NOTES

This file contains the Word document notes associated with the **significant** changes to the JFMM. It has been designed to work with the associated PowerPoint file (JFMM\_Training.pptx) included in this JFMM edition. The sections of this file correspond to the PowerPoint file.

# 2. Front Page

# 

COMUSFLTFORCOMINST 4790.3

RevisionD

Change **5**

# 3. FOREWORD

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Description automatically generated

# 4. FOREWORD

# Foreword Paragraph 5.1

# Terminology

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| Existing Words | **New Words** |
| 5.1 Platform Considerations. Throughout this manual, certain requirements apply only to specific platforms. To point these out, the terms (Submarines Only), (Aircraft Carriers Only), (Surface Force Ships Only), and specific hull designators (e.g., DDG, SSN) are used in parentheses within the paragraph to which they apply. When no specific platform is mentioned, the requirements apply to all platforms. The term “ship” (alone) should be related to the context of the paragraph in which it is mentioned. The term “Submarine Force” applies to all ships under the responsibility of Submarine Forces, Atlantic and Pacific Fleets; the term “Aircraft Carriers” applies to all ships under the responsibility of Naval Air Forces, Atlantic and Pacific Fleets; and the term “Surface Force” applies to all ships under the responsibility of Naval Surface Forces, Atlantic and Pacific Fleets. | 5.1 Platform Considerations. Throughout this manual, certain requirements apply only to specific platforms. To point these out, the terms (Submarines Only), (Aircraft Carriers Only), (Surface Force Only), (Aegis Ashore wherever fielded) and specific hull designators (e.g., DDG 1000 Class, LCS Class, SSN 725, Aegis Ashore) are used in parentheses within the paragraph to which they apply. When no specific platform is mentioned, the requirements apply to all platforms. The term “ship” (alone) should be related to the context of the paragraph in which it is mentioned. The term “Submarines” applies to all ships under the responsibility of Submarine Forces, Atlantic and Pacific Fleets; the term “Aircraft Carriers” applies to all ships under the responsibility of Naval Air Forces, Atlantic and Pacific Fleets; and the term “Surface Force” applies to all ships under the responsibility of Naval Surface Forces, Atlantic and Pacific Fleets. Additionally, the term “Aegis Ashore” applies to ballistic missile defense systems, where fielded, under the Commander, Naval Surface Force, Atlantic; and the use of “surface ship” includes all non-submersible ships disregarding the TYCOM (i.e. tenders from the submarine community, CVNs from the air community, and all the Surface Force ships). |

# Foreword Paragraph 5.3

# Delineated Aegis Ashore TYCOM and ISIC

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| Existing Words | **New Words** |
| 5.3 Terminology Considerations. Use of the term “TYCOMs or Immediate Superior in Command (ISIC)” throughout this manual is defined as: | 5.3 Terminology Considerations. Use of the term “TYCOMs or Immediate Superior in Command (ISIC)” throughout this manual is defined as:  d. For Aegis Ashore (wherever fielded), the term “TYCOM” and “ISIC” refers to Commander Naval Surface Force Atlantic. |

# 5. VOLUME I



# 6. New Construction

# Volume I, Chapter 3, Paragraph 3.3.17:

# Certifications

## Added HM&E Control System Certification Process.

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| Existing Words | **New Words** |
|  | 3.3.17 Hull, Mechanical, and Electrical Control Systems Certification Process. (Surface Force and Aircraft Carriers). Reference (ac) provides Hull, Mechanical, and Electrical (HM&E) Control Systems (HCS) (e.g., ship control systems and machinery control systems) certification process requirements, established to provide maximum reasonable assurance that HCSs installed on surface ships, including aircraft carriers, will operate in a safe and reliable manner. HCS certifications shall be established and maintained in accordance with reference (ac). |

7. VOLUME II

# 8. Maintenance and Modernization Program

## Volume II, Part I, Chapter 2, Paragraph 2.1.1.b;

### Naval Supervisory Authority

Aligned AIT and Modernization Programs.

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| Existing Words | **New Words** |
| b. NSA Assignment…  (1) Alterations installed by Alteration Installation Teams (AIT) per reference (b) can only be executed in availabilities that have a designated NSA, with the exception of availabilities where TRFKB, NSSFNL or Tenders are the assigned LMA. If the AIT install is being performed outside a CNO availability, the AIT Sponsor may propose NSA responsibility be assigned to any organization that is qualified as an NSA for the type of work being performed.  (2) An NSA is not required if the work is being performed by a U.S. Navy LMA outside a CNO availability.  (3) The NSA will normally be the activity assigned based on the geographic area covered by the assigned RMC, NSY or SUPSHIP, as indicated in Volume VI, Chapter 2, Table 2-1 of this manual. If this is not practical, the NSA assignment will be made based on the area of responsibility of the cognizant Chief Engineer as delineated in reference (a).  (4) The NSA designation does not apply to alterations to ships accomplished by AITs where the NSA may be responsible:  (a) Alterations to nuclear components and systems under the cognizance of the Deputy Commander for Nuclear Propulsion (NAVSEA 08).  (b) Strategic Systems Program Alterations (SPALT) issued by the Director, Strategic Systems Programs and alterations under the TRIDENT SYSTEM Change Management Program.  (c) Temporary modifications performed as part of a shipyard availability to support industrial work or associated testing.  (d) Temporary Alterations (TEMPALT) to be accomplished on Submarines.  (e) Technical support personnel and certification teams who only provide technical guidance, equipment checkout and grooming or certification of systems or on-site training for Ship’s Force not associated with the accomplishment of an alteration or Ship Change.  (f) Boats, small craft, service craft, equipage and other exceptions including items that are not permanently installed and are portable. | b. NSA Assignment…  (1) Alterations installed by Alteration Installation Teams (AIT) per reference (n) can only be executed in availabilities that have a designated NSA, with the exception of availabilities where TRFKB, NSSFNL or Tenders are the assigned LMA.  (2) An NSA is not required if the work is being performed by a U.S. Navy LMA outside a CNO availability.  (3) The NSA will normally be the activity assigned based on the geographic area covered by the assigned RMC, NSY or SUPSHIP, as indicated in Volume VI, Chapter 2, Table 2-1 of this manual. If this is not practical, the NSA assignment will be made based on the area of responsibility of the cognizant Chief Engineer as delineated in reference (a).  (4) The NSA designation does not apply to alterations to modernization exemptions specified in reference (n), paragraph 1.4. |

## Volume II, Part I, Chapter 2, Paragraph 2.1.1.d;

### Quality of Service

Added Quality of Service to NSA.

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| Existing Words | **New Words** |
| (5) For CNO availabilities, the NSA must: | (5) For CNO availabilities, the NSA must:  (g) Participate in Quality of Service Council per part I, chapter 3, of this volume. |

## Volume II, Part I, Chapter 2, Paragraph 2.1.1.d;

### NSA Responsibility

Aligned AIT and Modernization Programs.

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| Existing Words | **New Words** |
| (6) For alterations installed by AITs, the NSA, as provided in Table 2-1, as required by reference (b) must:  (a) Monitor the effectiveness and the quality of AIT managers’ execution of Quality Assurance oversight responsibilities by assessing their execution of Quality Assurance oversight responsibilities and by Quality Sampling. Request Qualification Records as needed in support of spot checks.  (b) Perform inspections of installations, on a sampling basis, and use the sampling evidence to indicate conformance or nonconformance with NAVSEA requirements.  (c) Conduct AIT In and Out briefs and coordinate with the AIT Manager and Ship’s Force to ensure satisfactory completion of alterations.        (d) Receive copies of Integrated Logistics System products from the AIT and verify they were properly distributed.  (e) Ensure completion reports are issued and for any work not accomplished, assure a Current Ship’s Maintenance Project (CSMP) Job Control Number is issued. | (6) For alterations installed by AITs, the NSA, as provided in Table 2-1, as required by reference (n) must:  (a) Monitor the effectiveness and the quality of AIT managers’ execution of Quality Assurance oversight responsibilities by assessing their execution of Quality Assurance oversight responsibilities and by Quality Sampling. Request Qualification Records as needed in support of spot checks.  (b) Perform inspections of surveillances , on a sampling basis, and use the sampling evidence to indicate conformance or nonconformance with NAVSEA requirements. Document nonconformances per reference (n).  (c) Participate in Ship’s Force AIT In-Briefs Ship’s Force and NSA Out Briefs.  **NOTE THE SHIP’S FORCE AND NSA OUT-BRIEF SHALL BE CONDUCTED INDEPENDENT OF COMPLETION STATUS AT THE END OF AVAILABILITY.**  (d) Coordinate with the AIT Manager and Ship’s Force to ensure satisfactory completion of alterations.  (e) Verify delivery of Integrated Logistics Support deliverables from the AIT.  (f) Ensure completion reports are issued and for any work not accomplished, assure a Current Ship’s Maintenance Project (CSMP) Job Control Number is issued. |

## Volume II, Part I, Chapter 2, Paragraph 2.1.2.v;

### Quality of Service

Added Quality of Service to LMA.

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| Existing Words | **New Words** |
| 2.1.2 Lead Maintenance Activity. The single activity responsible for work being accomplished on U.S. Naval ships during any type of availability. For work conducted during periods in which the NSYs or RMCs do not have oversight, an LMA will be designated. LMAs are responsible for: | 2.1.2 Lead Maintenance Activity. The single activity responsible for work being accomplished on U.S. Naval ships during any type of industrial availability. For work conducted during periods in which the NSYs or RMCs do not have oversight, an LMA will be designated. LMAs are responsible for:  v. (CNO availabilities) Respond to findings of the QoSC per part I, chapter 3 of this volume, as requested. |

## Volume II, Part I, Chapter 2, Paragraph 2.6;

### Modernization

Aligned AIT and Modernization Programs.

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| Existing Words | **New Words** |
| 2.6 MODERNIZATION.  2.6.1 Navy Modernization Program. The Navy Modernization Program (NMP) is a CNO managed program to develop, plan, fund and accomplish Ship Changes and alterations following policies mandated in reference (b). It is executed per Volume VI, Chapter 3 (Submarines) and Chapter 36 (Surface Ships and Aircraft Carriers) of this manual and applies to all alterations to commissioned ships and craft of the Navy except:  a. Alterations to those portions of naval nuclear propulsion plants and facilities under the cognizance of the NAVSEA 08 identified in reference (k).  b. Strategic Systems Program Alterations affecting the configuration or capabilities of systems and equipment under the cognizance of the Strategic Systems Programs (SSP). Reference (e) defines the policies, controls, processes and procedures for the accomplishment of all SSP Alterations issued by the Director, SSP for all SSP cognizant equipment on both SSBNs and SSGNs.  c. TEMPALTs required for mission support or installed for test and evaluation or research and development programs.  d. Alterations affecting configuration of hardware, software and support equipment of a TRIDENT system is under the cognizance of NAVSEA PMS 392.  e. Temporary Modifications (TEMPMOD) are required for mission support or installed for test and evaluation or research and development programs associated with DSS and craft per reference (l). DSS systems on submarines and various craft such as Dry Deck Shelters are managed by NAVSEA PMS 390N. DSS systems on various craft for Deep Submergence Rescue Systems are managed by NAVSEA PMS 390. TEMPMODs are managed in the same manner as a TEMPALT.  NOTE: TEMPORARY MODIFICATIONS TO DSS SYSTEMS PERMANENTLY INSTALLED ON SUBMARINES ARE MANAGED AS TEMPALTS.  2.6.2 Types of Ship Changes. There are only two types of Ship Changes in the NMP: Program Changes and Fleet Changes. The Submarine Force breaks these two types of Ship Changes into further sub-categories. See Volume VI, Chapter 3 of this manual for further details and definitions.  a. Program Changes are programmed for installation by System Commands or Program Executive Offices, as well as funded for accomplishment by the System Commands, Program Executive Offices or other organizations as agreed upon.  b. Fleet Changes are programmed and budgeted as part of TYCOM Ship Maintenance funding. Fleet Changes typically address safety of personnel or equipment, provide increased efficiency, reliability or maintainability and generally do not increase or add new capability.  c. Non-Navy Ship Change Documents are programmed for installation on Naval vessels by Non-Navy organizations and they are funded for implementation by these organizations per previous agreement.  d. Combination Ship Change Documents are programmed for installation on Naval vessels by a combination of the above organizations and their implementations are funded by those organizations per previous agreement. Under normal conditions, these Ship Change Documents are funded by their Programs. Otherwise, they are funded by the Fleet.  2.6.3 Navy Data Environment System.  a. Navy Data Environment (NDE) was designed as an enterprise data model to integrate and merge existing modernization, maintenance and logistics legacy data structures into a single design. The objective of NDE is to consolidate Fleet Modernization Business Processes and legacy Data Systems. The following applications have been merged into the NDE common model:  (1) Fleet Modernization Program Management Information System (FMPMIS) (Logistics Module) and Alteration Installation Planning System (AIPS) became (NDE-NM).  (2) FMPMIS Program Module and FMPMIS Execution Modules (became NDE Program and Execution Modules respectively).  (3) Afloat Master Planning System (NDE AMPS Module).  (4) Integrated Logistics Support (ILS) Cert or Master List Module.  b. The following systems replicate data and interface with NDE to share alteration, scheduling, material and financial data:  (1) NDE-NAVWAR Integrated Data Environment.  (2) Configuration Data Managers Database-Open Architecture (CDMD-OA).  c. The following systems will replicate data and interface with NDE to share alteration, scheduling, material and financial data:  (1) TYCOM Alteration Management System (TAMS).  (2) Integrated Modernization Planning for Aircraft Carriers (IMPAC).  2.6.4 Submarine Force Navy Modernization Process. Submarine Force Navy Modernization Process phased implementation details are covered further in reference (b), Section 9 and Volume VI, Chapter 3 of this manual. | 2.6 MODERNIZATION.  The Navy Modernization Process (NMP) is a CNO managed program to develop, plan, fund and accomplish Ship Changes and alterations following policies mandated in reference (b). It is executed per Volume VI, Chapter 3 (Submarines) and Chapter 36 (Surface Ships and Aircraft Carriers) of this manual. |

# 9. CNO Scheduled Maintenance Availabilities

**Chapter Updated**

**Review the entire chapter due to extensive updates including:**

## Volume II, Part I, Chapter 3, Paragraph 3.3.6;

### C5ILO and SOVT Key Events

Aligned AIT and Modernization Programs.

## Volume II, Part I, Chapter 3, Paragraphs 3.3.7; 3.5.7; 3.6.3.2; 3.6.8.1.2; and Appendices T through W;

### Quality of Service (QoS), Habitability and Livability

Added requirements for QoS to CNO scheduled availabilities.

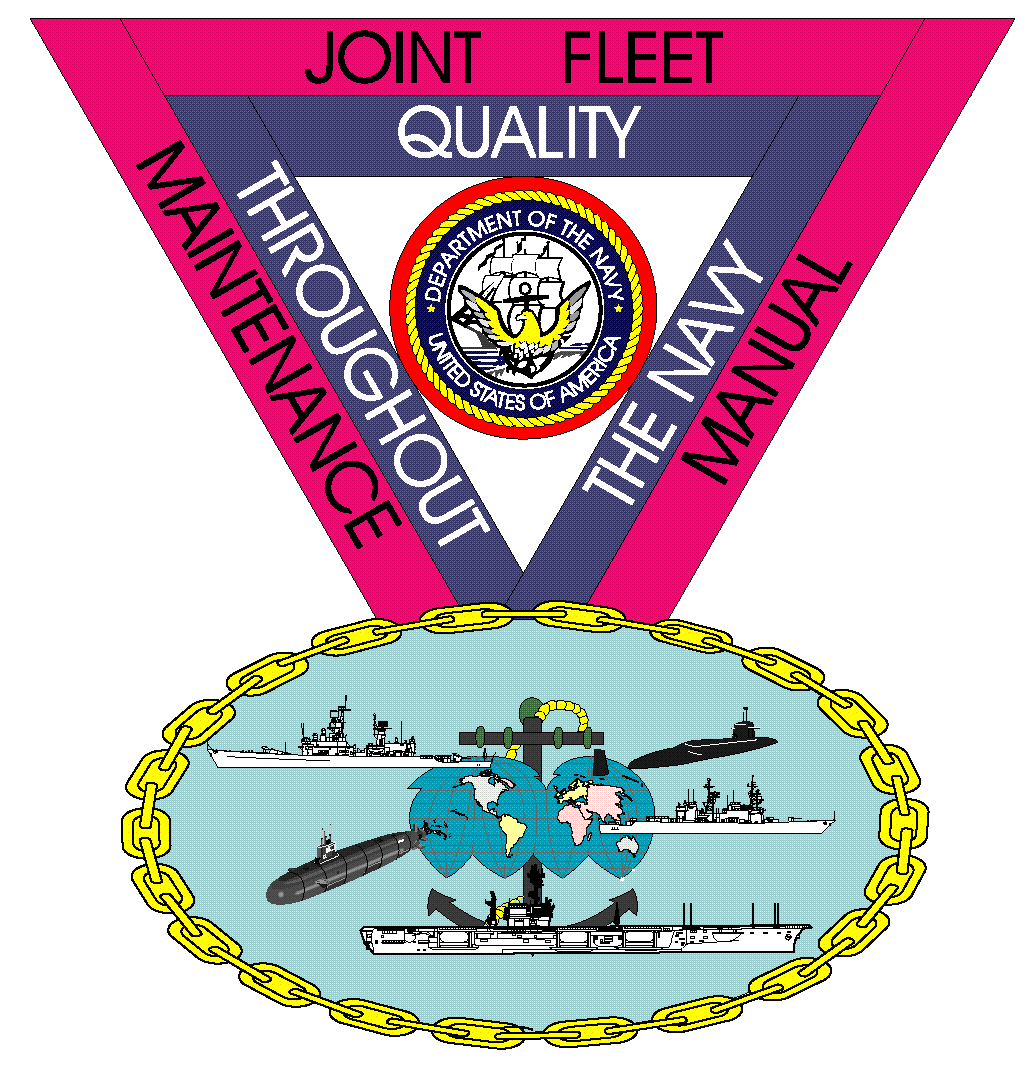
## Volume II, Part I, Chapter 3, Paragraph 3.8;

### Days of Maintenance Delay (DoMD)

Updated method of calculation.

# 10. VOLUME III

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**VOLUME III**

# Deployed Maintenance

# 11. Deployed Maintenance

**No training required.**

# 12. VOLUME IV

## Diagram Description automatically generated

## 13. Work Authorization

**Volume IV, Chapter 10, Paragraph 10.4;**

**Work Authorization Form for Hot Work**

Modified the requirements for WAF for individual hot work evolutions that are part of a TWD.

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| Existing Words | **New Words** |
| b. A WAF, shown in Appendix A1, is required to authorize the start of work on all ship systems and equipment by activities other than Ship’s Force. Work includes all maintenance, repairs or modifications and installation or removal of temporary support systems and equipment. Repair activity non-intrusive work (e.g., painting, lagging, sheet metal work, deck plate, structural foundation not including hot work) that does not affect ship or personnel safety does not normally require a WAF. | b. A WAF, shown in Appendix A1, is required to authorize the start of work on all ship systems and equipment by activities other than Ship’s Force. Work includes all maintenance, repairs or modifications and installation or removal of temporary support systems and equipment. Repair activity non-intrusive work (e.g., painting,  lagging, sheet metal work, deck plate, structural foundation) that does not affect ship or personnel safety does not normally require a WAF.  f. A WAF for individual Hot Work evolutions, as defined in reference (a), is not required when the work is a part of a Technical Work Document (TWD) already authorized by an existing WAF. The notification and authorization process to perform Hot Work, required by reference (a) will be executed independent of any approved WAF. |

**Volume IV, Chapter 10, Paragraph 10.4.3;**

**Transfer of Systems**

Transfer of Non-Nuclear Systems and Nuclear Systems That Do Not Affect Reactor Plant Safety or Operations.

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| Existing Words | **New Words** |
| 10.4.3 Transfer of Non-Nuclear Systems and Nuclear Instrumentation and Control Systems (Depot Availabilities Only). During depot availabilities, large amounts of work will be performed on ship’s systems. Formal work control practices in place by a shipyard enable Ship’s Force to transfer non-nuclear systems and Nuclear Instrumentation and Control systems to the shipyard. Transfer of systems is the process by which Ship’s Force transfers the authority to approve all actions within a system or portion of a system to a shipyard and subsequent return of systems back to Ship’s Force prior to major events. … | 10.4.3 Transfer of Non-Nuclear Systems and Nuclear Systems That Do Not Affect Reactor Plant Safety Or Operations (Depot Availabilities Only). During depot availabilities, large amounts of work will be performed on ship’s systems. Formal work control practices in place by a shipyard enable Ship’s Force to transfer non-nuclear systems and Nuclear systems not required for maintaining reactor plant conditions to the shipyard (example nuclear systems include Nuclear Instrumentation and Control systems and non-operation impacting reactor support systems). Transfer of systems is the process by which Ship’s Force transfers the authority to approve all actions within a system or portion of a system to a shipyard and subsequent return of systems back to Ship’s Force prior to major events. … |

**Volume IV, Chapter 10, Paragraph 10.4.3.h;**

**Transfer of Systems**

Transfer of Non-Nuclear Systems and Nuclear Systems That Do Not Affect Reactor Plant Safety or Operations.

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| Existing Words | **New Words** |
| h. Any ship system which could directly affect the reactor plant or conduct of reactor plant testing must not be transferred to a shipyard until required nuclear temporary support systems are installed and the system is isolated from the reactor plant. | h. Any ship system which could directly affect the reactor plant or conduct of reactor plant testing must not be transferred to a shipyard until required nuclear temporary support systems are installed and the system is isolated from the reactor plant. Nuclear systems or portions of nuclear systems may be transferred to support shipyard work and testing, including equipment operation, provided there is no impact to operations required for maintaining reactor plant conditions and reactor safeguards. Refer to reference (d) to ensure all requirements associated with nuclear system transfers are met, including but not limited to obtaining the nuclear Joint Test Group concurrence for systems being transferred from ship's force to the shipyard. |

## 14. Gas Turbine Engine Inspection for Surface Force Ships

**Volume IV, Chapter 23, Paragraph 23.8.1;**

**Repair Before Operating**

Modified the requirements for gas turbine RBOs and DFS.

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| Existing Words | **New Words** |
| 23.8.1 Repair Before Operating. A Repair Before Operating (RBO) is any condition existing that, if left unattended, would definitely pose a hazard to personnel safety. Only a MGTI that is currently certified may issue a RBO. RBO deficiencies require re-inspection by a MGTI that is currently certified after repairs and before the gas turbine engine is operated. A DFS will not be approved for RBOs. The following items are examples of RBO items and **are not to be construed as a complete list**.  a. Conditions existing that if left uncorrected would definitely result in an uncontained failure of the engine.  b. Continuous Fuel Oil leak with puddling that poses risk of ignition.  c. Loss of structural integrity in intake or exhaust ducts which may result in personnel injury.  d. Exhaust duct crack(s) that may allow exhaust gas leakage into ship compartments.  e. Non-functional over-speed trips.  f. Lube oil leaks that exceed maximum limits in GGTB 17.  g. Any disk cracks. | 23.8.1 Repair Before Operating. A Repair Before Operating (RBO) is any condition existing that, if left unattended, would definitely pose a hazard to personnel safety. RBOs may not be departed via DFS, with exception as noted. If there is not an immediate or near future danger to personnel, the discrepancy must be assigned as severely degraded with major operational restrictions in accordance with paragraph 23.8.2 of this chapter and instruction. Only a MGTI that is currently certified may issue a RBO. RBO deficiencies require re-inspection by a MGTI that is currently certified after repairs and before the gas turbine engine is operated. The following items are examples of RBO items and **are not to be construed as a complete list**.  a. Conditions existing that if left uncorrected would definitely result in an uncontained failure of the engine.  b. Continuous Fuel Oil leak with puddling that poses risk of ignition.  c. Loss of structural integrity in intake or exhaust ducts which may result in personnel injury.  d. Exhaust duct failure(s) that may allow exhaust gas leakage into ship compartments. References (c), (g), and (h) provide guidance for defining leaks (major DFS eligible).  e. Non-functional over-speed trips.  f. Lube oil leaks that exceed maximum limits in GGTB 17.  g. Any disk cracks. |

# 15. VOLUME V

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## 16. Organizational Responsibilities (Submarines Only)

## Volume V, Part I, Chapter 1, Paragraph 1.5.o(2);

**ISIC Responsibilities**

Removed FBW-SCS certification audits.

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| Existing Words | **New Words** |
| (2) Conduct FBW-SCS Certification Audits of Upgrade, Alterations or Major Repair Work and issue report to the activity. Audits must be conducted using the TYCOM provided FBW Certification Audit Checklist at a minimum. Provide a copy of the FBW-SCS Certification Audit Report to the Supervising Authority, ship’s Commanding Officer, TYCOMs, Fleet Commanders and NAVSEA. |  |

## Volume V, Part I, Chapter 1, Paragraph 1.5.r;

**ISIC Responsibilities**

Added new sub-paragraph to conform to the changes made within the FBW-SCS Requirements Manual.

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| Existing Words | **New Words** |
|  | r. (Submarines Only) Review all FBW-SCS or SFCC maintenance Objective Quality Evidence (OQE) provided by assigned units and forward to the ISEA using email address shipcontrol@us.navy.mil. |

## Volume V, Part I, Chapter 1, Paragraph 1.6.12.ah;

**Ship’s QAO Responsibilities**

Added new sub-paragraph to notify ISIC of SFCC work.

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| Existing Words | **New Words** |
|  | ah. (Submarines Only) When a SFCC is removed or replaced because of failure, or after a SFCC is installed or reprogrammed, submit QA Form 17D certifying the repair or installation to the ISIC QAO via electronic mail and, or, any alert messages that indicated a FBW-SCS fault affecting a SFCC has occurred. |

## Volume V, Part I, Chapter 1, Appendix A;

**Submarine QA Pre-Underway Checklist**

Updated checklist for SOC designated ships. Revised check for DISSUB deficiencies not resolved prior to underway.

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| Existing Words | **New Words** |
| **Other Reviews (48-24 Hours Prior to Underway)**  Designated SOC Ships - If Manned Operations are scheduled, verify no SOC PMRs will become due prior to Manned Operations. Perform the PMR or submit a major DFS if the PMR will come due during scheduled manned operations.  Ship’s QAO shall review MIP/MRC data sheets for each Rescue Seating Surface (RSS). Document and discrepancies on a Minor DFS (one per RSS) approved per part I, chapter 8 of this volume.  Ship’s QAO shall review CSMP deficiencies for submarine escape components (e.g., IPHO and intensifier system; SCV, HIS, and AVV valves; sea sensing line; escape trunk and cavity drain and strainer or orifice; or upper hatch hydraulic hand pump (688CL only)). Document any discrepancies on a Minor DFS (one per compartment), approved per part I, chapter 8 of this volume | **Other Reviews (48-24 Hours Prior to Underway)**  Designated SOC Ships - If Manned Operations are scheduled, verify no SOC planned maintenance (e.g.,PMRs, HIPs, or PMS) will become due prior to Manned Operations. Major DFS is required for non-accomplished planned maintenance which will come due during scheduled manned operations.  Ship’s QAO shall review all 59400/series MRCs completed during the last in-port period for any discrepancies not corrected prior to ship underway. Minor DFS is required for non-corrected discrepancies per part I, chapter 8 of this volume. |

## 17. Departure of Specifications

## Volume V, Part I, Chapter 8, paragraph 8.1.2;

# Terminology

Added two new sub-paragraphs to refer to the Naval Information Warfare Systems Command.

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| Existing Words | **New Words** |
|  | e. Within this publication the Technical Authorities for Shore C4I is Naval Information Warfare Systems Command, and Shore Facilities is Naval Facilities Engineering Systems Command. These are utilized in place of Naval Sea Systems Command Technical Warrant Holder throughout the DFS process for Naval Information Force and Commander Naval Installations Command.  f. Within this chapter, for shore activities subordinate to Naval Information Force, the term “ship” is synonymous with shore activities. |

## Volume V, Part I, Chapter 8, paragraph 8.2.5.q;

# Major DFS

(Submarines Only) Modified the sub-paragraphs to comply with URO MRC 003.

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| Existing Words | **New Words** |
| q. (Submarines only) A Major DFS is required to document missing or damaged Special Hull Treatment removed from external structure only when the coating system beneath the Special Hull Treatment is missing or delaminated resulting in bare metal that is not repaired. Missing or damaged Special Hull Treatment removed from external structure is to be tracked using the CSMP process as long as the remaining coating system is intact or repaired (i.e., no bare metal) when the following conditions are met:  (1) The submarine is not currently in a Depot Level availability.  (2) Temporary repairs are performed following the requirements of the class specific hull treatment repair and maintenance manual.  (3) The CSMP item is scheduled to be cleared no later than the next scheduled Depot Level availability. | q. (Submarines only) A Major DFS is required to document missing or damaged Special Hull Treatment removed from external structure only when the coating system beneath the Special Hull Treatment is missing or delaminated resulting in bare metal that is either left bare or repaired using temporary underwater coatings (e.g., Hycote). Missing or damaged Special Hull Treatment removed from external structure is to be tracked using the CSMP process as long as the remaining coating system is intact or repaired (i.e., no bare metal) when the following conditions are met:  (1) The submarine is not currently in a Depot Level availability.  (2) Anti-corrosive coating repairs are performed in accordance with the requirements of Section 9 of reference (b).  (3) The CSMP item is scheduled to be cleared no later than the next scheduled Depot Level availability. |

## Volume V, Part I, Chapter 8, paragraph 8.2.6;

# Minor DFS

(Submarines Only) Modified the sub-paragraphs to comply with DISSUB PMS Discrepancies.

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| Existing Words | **New Words** |
| g. Submarine Rescue Chamber (SRC) shackle, SRC hold downs, inability to remove fairing fasteners) deficiencies identified during the performance of PMS, not corrected prior to underway require a minor DFS approved by the TYCOM.  **h.** (Submarines only) For all submarine escape component (e.g., IPHO and intensifier system; SCV, HIS and AVV valves; sea sensing line; escape trunk and cavity drain and strainers or orifice; or upper hatch hydraulic hand pump (688 Class only)) deficiencies, not corrected prior to underway. | **g.** (Submarines only) For all Disabled Submarine components maintained by maintenance requirement cards (MRCs) listed within Disabled Submarine equipment maintenance plans 59400/series PMS deficiencies, following scheduled completion where deficiencies are identified and not corrected prior to ships underway require a minor DFS approved by TYCOM. |

## 18. Audits, Surveillance, Evaluations and Assessments

## Volume V, Part I, Chapter 9, paragraph 9.4.1.a;

# Reporting Requirements

Modified the grading criteria the Immediate Superior in Command uses to grade their units based on all factors to be considered during external audits, surveillances and assessments.

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| Existing Words | **New Words** |
| a. Ship’s Force will provide a report to the ISIC of completed corrective action, proposed corrective action and schedule of accomplishment within 60 days of receipt of the ISIC Official Audit, Assessment or Surveillance Report. Specifically, the Ship’s Force report must:  (1) For individual findings that require immediate corrective action, include a root cause, causal analysis, immediate corrective action and permanent corrective action.  (2) For areas evaluated as weak (i.e., Below Standards) or areas where repeat findings indicate that previous corrective action was not effective include:  (a) A discussion of the fundamental root causes.  (b) A discussion of action taken to correct the causes and an evaluation of the effectiveness of this action.  (c) A discussion of the reasons why previous corrective action was not successful in improving any area where repeat findings indicate that previous corrective action was not effective.  (3) For all other individual findings requiring an official response, include, at a minimum, a permanent corrective action taken to correct the deficiency. | a. Ship’s Force will provide a report to the ISIC of completed corrective action, proposed corrective action and schedule of accomplishment within 60 days of receipt of the ISIC Official Audit, Assessment or Surveillance Report. Specifically, the Ship’s Force report must:  (1) For individual findings that require immediate corrective action, include a root cause, causal analysis, immediate corrective action and permanent corrective action.  (2) For areas evaluated as weak Below Standards include:  (a) A discussion of the fundamental root causes.  (b) A discussion of action taken to correct the causes and an evaluation of the effectiveness of this action.  (c) If the Below Standards Area or Immediate Corrective Action Report (ICAR) or Report of Corrective Action Required (RCAR) are repeat findings from the previous inspection, a discussion of the reasons why previous corrective action was not successful in improving any area where repeat findings indicate that previous corrective action was not effective.  (3) For all other individual findings, the ship will identify the appropriate corrective actions and retain them with the official report of corrective actions (i.e., Audits). |

## Volume V, Part I, Chapter 9, Appendix D;

# Submarine QA Assessment Criteria (Submarines Only)

Modified the paragraph concerning the review of audit, surveillance, evaluations and assessments.

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| --- | --- |
| Existing Words | **New Words** |
| 1. The following guidance is provided to establish consistent grading standards across the Submarine Force. This will enable consistent evaluation of QA assessments in the Submarine Force and provide specific feedback to commands thus improving their ability to independently assess and maintain readiness in Undersea Warfare. The areas are based on the requirements of this chapter. The overall assessment will be graded as satisfactory or unsatisfactory. A grade of unsatisfactory will be assigned by the ISIC if any of the following criteria are met: | 1. The following guidance is provided to establish consistent grading standards across the Submarine Force. This will enable consistent evaluation of QA assessments in the Submarine Force and provide specific feedback to commands thus improving their ability to independently assess and maintain readiness in Undersea Warfare. The areas are based on the requirements of this chapter. The ISIC retains the ability to determine the grades of their units weighing all factors associated with the crew (timing since the last inspection, change out of personnel, volume of work conducted, etc.) The overall assessment will be graded as satisfactory or unsatisfactory. A grade of unsatisfactory will be assigned by the ISIC if any of the following criteria are met: |
| 2.d. Audit, Surveillance, Evaluations and Assessment: This review is an in-depth review of how the ship's ability to monitor, assess and determine corrective actions to prevent re-occurrence. This review is one of the more subjective areas and the auditor will have to be consistent in his methodology and provide specific comments. In general, the grades will be based on the ability to meet the requirements (e.g., conduct the required audits as required by the JFMM). Other driving factors may include repeat poor performance and systemic failure to follow both local and JFMM administrative requirements. An aggressive program is defined as one where the QAO demonstrates his surveillance schedule is dynamic and focuses on infrequent repair efforts, first time repairs and components that have repetitive failure in addition to previously noted weak areas. An aggressive program will also demonstrate how weak areas are assessed, assigned corrective actions that affect change and have been adequately re-assessed. | 2.d. Audit, Surveillance, Evaluations and Assessment: This review should concentrate on validating the ship has an active Quality Assurance AS&E Program, Chain of Command involvement in the analysis of causes and corrective actions, and that required audits, surveillances, and evaluations are scheduled, performed, processed, and retained. |

## Volume V, Part I, Chapter 9, Appendix D, paragraph 2.g;

# SUBSAFE, REC, SOC and FBW SCS Program Review (Submarines Only)

Updated the attributes for SUBSAFE, REC, SOC and the FBW SCS Program.

|  |  |
| --- | --- |
| SUBSAFE, REC, SOC and FBW Program | |
| Grade | Attributes |
| Above Standards | Only minor (≤ 10) administrative deficiencies noted with program administration. |
| At Standards | Only minor (>10 but <25) administrative deficiencies noted with program administration. |
| Below Standards | Multiple deficiencies with records (≥ 25) or systemic failure to follow JFMM requirements for administration of program. Missing one or two REC Exception Documents. |
| Unsatisfactory | Failure to issue certification of continuity letters or failure to use REC controls when performing SUBSAFE, REC, DSS-SOC or FBW-SCS work when re-entry controls are required. Missing three or more REC Exception Documents. |

# 19. VOLUME VI

# A picture containing diagram Description automatically generated

# 20. Impressed Current Cathodic Protection

## Volume VI, Chapter 17, paragraphs 17.2.2; 17.3;

**System Activation**

Updated paragraphs to conform to current response and ICCP requirements.

|  |  |
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| Existing Words | **New Words** |
| 17.2.2 Naval Air Force Ships. All aircraft carriers with installed ICCP systems must submit logs monthly per reference (a), using NAVSEA Form 9633/1 or equivalent, to the Cathodic Protection ISEA NAVSEAWARCEN PD no later than 15 days after the last day of the reporting month. NAVSEAWARCEN PD will review the ICCP log data and provide a naval message response to each ship within 15 working days indicating ICCP log receipt and system operational status. | 17.2.2 Naval Air Force Ships. All aircraft carriers with installed ICCP systems must submit logs monthly per reference (a), using NAVSEA Form 9633/1 or equivalent, to the Cathodic Protection ISEA NAVSEAWARCEN PD no later than 15 days after the last day of the reporting month. NAVSEAWARCEN PD will review the ICCP log data and provide an electronic mail response to each ship within 15 working days indicating ICCP log receipt and system operational status. |
| 17.3 POST DRYDOCKING ACTIVATION. Guidance on the activation of the ICCP systems after undocking:  a. The Cathodic Protection System should be activated as soon as electrical power is available. Early activation is encouraged to counteract stray electrical currents from waterborne welding or other industrial activity evolutions which may cause hull deterioration by electrolysis. If the ICCP system cannot be actuated within two hours following undocking, the Type Commander or Immediate Superior In Command must be notified.  b. If the cathodic protection components have been removed or power to all components is not available within 24 hours after undocking, alternate provisions should be made for activating part of the system if possible. Hull potentials can be monitored using the ship's controller reference electrode (silver-silver chloride) in conjunction with a portable volt-ohm meter.  NOTE: ALL VOLTAGES REFERENCED ARE DIRECT CURRENT.  c. If the system cannot be activated within three days of undocking, provisions should be made to ensure hull integrity by taking daily hull potential readings. Without cathodic protection, the acceptable hull potential range is 0.60 to 0.80 volts with respect to a silver-silver chloride reference cell. If daily readings are more electropositive than 0.55 volt or if changes in hull potentials greater than 0.1 volt occur, welding practices should be checked or a temporary system capable of maintaining the hull at 0.85 plus or minus 0.05 volts should be provided.  d. Where major underwater hull painting (not including touch up) has been performed less than seven days before undocking, caution should be exercised to avoid hull potentials greater than 1.00 volt to a silver-silver chloride reference cell until after the seven-day curing period. During the seven-day curing period, if the hull potential exceeds 1.00 volt, secure part or all of the system to avoid any effect on the hull coating. After a seven-day cure, proper navy hull coating systems are not affected by the higher hull voltages attainable with ICCP systems. | 17.3 IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM ACTIVATION. Guidance on the activation of the ICCP systems (e.g. following undocking or system maintenance):  a. The Cathodic Protection System must be activated as soon as electrical power is available. Early activation is encouraged to counteract stray electrical currents from waterborne welding or other industrial activity evolutions which may cause hull deterioration by electrolysis. If the ICCP system cannot be actuated within two hours following undocking, the Type Commander and Immediate Superior In Command must be notified.  b. If the cathodic protection components have been removed or power to all components is not available within 24 hours after undocking, alternate provisions should be made for activating part of the system if possible. Hull potentials can be monitored using the ship's controller reference electrode (silver-silver chloride) in conjunction with a multimeter.  NOTE: ALL VOLTAGES REFERENCED ARE DIRECT CURRENT.  c. If the system cannot be activated within three days of undocking, provisions should be made to ensure hull integrity including the potential use of a temporary ICCP system. An example of a temporary system is the Temporary Sacrificial Anode Cathodic protection system can be found on reference (b). Additional readings shall by taking daily to ensure hull potential readings are more electronegative than -0.750V vs Ag/AgCl (silver chloride) reference cell until restoration of ship’s ICCP system. If daily readings are more electropositive than 0.55 V or if changes in hull potentials greater than 0.1 volt occur, welding practices should be checked or a temporary system capable of maintaining the hull at 0.85V plus or minus 0.05 V should be provided. |

# 21. Naval Submarine Force – 3M (Submarines Only)

## Volume VI, Chapter 19-5;

**Updated Chapter**

Review the entire chapter due to extensive updates.

## 22. Periodic Maintenance Requirement Program (Submarines Only)

## Volume VI, Chapter 24, Paragraph 24.8.7;

**3M Coordinator**

Add 3MC responsibilities to maintain current Quarterly PMR MRC inventories.

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| Existing Words | **New Words** |
|  | )  24.8.7. 3M Coordinator. The 3-M Coordinator must maintain one copy of the current Quarterly PMR MRC inventories and schedules provided by SUBMEPP via the ISIC and provide this list to the Availability Coordinator. All required PMRs must be coordinated for accomplishment within the ship’s CMAV work package by the Availability Coordinator (CMAV, MMP, Ship’s Force Upkeep, and CNO Availabilities), with each work center planning and setting the required conditions for PMR execution. |

**22. Unrestricted Operations (Submarines Only)**

## Volume VI, Chapter 25, Paragraph 25.3.4.c(5);

**Ship’s QAO Responsibilities**

Add 3MC duties to assist QAO in maintaining quarterly URO MRC inventories

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| Existing Words | **New Words** |
|  | (5) The Quality Assurance Officer (QAO) assisted by the 3-M Coordinator must maintain one copy of the current Quarterly URO MRC inventories and schedules provided by SUBMEPP Representative via the ISIC. All required UROs shall normally be coordinated for accomplishment within the ship’s CMAV work package by the QAO and the Availability Coordinator, or when directed by the ISIC, with each work center planning and setting the required conditions for URO execution. |

# 23 Surface Force Ship And Aircraft Carrier Modernization Process

## Volume VI, Chapter 36;

**Updated Chapter**

Review the entire chapter due to extensive updates.

# 24. Surface Force Ship And Aircraft Carrier Modernization Process

## Volume VI, Chapter 41.3.15;

**Maintenance and Project Team**

# Added a new paragraph concerning the Schedule Analyst.

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| Existing Words | **New Words** |
|  | 41.3.15. Schedule Analyst. (Surface Force Ships only) The Schedule Analyst is a critical member of the Project Team, a project management scheduling professional, and SME who is well versed in this manual, Appendix H of reference (a) scheduling guidance, and the contractual requirements of Government Stakeholders providing GFI in support of the Integrated Production Schedule (IPS) development and management.  a. Accountable:  (1) Coordinate gathering, managing, providing technical and quality reviews, and delivery of Standard Item 009-60/111 related submissions, and for the oversite of the contractor provided IPS.  (2) Provide direct support to the PM in all aspects of scheduling and IPS development oversight and management.  (3) Provide the initial Key Events and Milestone network that supports Critical Postproduction events (i.e., TYCOM End Game and Modernizations, System Operation Verification Testing, a duration analysis with schedule risk analysis and mitigations, and an initial Critical Control Path IPS that coincides with the initial Key Events and Milestone network to the RMC Government Availability Planning Manager prior to the applicable CNO availability WPIC.  b. Responsible:  (1) Gathers, manages, provides technical and quality review and delivery of Standard Item 009-60/111 GFI to the (LMA), beginning at the 80% TYCOM “D” level lock date but no later than the 100% lock date (A-180) through availability complete on and subsequent close out (target C+90).  (2) Acts as RMC Schedule Model Review representative participates in scheduling conferences, AIT in briefs, daily production meetings, weekly production meetings and other events specific to schedule, progressing the schedule, and providing facilitation, oversight and feedback of the stakeholders that provide input to the LMA IPS.  (3) Provide Standard Item 009-60/111 Direction to the LMA in managing schedule logic testing, submission, and corrective actions (Progressing, schedule adjustments, Schedule Model Reviews etc.) facilitating Key Event and Milestone accomplishment. |

## Volume VI, Chapter 41.3.16;

**Work Integration Manager**

# Added a new paragraph concerning the Work Integration Manager.

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| Existing Words | **New Words** |
|  | 41.3.16. Work Integration Manager. (Surface Force Ships only) The Work Integration Manager (WIM) is a critical member of the Project Team to ensure that all work during the availability is integrated and coordinated effectively in support of the work certification process. The WIM is well versed in and a SME in project management principles, production scheduling practices, system testing technical concepts and that will manage, coordinate, review and advise the NSA for all Integrated Production and Test Schedule related issues.  a. Responsible:  (1) Coordinates with the Integrated Test Engineer (ITE), Project Support Engineer (PSE), Ships Force and the LMA regarding systems testing with respect to test readiness and support of shipboard systems and operators.  (2) Assists in mapping technical sequences and test procedures to appropriate milestones or key events to ensure technically correct, timely and efficient execution of the availability. Ensures testing prerequisites that effect the ships restoration efforts are identified and authorized or scheduled for completion.  (3) Monitors shipboard testing progress and takes action to ensure that testing is conducted in accordance with approved safety and technical requirements. This includes ensuring that all stakeholders, whose work has been integrated, are aware of the key event, milestone and testing requirements.  (4) Act as the NSA and PT SME representative to support all scheduling conferences, daily and weekly planning and execution meetings as required, and other IPS related briefings and discussions specific to Schedule maintenance and development.  (5) Works with the Schedule Analyst and LMA to support or facilitate the development of the Integrated Production Schedule. This includes collaboration with the ITE and other SMEs to ensure that all required weekly progress updates are provided to the LMA and updated in the IPS.  (6) Chairs the weekly IPS review meetings with the PT SME and LMA Schedulers and assigned SMEs and will provide reference (c) support to the LMA in managing scheduled testing and system restoration requirements.  (7) Acts as the Project Manager’s representative and liaison to the PT ITE and supporting LMA test and scheduling organization to verify that all related production and testing work and activities are properly technically sequenced into the IPS.  (8) Works with the Project Team and LMA to ensure that required temporary services and prerequisites required to be completed in support of the test program are in place and ready to support critical key events and milestones.  (9) Supports the PM and coordinates with the assigned ITE to ensure that system readiness required to support key event and milestone completion are maintained. Review of milestone readiness may also include review of outstanding work and testing in conjunction with the assigned PT, ITE and PSE to ensure conformance to all work specifications.  (10) Works with the assigned ITE and PSE to interpret and assist in the execution of NAVSEA technical authority and local requirements pertaining to the safe operation and testing of ship’s systems.  (11) Provides recommendations to the Project Team, Ships Force, applicable AIT Onsite Installation Coordinators and LMA needed for the preparation of the Integrated Test Schedule, Comprehensive Test Plan and Sea Trials Agenda.  (12) Works with PMs, Division and or Department Managers, Project Superintendents, Ships Force, various Project Team Personnel, AIT OSICs, Supervisors and LMA Integration and Schedule SMEs on a daily basis. Many of these discussions or meetings may be off site where the WIM acts as the NSA or PT point of contact for all matters pertaining to work integration and coordination.  b. Accountable:  (1) Acts as the NSA and Work Integration SME for all items impacting IPS development, Test Schedule development and system restoration.  (2) Provides expertise necessary to successfully coordinate the Hull, Mechanical and Electrical production work and testing sequences and interface with Combat Systems Test Programs on availabilities assigned. Collaborates with and supports the LMA to manage scheduled testing and ensure that all stakeholders, whose work has been integrated, are working to achieve Key Event and Milestone requirements. Works with the assigned Integrated Test Engineer (ITE) to ensure that the IPS and Test Schedules align to support system restoration and testing efforts and that all fit within the availability windows and LMA IPS timelines.  (3) Personally, consults and advises the PT, AIT OSICs, senior RMC Leaders, and Ship’s Commanding Officer on matters needed to support the LMAs development of the IPS and test program.  (4) Works with the PT ITE, LMA AIT Coordinators and Planners, OSICs, Ship Superintendents (Code 900 SMEs), Port Engineers and other designated SMEs, to ensure that all required GFI is submitted to the LMA in support of IPS development.  (5) Supports the Project Manager to ensure delivery of all required reference (b) and reference (c) GFI deliverables to the LMA in support of IPS development.  (6) Supports the PM and works with the assigned ITE to ensure that system readiness required to support Key Event and Milestone completion is maintained. Review of milestone readiness may also include review of outstanding work and testing in conjunction with the assigned PT, ITE and PSE to ensure conformance to all work specifications (Event Readiness). |

## Volume VI, Chapter 41.4;

**Alteration Installation Team**

# Added a new paragraph concerning the Alteration Installation Team.

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| Existing Words | **New Words** |
|  | 41.4 Alteration Installation Team Management, Oversight, And Execution.The roles and responsibilities for the following personnel are identified in references (a) and (c).  a. The AIT Manager is the government organization, represented by government employee or military personnel, tasked and funded by the AIT Sponsor to initiate, fund, plan, coordinate, schedule, manage, and oversee the successful accomplishment of the SC or Alteration.  b. The AIT OSIC is the Government or military employee designated by, and acting with, the authority of the AIT Manager on-site.  c. The AIT Lead is the senior member of the AIT that ensures the AIT adheres to all requirements of references (a) and (c), the AIT Contract, and change authorization processes. The AIT Lead will report directly to the AIT OSIC and execute contract requirements.  d. An AIT is a unit (military, government activity or contractor and subcontractors), consisting of one or more members under the direction of an AIT Manager that is trained and equipped to accomplish specific SCs or Alterations on specified ships as defined in chapter 36 of this volume. The AIT is responsible for the installation, performance, and completion of the SC or Alteration. |

# 25. Guidance for Enhanced modernization and Alteration Installation Team integration During Availabilities

## Volume VI, Chapter 43;

**Chapter Updated**

Review the entire chapter due to extensive updates.

# 26. Volume VII

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**JFMM VOLUME VII**

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**CONTRACTED SHIP MAINTENANCE**

# 27. Contract Specification Development

## Volume VII, Chapter 4;

**Chapter Updated**

Review the entire chapter due to extensive updates.