-Track or Needs More Attention, and any safety of flight or safety of personnel discrepancies noted during AMIs and MPAs ([Figure 10.24-3](#)).

c. (O-level) Document Wing MCIs on a Wing MCI Conditional WO and record the MCI point scores in the Corrective Action block of the 020 WO. Procedures:

(1) Corrective Action will either read: “PASS (total point score)// MATERIAL (point score)// CORROSION (point score)” or “FAIL (total point score)// MATERIAL (point score)// CORROSION (point score)//”.

NOTE: To facilitate MCI data analysis, sign-off must be verbatim with no additional punctuation or spaces.

(2) Satellite WOs will be used to document man-hours expended for pre-and-post MCI aircraft preparation. All discrepancies will be documented on conditional fix WOs using the WUC associated with the discrepant item. For corrosion discrepancies, the narrative in the WO Discrepancy block will include water line (WL) , butt line (BL), and fuselage station (FS), or similar information that provides a clear description of the location of the corrosion.

NOTE: A presentation on MCI documentation procedures is available for download in the Corrosion Class Desk section of the [CNAP Share portal](#).

d. Provide written feedback to the ACC, Type Wing, or MAW on AMI and MCI processes and the performance of the inspection team.

From: Maintenance Officer, (Wing/MAW)

To: Commander, Naval Air Forces (N421 T/M/S Class Desk)
Commander, Naval Air Forces (N422B Corrosion Class Desk)

Subj: MATERIAL CONDITION INSPECTION (MCI) RESULTS

Ref: (a) COMNAVAIRFORINST 4790.2

(b) (Wing Instruction Number)

Encl: (1) MCI Discrepancy List

1. Per references (a) and (b), the (Name of Inspecting Wing) Inspection Team conducted an MCI on the below listed squadron aircraft during (Month - Month YYYY) to verify continued satisfactory material condition of assigned aircraft, SE, and ALSS.

2. The MCI team inspected the following squadron (T/M/S) aircraft:

T/M/S	UNIT	BUNO	GRADE	SCORE	DATE	TYPE
F/A-18C	VFA-XX	123456	PASS	44	DD/MM/YY	POST
MH-60R	HSM-XX	123456	PASS	32	DD/MM/YY	OTHER
AH-1W	HMLA-XX	123456	PASS	29	DD/MM/YY	PRE

NOTE: Inspection TYPE must be annotated as PRE, MID, POST, or OTHER.

3. Per reference (a), (Name of Inspecting Wing) Inspection Team has identified the following discrepancy trends and has taken (maintenance and/or engineering) actions to mitigate continued occurrence:

a. F/A-18C: Severe corrosion on the upper and lower attach sills of the vertical stabilizer wrap around panel and panels 89/91.

b. Corrective Action: Established periodic maintenance requirement (336-day inspection interval).

4. The MCI Discrepancy List, enclosure (1), lists all MCI discrepancies and actions taken to address MCIs graded as "Fail".

5. ACC assistance is (requested in the following areas/not required at this time).

6. POC: (Name, rank, e-mail address, and phone numbers).

I. M. WINGMO

By direction

Figure 10.24-1: Material Condition Inspection (MCI) Results Letter (Sample)

From: Maintenance Officer, Strike Fighter Squadron 123

To: Maintenance Officer, Strike Fighter Wing Pacific

Subj: MATERIAL CONDITION INSPECTION (MCI) CORRECTIVE ACTION

Ref: (a) MCI results ltr Ser N42 / N4 / N4 of DD/MM/YY
(b) CSFWPACINST 4790.11
(c) COMNAVAIRFORINST 4790.2

1. Per references (a), (b), and (c), the following actions were taken to correct discrepancies for specific areas graded as "Fail" during the MCI conducted DD/MM/YY by the CSFWP/CSFWL/CVWP Inspection Team.

a. BUNO/MODEX: 160001/099 Egress/Environmental graded as "Fail". Down Discrepancy: JCN 24Y021169, L/H Lower Leg Restraint Garter installed is the wrong part number. (Garter installed is for SJU-5/6 Ejection Seat, not NACES Ejection Seat). Corrective Action:

(1) Removed ejection seat bucket and replaced L/H Lower Leg Restraint Garter with correct part number for NACES Ejection Seat.

(2) Verified proper operation of leg restraint line snubbers per MIMs.

b. BUNO/MODEX: 160002/098 Engines graded as "Fail". Down Discrepancy: JCN 24Y021081, Hard FOD discovered in vicinity of port engine fuel control. Corrective Action:

(1) Removed FOD from engine and cleaned entire port engine cavity.

(2) QA completed inspection of port engine cavity to certify FOD free.

2. POC: (Name, rank, e-mail address, and phone numbers).

J. M. Stock

By direction

Figure 10.24-2: Material Condition Inspection (MCI) Corrective Action Letter (Sample)

From: Maintenance Officer, VFA-123

To: Maintenance Officer, Strike Fighter Wing Atlantic

Subj: AVIATION MAINTENANCE INSPECTION (AMI) CORRECTIVE ACTION REPORT

Ref: (a) COMNAVAIRFORINST 4790.2

1. Per reference (a), the following actions were taken to correct discrepancies for programs graded as “Off Track” or “Needs More Attention” during the AMI conducted by the COMNAVAIRFOR AMMT DD/MM/YY.

a. Off-Track Programs.

(1) Tool Control. Inspected all tool containers for compliance with the Tool Control Program (TCP). Inventoried and verified proper etching for all replacement tools held in the Tool Control Center. Conducted command wide training on missing tool procedures.

(2) Technical Directives Compliance. Verified correct compliance timeframe for all outstanding Technical Directives (TDs), and complied with all overdue TDs.

b. Needs More Attention Program. FOD Prevention. Inspected all tool containers and pouches for FOD. Conducted all-hands training on FOD prevention measures.

2. POC: (Name, rank, e-mail address, and phone numbers).

J. M. Stock

By direction

Figure 10.24-3: Aviation Maintenance Inspection (AMI) Corrective Action Letter (Sample)