



DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
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OPNAVINST 4790.13B
N9
23 Sep 2014

OPNAV INSTRUCTION 4790.13B

From: Chief of Naval Operations

Subj: MAINTENANCE OF NAVAL ELECTRONIC EQUIPMENT

Ref: (a) OPNAVINST 4700.7L
(b) NAVSEAINST 4790.17B
(c) DoD Instruction 5000.02 of 25 November 2013
(d) NAVSUP P485
(e) NAVSUPINST 4423.29
(f) SECNAVINST 4105.1C
(g) OPNAVINST 3960.16A
(h) COMUSFLTFORCOMINST 4790.3 REV C CH-1

Encl: (1) Definitions

1. Purpose. To establish the maintenance policy for naval electronic equipment. This instruction is being reissued with a new date, updated version and signature authority to meet the Chief of Naval Operations' (CNO) age requirement for the Office of the Chief of Naval Operations (OPNAV) instructions.

2. Cancellation. OPNAVINST 4790.13A.

3. Scope and Applicability. This instruction applies to all common and integrated electronic equipment found aboard aircraft, submarines and surface ships of the U.S. Navy, as well as system commands (SYSCOM) that acquire and support this equipment. This includes electronic equipment in combat systems; electronic components in hull, mechanical, avionics, and electrical systems; and electronics within associated support equipment. This instruction does not apply to nuclear propulsion or fleet ballistic missile and strategic weapons. This instruction also does not apply to software and firmware in complex systems (i.e., Aegis Combat System).

4. Definitions. Applicable definitions are in enclosure (1).

5. Policy. It is the policy of the CNO as stated per reference (a), that maintenance should be accomplished at maintenance echelons that can best ensure proper accomplishment, taking into consideration applicable laws, urgency, priority, crew impact, capability, capacity, and total cost. There are three levels of maintenance for electronic equipment: organizational, intermediate, and depot.

a. The Miniature and Micro-miniature Module Test and Repair Program has significantly improved the organic capability of all maintenance levels to repair circuit card assemblies (CCA) and electronic modules. Enclosure (5) of reference (a) identifies the policy and responsibilities for the program and reference (b) provides the details for program execution.

(1) Program managers must take into account the test and repair capability at the organizational, intermediate, and depot levels and follow all guidelines and requirements for a life cycle sustainment plan per reference (c) when developing maintenance strategies for CCAs and electronic modules.

(2) Product support managers for major in-service weapons systems shall periodically review their supported systems' CCAs and electronic module failure data and average customer wait time to receive replacements from the supply system.

(3) When feasible and cost effective, program-managed software test routines shall be developed for use aboard ships and at shore facilities with computerized test and repair capabilities.

b. The progressive depot-level repairable (DLR) concept shall be implemented for all depot repairables and selected consumable CCAs and electronic modules, including those supported by performance based logistics contracts, when practical. Under this concept, failed CCAs and electronic modules beyond the capability or capacity at the organizational level first go to the intermediate level (I-level) for screening and repair.

(1) When operational commitments dictate and ready for issue (RFI) assets are readily available, a failed CCA or

electronic modules can be turned directly into supply from the organizational level.

(2) If a DLR, CCA, or electronic module is beyond I-level capability or capacity, it shall be shipped to the depot for repair or condemnation. Ultimate RFI status determination must follow the policy per reference (d).

(3) Both the design and maintenance plans should support progressive repair. Progressive repair encourages rapid turnaround of unserviceable items at the lowest practical level, reduces operational target funds expenses, improves readiness, and can reduce requirements for wholesale and retail spares.

(4) If the program manager does not employ the progressive DLR concept, they must justify this during the integrated logistic support (ILS) certification process.

c. Per reference (e), the source, maintenance, and recoverability code identifies the maintenance levels that may remove, repair, replace, or condemn an item.

(1) The SYSCOMs determine the source, maintenance, and recoverability code when developing the maintenance plan.

(2) The selected source, maintenance, and recoverability code shall assign repairs to the lowest practical level.

(3) CCAs and electronic modules with diagnostic procedures developed by the Miniature and Micro-miniature Module Test and Repair Program shall be identified by the use of the sixth position of the source, maintenance, and recoverability code per enclosure (2) of reference (e).

d. Program managers shall provide required ILS to the maintenance activities identified in the maintenance plan. This includes spare parts, training, facilities, support equipment, and documentation. The Miniature and Micro-miniature Module Test and Repair Program provides standard diagnostic and repair equipment, as well as piece part allowances, to ashore and afloat activities authorized miniature and micro-miniature module test and repair capability.

e. Reference (f) provides the Navy's preferred approach for establishing and conducting a testability program, and interoperability, reliability, maintainability, and logistics support at the system, subsystem, equipment, assembly, and module levels.

(1) The SYSCOMs must design testability and diagnostic effectiveness into systems and equipment.

(2) Through level of repair analysis and trade-off analyses, the program manager should develop a testing concept that defines the use of built-in test, off-line general purpose electronic test equipment, automatic test systems, and the use of distance support to the extent practical.

(3) The test concept should take into account the Navy's inventory of test equipment and comply with the test measuring and diagnostics equipment, automatic test systems, and metrology and calibration policy, per reference (g).

f. For existing systems with inadequate supply material availability or ineffective maintenance plans, CNO may direct the SYSCOMs to establish broader maintenance capability. This determination should be based on operational requirements, fleet recommendations, and available resources.

6. Responsibilities

a. Deputy Chief of Naval Operations, Warfare Systems (CNO N9) shall:

(1) Review the requirement assessment from Director, Fleet Readiness (OPNAV N43) for the Miniature and Micro-miniature Module Test and Repair Program; ensure the best distribution of resources per guidance; monitor funding changes; determine program risk associated with any funding changes; and monitor execution trends.

(2) Function as Navy lead for maintaining and updating the policy on maintenance of naval electronic equipment.

b. OPNAV

(1) Director, Logistics Programs and Business Operations (OPNAV N41) shall review acquisition category (ACAT) I and II programs per reference (f) to ensure the ILS plans consider three levels of maintenance and progressive DLR.

(2) OPNAV N43 shall determine and assess the requirement for the Miniature and Micro-miniature Module Test and Repair Program and request the requirement inputs from Commander, Naval Sea Systems Command (COMNAVSEASYS COM).

c. COMNAVSEASYS COM shall:

(1) Incorporate the policies of this instruction for newly developed or redesigned electronic systems and equipment during acquisition.

(2) Provide requirement inputs to OPNAV N43 per their program assessment for the Miniature and Micro-miniature Module Test and Repair Program.

(3) Incorporate the policies of this instruction for existing electronic systems when the present maintenance concept and logistic support do not meet the established requirements for operational readiness, and the equipment meets the mission essentiality requirements.

(4) Serve as the program manager for the Miniature and Micro-miniature Module Test and Repair Program.

(5) Review the implementation of these policies during ILS certification process for ACAT III and IV programs.

d. Commander, Space and Naval Warfare Systems Command (COMSPAWARSYS COM) shall:

(1) Incorporate the policies of this instruction for newly developed or redesigned electronic systems and equipment during acquisition.

(2) Incorporate the policies of this instruction for in-service mission essential electronic systems when warranted by in-service reviews that indicate logistics delay threshold requirements are not being met, and or when supported by a level of repair analysis update.

(3) Review the implementation of these policies during independent logistics assessments for all programs, per reference (e).

e. Commander, Naval Air Systems Command (COMNAVAIRSYSCOM) shall:

(1) Incorporate the policies of this instruction for newly developed or redesigned electronic systems and equipment during acquisition.

(2) Incorporate the policies of this instruction for existing electronic systems when the present maintenance concept and logistic support do not meet the established requirements for operational readiness, and the equipment meets the mission essentiality requirements.

(3) Review the implementation of these policies during ILS certification process for ACAT III and IV programs.

f. Commander, Naval Supply Systems Command (COMNAVSUPSYSCOM) shall:

(1) Ensure that supply procedures are in agreement with policy.

(2) Ensure that supply support is provided under the maintenance requirements developed by the SYSCOM per this instruction.

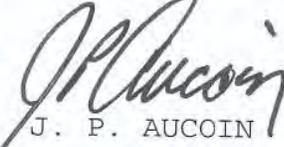
g. Commander, U.S. Fleet Forces Command (COMUSFLTFORCOM) shall:

(1) Review ACAT I, II, and III logistic support and life cycle sustainment plans before first fleet installation.

(2) Support the policy in this instruction by ensuring maintenance is accomplished per the approved maintenance plans and by operationally administering the Miniature and Micro-miniature Module Test and Repair Program per reference (h).

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7. Records Management. Records created as a result of this instruction, regardless of media and format, shall be managed per Secretary of the Navy Manual 5210.1 of January 2012.



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DEFINITIONS

1. Combat Systems. Generally, this includes devices and systems in the fields of detection and tracking; recognition and identification; communications; aids to navigation; weapons control and evaluation; electronic countermeasures; and test equipment. Combat systems usually have electro-mechanical support systems that are essential for operation, such as power supplies, hoists, cooling, and air systems.
2. Depot Maintenance. The third level of maintenance requires skills and facilities beyond the capability of the organizational and intermediate levels. Depot maintenance includes major rework, full restoration, manufacturing, large scale repairs, and modernization. Furthermore, depots support lower levels with engineers and technical assistance.
3. Intermediate Maintenance. The second level of maintenance provides support beyond the capability of the organizational level. Intermediate maintenance includes calibration, repair or replacement of damaged parts, emergency fabrication of unavailable parts, verification testing, and fault isolation. Furthermore, intermediate maintenance supports the organization levels with technical assistance.
4. Maintenance. This is the action of keeping material in good repair. Maintenance includes inspection, service, repair, modification, modernization, and restoration.
5. Maintenance Plan. The plan that translates the three level maintenance concepts into a set of tasks that will ensure that the equipment meets its requirements for availability. The acquisition managers use the maintenance plan to develop and procure the logistic support for the three maintenance levels.
6. Organizational Maintenance. The first level of maintenance is the user organization. It consists of the preventive and corrective maintenance performed by the platform's crew or shore personnel assigned to supplement the platform's force and perform on-board preventative or corrective maintenance. It consists of equipment operation, inspection, service, replacement of parts, and repairs.

7. Progressive Depot Level Repair (DLR). This refers to the sequential movement of an unserviceable DLR component from the platform to the depot. DLR with source, maintenance, and recoverability codes for removal at the organizational level should go first to the I-level for verification and repair. If the DLR is beyond the capability of the I-level, then it should go to the depot for repair.

8. Source, Maintenance, and Recoverability Code. The source, maintenance, and recoverability code identifies the lowest maintenance level that may repair, replace, or condemn an item. The SYSCOM determines the source, maintenance, and recoverability code when developing the maintenance plan.

9. Testability. A design characteristic which allows the status (operable, inoperable, or degraded) of an item to be determined and the isolation of faults within the item to be performed in a timely manner.