TECHNICAL SPECIFICATION
TITLE: ALTERATIONS TO SHIPS ACCOMPLISHED BY ALTERATION INSTALLATION TEAMS
NO.: TS9090-310D
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IN REPLY TO
4720
Ser 04RP/091
27 Feb 2004

From: Commander, Naval Sea Systems Command (SEA 04)

Subj: CHANGE 2 TO THE FLEET MODERNIZATION PROGRAM (FMP) MANAGEMENT AND OPERATIONS MANUAL

Ref: (a) FMP Management and Operations Manual, Revision 2 dtd Jun 02

1. The purpose of this letter is to issue change 2 to reference (a).

2. Change 2 is promulgated to replace FMP Management and Operations Manual, Volume 2, Appendix A, TS9090-310C, Alterations to Ships Accomplished by Alteration Installation Teams (AITs) dated June 2000, with revised TS9090-310D dated February 2004,which provides updated policy guidance applicable for all shipboard alterations accomplished by AITs. In addition, the revision description and revision record histories in the FMP Manual, Volume 1 will reflect the appropriate updates.

3. Change 2 is effective this date and has been posted to the FMP Website Library at the URL address, www.fmp.navy.mil.

4. NAVSEA point of contact for FMP Documentation is Mrs. Sharon Ann Shaw, SEA 04RP12. Mrs. Shaw can be reached at (202) 781-1817 or by e-mail at ShawSA@navsea.navy.mil.

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ALTERATIONS TO SHIPS ACCOMPLISHED BY ALTERATION INSTALLATION TEAMS

1. SCOPE

This specification establishes required methodology and procedures applicable for all shipboard alterations (ALTs) accomplished by Alteration Installation Teams (AITs).

1.1. GENERAL

OPNAVINST 4720.2 (Series) establishes policies and procedures for the planning and management of the Fleet Modernization Program (FMP) and establishes various types of alterations as the vehicle for implementation of permanent configuration changes to ships and ship systems. NAVSEA SL720-AA-MAN-010/020 (Series) implements the policies and procedures of OPNAVINST 4720.2 (Series). NSTS 9090-310D is a part of Appendix A of NAVSEA SL 720-AA-MAN-010/020 (Series) for alterations to ships accomplished by AITs. This specification provides requirements for the planning, estimating, scheduling, design and accomplishment of logistically supported alterations on active and reserve fleet ships by AITs and provisions for a Quality System for accomplishment of such work. Except as noted in **paragraph 1.4**, this specification is applicable to **ALL** AIT installations whether accomplished in CNO assigned availabilities or AIT installations accomplished outside such availabilities.

a. **Budgeting**. Details of the budgetary process for the various types of alterations accomplished by AITs are contained in NAVSEA SL720-AA-MAN-010/020 (Series), Section 6.

b. **Funding**. Alteration accomplishments are funded based on the budgeted and programmed requirements. Details of financial management of Alterations accomplished by AITs are contained in NAVSEA SL720-AA-MAN-010/020 (Series), Section 6.

c. **Navy Data Environment - Navy Modernization (NDE -NM)**. NDE-NM is designated as the official US Navy authoritative database to provide automated and timely information to the FMP community. NDE-NM is a web enabled enterprise model that integrates and merges existing modernization, maintenance and logistics structures into a single architecture system that provides timely FMP information that supports planning, programming, budgeting, management and execution of the FMP.

d. **Trouble Reports**. The trouble report is the vehicle for reporting significant problems to NAVSEA and other activities involved in work performed on Naval ships for use in training and improving the weaknesses identified as a result of the problems. NAVSEA Instruction 4700.17 (Series) provides requirements for preparing and submitting trouble reports.

1.2. DEFINITIONS

As used in this document, the definitions contained in **Appendix H** apply.

1.3. APPLICABILITY

This specification is applicable to all alterations accomplished on U.S. Navy ships, including surface ships, surface combatants, carriers, submarines and service craft (hereafter collectively referred to as "ships"), by AITs except as noted herein (**see paragraph 1.4**).

1.4. EXCEPTIONS

This specification does not apply to:

a. Alterations to nuclear components and systems under the cognizance of the Deputy Commander for Nuclear Propulsion (NAVSEA 08). AITs shall not perform depot level work in naval nuclear propulsion plants.

b. Strategic Systems Program Alterations (SPALTs) issued by the Director, Strategic Systems Programs (DIRSSP).

c. Temporary modifications performed as part of a shipyard availability to support industrial work or associated testing.

d. Temporary Alterations (TEMPALTs) to be accomplished on submarines. NAVSEAINST 4720.14 (Series) and NAVSEA S9070-AA-MME-010/SSN/SSBN (Series) provide specific policy and procedures for submarine TEMPALTs.

e. Installation support personnel and certification teams, who only provide technical guidance, equipment check-out and grooming, certification of systems or on-site training for ship's force not associated with the accomplishment of an alteration.

1.5. ROLES AND RESPONSIBILITIES

The general roles and responsibilities for the following activities are identified to provide guidance for AIT installations. These roles and responsibilities are further defined throughout this technical specification and can be refined, if required, in a Memorandum of Agreement.

a. Naval Supervising Activity (NSA) - the single naval activity charged with the oversight responsibility of work being accomplished on U.S. Naval ships during any type of availability. The NSA has overall responsibility for integrating the planning and execution of work on Naval Ships by all involved activities. Implementation of an integrated planning, schedule, work control, and ship certification process is essential to a project's success. Effective

coordination and oversight must be provided to ensure that all work performed during any availability will allow the NSA to meet the overall project schedule, cost, and quality requirements. NSAs have the authority and responsibility to preclude and/or stop AITs from performing work when they are not in compliance with this or other invoked specifications. NSAs shall notify the applicable program office and NAVSEA 04 of any AIT work suspension/cancellation. The NSA has the following specific responsibilities:

- Control AIT access to ships.
- Ensure that the AIT's intended work is authorized.
- Ensure AIT work is scheduled and integrated into the total work plan for the availability.
- Ensure that all ship systems and locations impacted by AIT work is known and understood by NSA cognizant departments.
- Participate in critiques and problem investigations (e.g., Trouble Reports), as necessary.
- Monitor the effectiveness of AIT Manager execution of Quality Assurance (QA) oversight responsibilities.
- Coordinate with the AIT Manager and Ship's Force to ensure satisfactory
- completion of alterations.

b. AIT Sponsor is the government activity that tasks and funds the AIT Manager and AIT. The AIT sponsor will:

- Ensure that all subordinate activities are in compliance with the requirements of this Technical Specification.
- Ensure AIT installations are funded to the level necessary to ensure all quality system requirements are met, NSA quality sampling (in accordance with **paragraph 1.5.a**) above is provided, and qualified/trained personnel are in place to perform requisite technical, environmental, safety and quality oversight responsibilities.
- When appropriate, prepare and issue a formal agreement with the regional/Lead Chief Engineer (CHENG) regarding engineering and technical authority policy as well as technical support. Per NAVSEAINST 5400.95 (Series), NAVSEA CHENG concurrence on the agreement is required.
- Ensure AIT compliance with Integrated Logistic Support (ILS) requirements.
- Perform annual quality assessments of AITs in accordance **with section 4.4**.
- Ensure that all work within the Submarine Safety (SUBSAFE) certification Boundary is performed by a NAVSEA Note 5000 activity and that Supervising Authority functions required by NAVSEA 0925-062-0010, (Series), SUBSAFE Requirements Manual are performed by a Government Activity identified by NAVSEA Note 5000.

c. The AIT Manager is the government activity, In Service Engineering Agent (ISEA), military person or government civilian tasked and funded by the AIT Sponsor to initiate, plan, coordinate, schedule, manage and oversee the successful accomplishment of the alteration in accordance with Fleet Modernization Program (FMP) policy and procedures. The AIT Manager is responsible for investigating significant problems, and preparing and submitting trouble reports in accordance with NAVSEA Instruction 4700.17 (Series). Additionally, the AIT Manager is responsible for implementing the corrective actions addressed in the trouble report. The ship involved, the contractor(s) involved, and the applicable NSA will be party to the investigation and will assist in the preparation of the trouble report. The AIT manager will:

- Ensure that the AIT effort is fully coordinated with the Ship Program Managers (SPMs), Life Cycle Manager (LCM), NSA, and Planning Yard (PY).
- Plan a tentative schedule of alteration accomplishment as soon as the determination is made to accomplish the alteration by an AIT.
- Provide a 4790/2K to the Type Commander (TYCOM) for loading in Regional Maintenance Automated Information System (RMAIS).
- Submit configuration change data to the Configuration Data Manager (CDM) sixty (60) days prior to installation.
- Ensure that the AIT/AIT on site installation coordinator reports to the Regional Maintenance and Modernization Coordination Office (RMMCO) gatekeeper and/or NSA, as applicable, prior to reporting onboard, with all requisite documentation as required by this Technical Specification.
- Issue a ship-check report in coordination with the SPM.
- Liaison with planning activity, RMMCO and NSA no later than 180 days prior to the start of installation.
- Provide advance notification of alteration accomplishment requirements/impacts and make arrangements (including funding) for any required support services not being provided by AIT.
- Provide funding for any required support services in accordance with **section 3.4.3**
- Ensure that the AIT's have a quality system/plan approved by NAVSEA 04 prior to installation and that proper training, certifications and quality assurance/control is in place for the work identified.
- Ensure all quality system requirements are met, appropriate quality oversight during installation is provided and qualified/trained personnel are in place to perform requisite technical and quality oversight responsibilities, including in-process monitoring on all shifts conducting work.
- Validate compliance with quality plan.

- Ensure adherence to safety, technical, environmental, and production process requirements.
- Verify compliance with installation plan.
- Verify required training and personnel/procedure qualifications.
- Ensuring proper completion of inspection/installation records.
- Ensure that required environmental permits are onsite prior to the start of work.
- Ensure a site specific Environment Protection Agency (EPA) Hazardous Waste (HW) Generator ID Number is in place for disposal of AIT generated HW.
- Forward copies of the Alteration Completion Report in accordance with **section 3.7.4** of this technical specification.

d. The AIT is a unit (military, government activity or contractor) under the direction of an AIT Manager or designated agent (ISEA, military or government civilian) of the AIT Manager that is trained and equipped to accomplish specific alterations on specified ships. The AIT is responsible for the installation, performance and completion of the alteration. The AIT will:

- Establish contact with the applicable NSA/TYCOM to determine acceptable design shipcheck dates.
- Provide visit clearance information to the ship, TYCOM, NSA, or other
- appropriate naval activity.
- Provide and maintain an approved Quality System.
- Release the readiness to start message.
- Check-in with the designated RMMCO and/or NSA, as applicable.
- Present a pre-brief that provides specific details of the installation.
- Supply, assemble, and transport all of the material that is not Headquarters Centrally Provided Material (HCPM) for the installation.
- Provide proper handling and storage of hazardous material (HM)/hazardous waste (HW) during the installation process
- Perform continuous daily housekeeping (including broom cleaning) and properly dispose of all installation and associated material including hazardous material/waste.
- Provide all required environmental reports cited in NAVSEA Standard Item 009-02 to the NSA via the environmental coordinator.
- Protect equipment from contamination during the installation process.
- Perform testing in accordance with test procedures.
- Provide certification test results to the certifying authority.
- Witness ships force pre-installation check-out of applicable systems.
- Submit periodic task status reports.
- Conduct final housekeeping in all areas involved in the alteration accomplishment.
- Comply with all NSA environmental instructions and procedures.
- Notify the NSA of AIT departure from the alteration site.

- Conducts out-brief and obtain signatures of the ship's designated representatives.
- Provide redline drawings to the ship and planning yard.
- Comply with all the requirements of NAVSEA Technical Publication S0400-AD-URM-010/TUM Rev level: 00- Tag-out Users Manual (TUM).
- Comply with all local, state, and federal safety and environmental laws and regulations. Comply with facility and US Navy safety and environmental instructions.
- When requested by the NSA/RMMCO, provide a copy of the approved quality system, applicable work instructions/procedures, evidence of required personnel training/qualification, and evidence of required procedure approval/qualification.
- Comply with requirements of NAVSEA 0925-062-0010, (Series), Submarine Safety (SUBSAFE) Requirements Manual to ensure that all SUBSAFE work is performed by activity authorized by NAVSEA Note 5000.

e. The AIT On-site Installation Coordinator is the government or military employee designated by, and acting with the authority of, the AIT Manager. The AIT On-site installation coordinator will:
- Be responsible for the conduct of the installation.
- Act as the point-of-contact with the ship and NSA.
- Ensure AIT adherence to safety, environmental, quality, and technical requirements.
- Be responsible for the conduct of the AIT.
- Resolve AIT issues, particularly those relating to a stop work order.
- Maintain completed test reports during accomplishment of the alteration.
- Attend NSA availability production and coordination meetings and Planning Board for Maintenance (PBM) meetings.
- Provide and update installation progress.
- Provides copy of a current, approved ILS Certification Form during In-brief to the NSA/RMMCO.
- Ensure delivery of all documentation and ILS elements.
- Provide on site installation oversight and management for respective installs.
- Resolve quality discrepancies as directed by the AIT manager.
- In accordance with NAVSEA 0925-062-0010, Revision C (Series), Submarine Safety (SUBSAFE) Requirements Manual, ensure that AIT work responsibilities that involve SUBSAFE work is performed only by a NAVSEA Note 5000 activity.

f. The Regional Maintenance and Modernization Coordination Office (RMMCO) is a Regional Maintenance Center-aligned, Fleet-chartered organization that serves as the primary point of entry for all waterfront related alteration and maintenance activities. The RMMCO will:

- Serve as the "gate keeping" office for Alteration Installation Team (AIT) check-in and checkout.

1.6. CANCELLATION

This technical specification cancels and supercedes NAVSEA Technical Specification 9090-310C.

2. REFERENCED DOCUMENTS

2.1. ISSUES OF DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Use current revisions where the version referenced has been superceded.

SPECIFICATIONS

NAVAL SEA SYSTEMS COMMAND

- Technical Specification 9090-210 (Series) - Justification/Cost Form and Alteration Equivalent to Repair Process - http://www.fmp.navy.mil
- Technical Specification 9090-100 (Series) - SHIPALT Liaison Action Report (LAR) - http://www.fmp.navy.mil
- Technical Specification 9090-500 (Series) - Ship Alteration Report (SAR) Preparation - http://www.fmp.navy.mil
- Technical Specification 9090-600 (Series) - Ship Alteration (SHIPALT) Installation Drawing (SID) Preparation - http://www.fmp.navy.mil
- Technical Specification 9090-700 (Series) - Ship Configuration and Logistics Support Information System (SCLSIS)
- NAVSEA Standard Items

PUBLICATIONS

CHIEF OF NAVAL OPERATIONS

- OPNAVINST 4720.2 (Series) - Fleet Modernization Program (FMP) Policy - http://www.fmp.navy.mil
- OPNAVINST 4790.4 (Series) - Ships Maintenance and Material Management (3-M) Manual
- OPNAVINST 5100.19 (Series) - Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat

COMMANDER U.S. FLEET FORCES COMMAND (CFFC) /COMMANDER U.S. PACIFIC FLEET (COMPACFLT)

- FFC 4790.3 (Series) - Joint Fleet Maintenance Manual
- CINCLANTFLT/CINCPACFLT 4720.3 (Series) - Management of Afloat Combat Systems and Command, Control, Communications, Computer, Intelligence (C4I) Installations and Improvements

NAVAL SEA SYSTEMS COMMAND

- NAVSEA SS800-AG-MAN-010/P-9290 (Series) – System Certification Procedures and Criteria Manual for Deep Submergence Systems
- NAVSEA 0905-LP-485-6010 (Series) – Control of Testing and Ship Conditioning (Submarines)
- NAVSEA S0400-AD-URM-010/TUM (Series) – Tag-out User's Manual (TUM)
- NAVSEAINST 5400.95 (Series) – Naval Shipyard, SUPSHIP and Fleet Engineering and Technical Authority Policy
- NAVSEA 0948-LP-045-7010 (Series) – Material Control Standard (Non-Nuclear)
- NAVSEA S9074-AR-GIB-010/278 (Series) - Requirements for Fabrication Welding and Inspection, and Casting Inspection and Repair for Machinery, Piping and Pressure Vessels
- NAVSEA 0900-LP-001-7000 (Series) – Fabrication and Inspection of Brazed Piping Systems
- NAVSEA TL855-AA-STD-010 (Series) – Naval Shipyard Quality Program Manual
- NAVSEA S0300-B2-MAN-010 (Series) - SUPSHIP Operations Manual (SOM)
- NAVSEA 0902-018-2010 (Series) - General Overhaul Specifications for Deep Diving Submarines (DDGOS)
- NAVSEA 0924-062-0010 (Series) - Submarine Material Certification Requirements Manual for the Submarine Safety Program

- NAVSEA S9040-AA-GTP-010/SSCR (Series) - Shipboard Systems Certification Requirements for Surface Ship Industrial Periods (Non-Nuclear)
- NAVSEA S9070-AA-MME-010/SSN/SSBN (Series) - Guidance Manual for Temporary Submarine Alterations
- NAVSEA S9AAO-AB-GOS-010/GSO (Series) - General Specification for Overhaul of Surface Ships
- NAVSEA S9AA0-AB-GOS-030 (Series) - General Specification for Overhaul of Surface Ships (GSO) AEGIS Supplement

- NAVSEA SL720-AA-MAN-010/020 (Series) - Fleet Modernization Program Management and Operations Manual (Volumes 1 & 2) http://www.fmp.navy.mil
- NAVSEA T9066-AA-MAN-010 (Series) - Navy Outfitting Program Policy and Procedures Manual
- NAVSEAINST 2450.2 (Series) - Electromagnetic Compatibility
- NAVSEAINST 4700.17 (Series) - Preparation and Review of Trouble Reports
- NAVSEAINST 4720.3 (Series) - Process for Initiating, Approving and Scheduling Afloat C4I Systems Installations and Upgrades
- NAVSEAINST 4720.11 (Series) - Shipboard Installations and Modifications Performed by Alteration Installation Teams
- NAVSEAINST 4720.14 (Series) - Temporary Alterations to Active Fleet Submarines; Control of
- NAVSEAINST C9210.4 (Series) - Changes, Repair and Maintenance to Nuclear Powered Ships
- NAVSEAINST 9304.1 (Series) - Shipboard Electrical Cable and Cableway Inspection and Reporting Procedures
- NAVSEANOTE 5000 (Series) - Activities Authorized to Perform Submarine Safety (SUBSAFE) Work

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3. REQUIREMENTS

3.1. GENERAL

OPNAVINST 4720.2 (Series) establishes policies and procedures for the planning and management of the FMP and establishes the alterations as the vehicle for implementation of permanent configuration changes to ships and ship systems. NAVSEA SL720-AA-MAN-010/020 (Series) implements the policies and procedures of OPNAVINST 4720.2 (Series). NAVSEAINST 4720.11 (Series) defines the use of AITs in this process and in the accomplishment of TEMPALTs. This specification outlines the process to be followed for the planning, estimating, scheduling and accomplishment of all permanent and temporary alterations, except as defined in **paragraph 1.4**, to ships by AITs.

3.1.1. QUICK REACTION ALTERATION ACCOMPLISHMENT

In the event an AIT Manager is directed to accomplish an unplanned or unscheduled alteration, the accomplishment of that alteration shall be in accordance with the requirements outlined in this specification. All alterations are to be provided with complete logistics support. A waiver is required if ILS products are not complete and verified by Start Of Availability (SOA) and on-board End Of Availability (EOA). If provisions of this specification cannot be met, the AIT Manager shall submit a waiver request to the applicable Ship Program Manager (SPM)/TYCOM for approval, as required by the applicable section of NAVSEA SL720-AA-MAN-010/020 (Series), with an information copy to the PY, CDM, designated NSA and other activities as appropriate. ILS waivers are covered in Section 8 of the FMP Manual. Waiver requests may be made by letter or message and shall explain why specific provisions of this specification cannot be met and shall indicate when these provisions will be corrected or completed. Work impacting the material readiness of the ship shall not begin until the waiver has been granted. In all cases, the AIT Manager should begin immediate liaison with the NSA and/or RMMCO to facilitate rapid installation completion.

3.2. SHIPALT AND EQUIPMENT ALTERATION (MACHINERY ALTERATION (MACHALT), ORDNANCE ALTERATION (ORDALT), FIELD CHANGE (FC), ENGINEERING CHANGE (EC)) PRE-INSTALLATION REQUIREMENTS

3.2.1. INITIAL DETERMINATION OF SHIPALT/EQUIPMENT ALTERATION ACCOMPLISHMENT BY AIT.

The initial determination that a given SHIPALT/Equipment Alteration hardware and/or computer programs could be accomplished by an AIT is usually made by the Chief of Naval Operation (CNO) Resource Sponsors (military improvements), the System Command (SYSCOM) (technical improvements) or TYCOMs when the alteration is approved as a feasible and desirable requirement. In general, an AIT should be used when the technical and/or specific nature of the work requires specialized skills, a substantial government financial savings can be obtained, the

flexibility of an AIT is required due to short notice installations or substantial "lessons learned" can be obtained from re-using the same team.

3.2.2. EQUIPMENT ALTERATION DEVELOPMENT

The Life Cycle Manager (LCM) should begin alteration development in accordance with the configuration control requirements of the applicable equipment prior to, or concurrent with, the initial determination that a given alteration is to be accomplished by an AIT. The LCM should also determine whether or not ship, system or equipment certification, in accordance with NAVSEA S9040-AA-GTP-010/SSCR (Series), would be required upon completion of the alteration development. This determination is part of the alteration development. If certification is required, the certification testing should be determined coincident with determination of the AIT activity. The AIT Manager will ensure that the alteration development effort is fully coordinated with the SPMs and LCM. Total cost estimation data should be reflected in an approved Engineering Change Proposal (ECP)

3.2.3. SHIPALT DEVELOPMENT

Prior to or concurrent with the initial determination that a particular SHIPALT is to be accomplished by an AIT, the Systems Command should begin alteration development. This will include development and approval of a Justification/Cost Form (JCF), in accordance with NAVSEA Tech Spec 9090-210 (Series) or equivalent, and entry of the requirement into NDE-NM database. SHIPALT development also includes updating of applicable configuration baseline documentation, coordination with the applicable PY to avoid creating interference with other SHIPALT designs and completion of SHIPALT Record (SAR) development, in accordance with NAVSEA Tech Spec 9090-500 (Series). The SPM, for all alterations under his/her cognizance, must also determine whether ship or system certification, in accordance with NAVSEA S9040-AA-GTP-010/SSCR (Series), will be required upon completion of the alteration, select the AIT and, when applicable, select the activity to perform certification testing. The AIT Manager will ensure that the AIT effort is fully coordinated with the designated SPM, LCM, NSA, and PY.

3.2.3.1. INITIAL ENTRY OF A SHIPALT REQUIREMENT INTO NDE

The SPM shall enter a SHIPALT requirements and PARM/LCM equipment alterations requirements into the NDE database using procedures specified in NAVSEA SL720-AA-MAN-010/020 (Series) as soon as the requirement is approved, generally after approval of the JCF and assignment of the SHIPALT number. The NDE entry should indicate if the alteration is capable of being accomplished by an AIT. Material/equipment that has been identified in the JCF, as being procured by the AIT from the Federal Supply System should be entered into NDE by the SPM as part of the initial SHIPALT entry so that the applicable procurement activity can be made aware of the requirement.

3.2.3.2. COST ESTIMATING FOR SHIPALTS.

When the SHIPALT is entered into NDE as "AIT CAPABLE", an alteration cost estimate by the AIT, to include the cost of additional industrial support services, including work integration and QA sampling identified in **paragraph 1.5** required by the AIT, but not within its capability, will be entered, as well as an industrial activity cost estimate to accomplish the alteration. At the JCF stage of alteration definition, costs are difficult to accurately estimate, but provisions for these requirements must be made. The estimate will be entered into NDE by the SPM after approval of the JCF. After the SAR is prepared and the full extent of the SHIPALT has been defined, accurate estimates must be developed and entered into NDE by the SPM to provide a more accurate basis for budget development. The following factors must be considered in the development of the cost estimate:

a. **Installation Manday Estimates for JCFs**. Installation mandays are the number of mandays required to actually accomplish the SHIPALT. This number includes certification testing (if required); along with certification test report development and all associated incidental work. Incidental work includes interference removal and reinstallation, fastener replacement, replacement of damaged insulation and deck matting, cableway banding, painting, clean-up, training, documentation updates, storage, handling, disposal of HM/HW, permit application, EPA HW Generator ID No., environmental reports, etc. Also included in the manday estimates are industrial support services (e.g. crane services, local office facility support, electricity, hazardous waste disposal, welding, compressed air, and other services listed in **paragraph 3.4.3** of this specification) not provided by the AIT. These services may be provided by a Naval Station outside of a Chief of Naval Operations (CNO) scheduled availability, or by a Naval Shipyard or Master Ship Repair (MSR)/Agreement for Boat Repair (ABR) contractor during a CNO scheduled availability. The JCF for SHIPALT accomplished by AITs shall reflect the number of mandays required to accomplish the alteration in its entirety, including the incidental work described herein. After the SAR is prepared and the full extent of the SHIPALT is defined, a more accurate estimate shall be developed and entered into NDE by the SPM.

b. **Planning Manday Estimates for JCFs**. Planning manday estimates are estimates of the mandays required to perform the necessary planning to accomplish an alteration on one ship. This includes mandays to be expended for the acquisition of AIT-furnished material, prefabrication of assemblies, equipment burn-in, packaging/crating of equipment, management functions and, when applicable, certification test plan development. At the JCF stage of SHIPALT development, required planning mandays are difficult to accurately estimate but some provision for these requirements must be made. After the SAR is prepared and the full extent of the SHIPALT has been defined, a more accurate estimate shall be developed and entered into NDE by the SPM.

c. **Incidental Material Estimates for JCFs**. Incidental material is that material which the AIT will be required to procure to accomplish a SHIPALT. This consists of all material not being supplied as Headquarters Centrally Provided Material (HCPM), including consumable materials such as welding rods, paint, etc., required in completing a SHIPALT. After the SAR is prepared and the full extent of a SHIPALT is defined, a more accurate estimate shall be developed and entered into NDE by the SPM.

3.2.4. PLANNING

The AIT Manager should begin planning a tentative schedule of alteration accomplishment as soon as the determination is made to accomplish the alteration by AIT. For SHIPALTs, the planning schedule should be based on SPM approval of the SAR, SIDs and ILS, schedule of equipment delivery, availability of AITs, availability of ILS products, and the anticipated industrial availability schedules of applicable ships. For Equipment Alterations, the planning schedule should be based on the schedule of alteration kit deliveries, the availability of AITs, the availability of ILS products and the anticipated industrial availability schedules of applicable ships. The NSA will require submission of a tentative SHIPALT or Equipment Alteration installation schedule at A-180 days, for CNO Scheduled Availabilities, in order to ensure proper integration into the overall production schedule.

If the SHIPALT or Equipment Alteration is to be accomplished by someone other than the prime contractor/shipyard, the NSA is responsible for determining when the AIT will be allowed access to spaces and systems so as to optimize overall project performance and adherence to schedule.

If system certification, in accordance with NAVSEA S9040-AA-GTP-010/SSCR (Series), is required for SHIPALTs or Equipment Alterations, the certification-testing schedule must also be included. The planned schedule of accomplishment and, if applicable, system certification should be fully coordinated with the SPM(s), LCM (if not the AIT Manager), Alteration Management Planning (AMP) organization, NSA, PY(s), and TYCOM(s).

3.2.5. SCHEDULING AND PRE-INSTALLATION COORDINATION REQUIREMENTS

a. Routine AIT Scheduling and Pre-installation Coordination Requirements for SHIPALTS/Equipment Alterations/TEMPALTS.

(1) Outside of Scheduled CNO Availabilities. AIT visits to ships for approved alterations (e.g., SHIPALTs, Field Changes, Engineering Changes) will be scheduled and coordinated In Accordance With (IAW) appropriate SPM, TYCOM and, if applicable, RMMCO policy and procedures. The AIT Manager shall present the proposed alteration accomplishment schedule to the SPM and TYCOM for coordination and concurrence. This will provide advance notification to the applicable ships, CDM, NSA, Alteration Management Planning-Field Coordinating Office (AMP-FCO), and PY of the intent to accomplish the alteration. SHIPALTs, TEMPALTs, and all equipment alterations information are entered into NDE. This becomes the actual programming of the alteration for accomplishment outside of a scheduled CNO availability.

The AIT Manager responsible for the installation shall submit configuration change data to the CDM at least 30 days prior to installation. All AIT-planned installations must have configuration and/or alteration records pre-loaded in the Configuration Data Manager Database – Open Architecture (CDMD-OA) database after alteration approval but prior to the installation. TYCOMs must ensure that approved AIT installation schedules (e.g., quarterly scheduling message) are provided to CDMs in order for this process to function correctly. CDMs will submit configuration records in CDMD-OA for the approved alterations with an ASC/ISC of "J" for

unconfirmed planned installations. The CDM should change the ASC/ISC to “P” to initiate any on-board spares and other support processes prior to the installation to facilitate the ship having all required support items on-board prior to completion of the installation. For planned deletes, CDMs will modify ship’s configuration records with an ASC/ISC of "N"/"E" (except Ohio Class). Upon installation accomplishment, the AIT Manager will electronically report the change of the ASC/ISC TO "D"/"G" ("D"/"A" for Ohio Class) to the CDM for processing in CDMD-OA. In addition, if affected ships have Shipboard Non-tactical ADP Program (SNAP/NTCSS installed, configuration and logistics data will be transmitted to the ship via the Automated Shore Interface (ASI) process. For ships that do not have SNAP installed, a hard copy Mini Coordinated Shipboard Allowance List (COSAL) must be developed by the Naval Inventory Control Point (NAVICP), Mechanicsburg, and returned to the AIT. The AIT must have this document at the time of alteration accomplishment. At the time of entry into the NDE database, required inputs to complete an OPNAV Form 4790/2K will be provided by the AIT Manager to the TYCOM for loading in the RMAIS shore file to document the scheduling and, later, the accomplishment of the alteration in Maintenance and Material Management (3M).

Additionally, if the AIT will require industrial support, as listed in **paragraph 3.4.3** of this specification (e.g., crane and rigging services, welding/burning, compressed air), during accomplishment of the alteration, additional information (OPNAV Form 4790/2K) requesting these services will be provided for loading into the RMAIS shore file. The AIT On-site Installation Coordinator/AIT Leader will contact the RMMCO to coordinate scheduling of an in-brief with the ship’s Commanding Officer, or designated representative, prior to installation commencement. The AIT On-site Installation Coordinator/AIT Leader will notify the RMMCO as to the date, time, and location of the ship’s out-brief. The AIT On-site Installation Coordinator/AIT Leader will provide the ship with a draft electronic installation completion report, in Navy message format, and a listing of equipment impacted, with assigned CDM Record Identification Numbers (RINs) and alteration/installation status codes (in lieu of 4790/CK), during the out-brief in accordance with TYCOM directives.

(2) During Scheduled Chief of Naval Operations Availabilities. The AIT Manager shall verify that the SPM included the alteration in the Availability Advance Planning Letter and in the subsequent Availability Authorization Letter for that CNO availability. The AIT Manager, or designated representative, shall keep the LCM, TYCOM, SPM, CNO availability planning activity, CDM, AMP-Field Coordinating Office (FCO), PY, and NSA informed of the AIT’s schedule and any schedule changes. OPNAV Form 4790/2K shall be initiated to document the need for support services if any support services are required. In addition, if required by the NSA, any required support services must be specified using Standard Work Template (SWT) 980-01, “Support Services, Provide.” The NSA can then prepare a 4E specification work item in accordance with the Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP) Operations Manual for inclusion in the CNO availability solicitation for private sector industrial availabilities, or a job summary and Task Group Instruction (TGI) for Naval shipyard availabilities.

The AIT Manager, or designated representative, shall present the proposed alteration accomplishment schedule to the SPM and TYCOM for coordination and concurrence. This will provide advance notification to the applicable ship, CDM, NSA, AMP-FCO, and PY of the intent

to accomplish the alteration. For SHIPALTs and TEMPALTs not identified in **paragraph 1.4** as well as all other equipment alterations, this information is entered into the NDE, or the TYCOM approved Test & Monitoring Systems (TAMS) for submarines, LCRS or SAS for carriers) scheduling databases. At the time of entry into the scheduling database, the AIT Manager will provide an OPNAV Form 4790/2K to the TYCOM for loading in the shore file to document the scheduling and, later, the accomplishment of the alteration in the 3M database.

The PY shall submit to the CDM by A-2 (months), final Configuration Overhaul Planning (COP) data of all alterations/installations in the work package.

The In Service Engineering Agent (ISEA) or the AIT Manager, as tasked by the SPM, shall pre-load configuration and/or alteration records in CDMD-OA prior to the installation. CDMs will ensure that ship's configuration records in CDMD-OA for planned alterations/installations contain an alteration/installation status code (ASC/ISC) of "J" for unconfirmed planned installations prior to A-2 (months). Subsequent to receipt of final COP data, but not sooner than A-2 (months), the CDM will modify ship configuration records in CDMD-OA with an ASC/ISC of "P" for confirmed planned installations. For planned deletes, CDMs will ensure that ship's configuration records contain an ASC/ISC of "N"/"E" (except for Ohio class).

Regional Maintenance Commands (RMC) will confirm that planned alterations are resident in the ship's database by matching CDMs and ships using Data Comparison for Integrated Logistic Overall/Data Base Reconciliation (DC4ILO/DBR) process. If the data is not present in the ship's database, the RMC will notify the CDM and assist in correcting the discrepancies.

The NSA shall list the status of all availability work package alterations (i.e. installed by shipyard and/or AIT) for which they are responsible in the A-60 (days) notification letter and any Emergent/Quick Reaction alterations in the end of availability completion report. The AIT Manager is responsible for verification of delivery of all corresponding ILS products as required in the ILS Certification Sheets. The AIT Manager will validate/verify alteration/installation accomplishment and reports the change of the ASC/ISC to the CDM. The CDM will indicate completion in CDMD-OA with the use of ASC/ISC of "D"/"G" ("D"/"A" for Ohio class). In addition, if the affected ship has SNAP/NTCSS installed, configuration and logistics data will be transmitted to the ship via the Automated Shore Interface (ASI) process.

For ships that do not have SNAP installed, a hard copy Mini-COSAL must be developed by the NAVICP, Mechanicsburg, and returned to the AIT. The AIT must have this document at the time of alteration accomplishment.

b. **Quick Reaction Alteration Scheduling.** The AIT Manager will upon receipt of SPM approval and authorization, schedule quick Reaction Alterations, including Equipment Alterations, with the TYCOM, in the most expeditious manner available. The NSA should be provided at least five (5) day advance notification to allow adequate industrial support planning. Once scheduling is accomplished, the SPM, AIT Manager, LCM (if not the AIT Manager), PY, CDM, AMP-FCO, and NSA shall be notified of the schedule. At this time, inputs required to generate an OPNAV Form 4790/2K are to be provided by the AIT Manager to the TYCOM for loading in the RMAIS shore file to document the scheduling and, later, the accomplishment of

the alteration in the 3M database. Additionally, if the AIT will require industrial support (e.g., crane and rigging services, welding/burning, compressed air, etc.) during accomplishment of the alteration, an additional OPNAV Form 4790/2K requesting these services will be provided to the TYCOM by the AIT Manager for loading in the RMAIS shore file. For Quick Reaction Alterations being accomplished during CNO availabilities, the requirements pertaining to access and support services in paragraph 3.2.5.a. (2) should be accomplished as early as possible. The AIT Manager shall keep the TYCOM, SPM, CDM, PY, AMP-FCO, and NSA informed of any schedule changes.

c. **Scoping and Readiness Assessments.** When the alteration schedule is presented to the TYCOM, the AIT shall provide an assessment of the size of the effort (number of mandays), estimated total length of time required to complete the installation (number of calendar days) and the possible impact on ship readiness requirements. When required, the TYCOM will take action to establish a Restricted Availability (RAV) or Technical Availability (TAV) in coordination with the appropriate operational commander unless the alteration is scheduled to be accomplished during a CNO scheduled availability. Following TYCOM approval for installation the AIT Manager will contact the designated NSA to facilitate generation of a detailed ship installation schedule, inclusion of the ALT installation into the ship's maintenance and modernization work integration plan, determination of potential cross-task common support opportunities, determination of common "trade" tasks that might be accomplished under the NSA's auspices and determination of common service (e.g., electrical power, water) cost allocation.

d. **Memorandum of Agreements.** Memorandum of Agreements (MOAs) will be written by the AIT Manager to clarify the responsibilities of all participants involved in the alteration installation. AIT Sponsors are responsible for ensuring that NSA QA support services and funding requirements to accomplish the responsibilities are planned and clearly defined in a written MOA and, when applicable, are in accordance with NAVSEA letter Serial 04/086 of 22 Apr 2002, Submarine Non-Nuclear ShipAlt Migration and Pricing Policy. Some NSAs provide standard MOA templates for use during their availabilities. The NSA should be contacted by the AIT Manager prior to writing an alteration specific MOA to facilitate incorporation of NSA requirements. The NAVSEATS 9090-310D is written to provide general guidance to activities involved in the alteration process. The MOA shall be written to provide specific requirements to each activity involved in accomplishing an alteration. The depth of the specific requirements, identified in the MOA, will depend on the complexity of the subject alteration. Participants include but are not limited to the installing activity, NSA, LCM, ship, and support activity. Topics to be addressed in the MOA depend on the complexity and scope of the alteration. The following are sample topics:

1. Funding requirements
2. Meeting attendance
3. Asbestos
4. Tagout, work control & testing
5. QA, testing & certification
6. Schedules
7. Clearances

8. Hazardous waste
9. Safety
10. General cleanliness
11. In brief/out brief
12. Support services
13. Industrial radiation safety
14. SUBSAFE (Sub only) QA
15. Violations of safety/hazardous materials
16. DSS-SOC (Subs only)
17. NAVSEA Standard Items that are invoked for the installation.
18. Clearly defined Technical Authority responsibilities consistent with NAVSEA Instructions 5400.97 and 5400.95.
19. Environmental reporting e.g. paint, solvent, adhesive, fuel, welding rod usage reports as per NAVSEA Standard Item 009-02.
20. Painting and adhesive application permit.
21. Diesel engine (50hp or greater) registration/permit.
22. Site-specific EPA HW Generator ID No. if using an MSR or ABR to dispose of HW.

Note: This is not an all-inclusive topic list. The areas that may require clarification will vary with each alteration installation.

3.2.6. ALTERATION INSTALLATION TEAM TASKING

An AIT activity must be tasked to accomplish a specific alteration by the applicable equipment/system LCM (NAVAIR, NAVSEA, and Space and Naval Warfare Systems Command [SPAWAR]), SPM, or TYCOM. AITs should be tasked as soon as funding is identified, to allow the AIT the maximum possible planning time. The tasking may be in one or two parts, depending on the level of AIT involvement. If the alteration design and ILS documentation are to be prepared by another activity (usually the applicable PY), the AIT may be tasked to procure the required long lead-time and incidental material and accomplishment of the SHIPALT. The AIT Manager shall ensure that copies of the tasking (and all subsequent changes) are forwarded to the SPM, the equipment/system LCM, the AMP office (NAVSEA 04) and the applicable PY. AIT managers will ensure that all AITs under their control are directed to report to the applicable NSA and RMMCO Gatekeeper prior to boarding the ship.

3.2.6.1. DESIGN DEVELOPMENT TASKING

Under normal circumstances, the applicable PY will be tasked and funded to develop the detailed design and associated drawings for a SHIPALT. When design development for a Title K SHIPALT cannot be completed by the PY in time to support the scheduled alteration accomplishment, the SPM and the AIT Manager will choose an activity for development of the detailed design drawings for alterations based on competitive bid or best value. The competitive bid process may include the PY. The design development task will authorize development, by a qualified design agent, of detailed design and associated drawings (including the performance of shipchecks), preparation of applicable ILS documentation, development of acceptance testing documentation and, when required, a preliminary certification test plan. Tasking will address all

items in **Appendix A**. Unless otherwise agreed by the SPM and the AIT Manager, the SPM shall be the only activity to task PY efforts.

3.2.6.2.ALTERATION ACCOMPLISHMENT TASKING

Tasking for accomplishment of alterations will authorize procurement of required long lead-time and incidental material and accomplishment of the applicable alteration. Tasking will address all items in **Appendix A**.

3.2.7. SHIP ALTERATION DESIGN DEVELOPMENT

In accordance with NAVSEA SL720-AA-MAN-010 (Series), the class PY(s) are responsible for the total integrated design of assigned ships and are normally tasked to develop the detailed design of alterations to these ships and associated ship systems. In those instances where the detailed design is not developed by the PY, the SHIPALT design development shall be coordinated with the PY. The final design products, including drawings, shall be approved by the PY, at a minimum **(see 3.2.7.4)**. Drawing approval and SPM authorization shall be obtained prior to the initiation of work.

3.2.7.1. SHIP ALTERATION DESIGN REQUIREMENTS DEVELOPMENT

The basic alteration design criteria for a given SHIPALT, including prerequisite/concurrent SHIPALTs, ORDALTs, MACHALTs, etc. shall address the following items as applicable:

- Magnetic material restrictions
- Electromagnetic Compatibility (EMC) requirements
- Electromagnetic Interference (EMI) requirements
- Firing zone cut outs rotating element zone requirements
- Radiation Hazard (RADHAZ) requirements
- Noise, Shock and Vibration (NSV) requirements
- Electrostatic Discharge (ESD) requirements
- Electromagnetic Pulse (EMP) requirements
- Hazardous/Toxic Materials (HAZMAT)
- Radar Cross Section (RCS) requirements
- Signal Security (SIGSEC) and TEMPEST requirements
- SUBSAFE program requirements
- Impact on interfaced systems
- Battle group interoperability
- Risk/Safety Analysis
- DSS-SOC program requirements

Alteration design shall address impacts on ship services (e.g. electrical power and lighting, heating, ventilation, air conditioning, cooling water and cooling air), deck strength, ship mass properties, stability (weight and moment), storage capacity and other critical ship systems such as the Collective Protection System (CPS) and Countermeasures Wash Down System (CMWDS). The AIT shall interface with the PY to obtain associated ship system impacts.

3.2.7.2. SHIP ALTERATION INSTALLATION DRAWINGS

Individual Ship Alteration Installation Drawings (SIDs) shall be prepared in accordance with NAVSEA Technical Specification 9090-600 (Series) for each hull authorized in the tasking documentation, unless development of class-applicable SIDs has been authorized by the SPM. The alteration design that is represented in these drawings will be based on criteria presented in the approved SAR for the SHIPALT, design guidance provided by the PY, actual configuration determined during a design shipcheck of the applicable ship, NAVSEA 0902-018-2010 (Series), NAVSEA S9AAO-AB-GOS-010/GSO (Series) or other general specification as applicable.

3.2.7.2.1. SHIP ALTERATION DESIGN SHIPCHECK

Whether the PY or an AIT develops the design, a design shipcheck will be conducted on each hull when the AIT Manager and SPM determine the technical risk warrants the cost. Shipchecks shall be conducted at the convenience of the ship being checked, following the policies of the TYCOM, on a not-to-interfere basis. For those TYCOMs that hold AIT Scheduling Conferences, shipchecks shall be scheduled at these conferences. Ship availability dates will be coordinated between the activity developing the alteration design and the respective TYCOM or TYCOM designee. Whether a shipcheck is to be accomplished inside or outside of a CNO scheduled availability, the AIT On-site Installation Coordinator/AIT Leader shall provide visit clearance information to the designated NSA and ship a minimum of five (5) working days prior to arrival or as established by TYCOM policy. Prior to sending the clearance message, the AIT On-site Installation Coordinator/AIT Leader will verify with the NSA that ship and/or industrial activity operations will permit completion of ship-check requirements during the intended ship-check period. If not, it should be re-scheduled. When an AIT is performing the shipcheck, participation by the PY is required, as specified in the tasking documentation. The AIT Manager, in coordination with the SPM's designated design agent and/or the PY, shall issue a shipcheck report to the appropriate offices, including the Ship and NSA if assigned, within ten (10) working days after the design shipcheck is completed. The shipcheck report shall include redline mark-ups, when applicable, to reflect the ship's unique configuration to the PY, allow coordination and to identify interference/interaction with other SHIPALT designs under development by the PY. Unless otherwise agreed to by the SPM and the AIT Manager, the SPM shall be the only activity to task PY efforts**. (See Appendix E.)**

3.2.7.3. SUPPORT DOCUMENTATION

The AIT On-site Installation Coordinator/AIT Leader is responsible for ensuring delivery to the ship and NSA of all documentation and ILS elements required by the FMP Manual (NAVSEA SL720-AA-MAN-010/020 (Series), Sections 4, 7, 8 and 9) at the time of alteration accomplishment. ILS deliveries to the ship shall be signed for by the Commanding Officer (CO), Executive Officer (XO), Supply Officer, or 3M Coordinator. This includes, as applicable, supply support and Allowance Parts List (APL) updates, redline mark-ups of Ship Selected Records (SSRs), Selected Record Drawings (SRDs), Liaison Action Requests (LARs), Ship's Information Books (SIBs), Ship's Systems Manuals (SSMs), Training Aid Books (TABs), Combat System Technical Operating Manual (CSTOM), Combat System Operation and Sequencing System (CSOSS), Engineering Operational Sequencing System (EOSS), Engineering Operational

Procedure (EOP), etc.), and all required ILS/3M/SCLSIS documentation (technical manuals, Planned Maintenance System (PMS), 4790/2K, proof of inclusion in CDMD-OA (i.e. a printout of the "Process Load Results" showing that the work file has been submitted and a completion report indicating affected RINs, etc.), whether developed by the AIT or not. Prior to the first installation, the LCM shall provide the SPM with a copy of ILS Certification Form for approval, in accordance with NAVSEA SL720-AA-MAN-010 (Series), Section 8. The activity tasking the AIT (e.g. LCM/Participating Manager (PARM)/ISEA of SPM) shall provide the AIT a copy of the completed ILS Certification Form. Until such time that SHIPALT ILS Certification Forms can be obtained electronically (i.e. NDE ILS Module), the AIT On-site Installation Coordinator/AIT Leader will provide the NSA/RMMCO with copies/advance copies of applicable SHIPALT ILS Certification Forms in support of planned installations.

a. **Configuration and Logistic Support Updates**. The LCM is responsible for ensuring that all equipment has proper logistics support completed and available for delivery to the ship at the time of the first alteration installation. This includes interim supply support (both initial outfitting and wholesale stock) until the Material Support Date (MSD) has been reached. As part of this responsibility, the LCM will task the AIT Manager to provide accurate and timely configuration and logistics change information to the ship's CDM (generally the PY) in the form of Configuration Overhaul Planning (COP) data by A-2. Program Support Data (PSD) will be provided to the Supply System prior to or concurrent with, alteration accomplishment.

(1) COP data is the preferred method of providing a ship with supply support. Out of sequence ASI tapes shall not be used.

(2) All other alteration logistics support documentation, including proof of inclusion in CDMD-OA (i.e. a printout of the "Process Load Results" showing that the work file has been submitted) and a completion report indicating affected RINs must be supplied to the ship by the AIT at the time of alteration accomplishment. Electronic transfer of configuration data is the preferred method of transmittal.

b. **Ship Selected Record Documentation**. The AIT Manager will request a list of SSRs that are impacted by the SHIPALT from the PY prior to the initiation of alteration accomplishment. The AIT Manager is responsible for providing the ship and the PY with redlined copies of the impacted SSR as part of the Alteration Completion Report **(Appendix C)**. Unless otherwise agreed to by the SPM and the AIT Manager, the SPM shall be the only activity to task PY efforts. The AIT Manager shall provide funding necessary for the PY update of SSR documentation as directed by the SPM and funded by the PARM, Program Executive Office (PEO) or SYSCOM. The actual update of SSR documentation will be accomplished by the PY as part of the normal SSR update process associated with scheduled ship availabilities. SSR updates for AIT installations accomplished outside of scheduled ship availabilities may be accomplished on an annual basis but shall be accomplished before expiration of AIT funding. If possible, these updates should be aligned with the normal SSR update process associated with the next scheduled availability of the respective ship. As installed drawings must be received by the PY in order for SSR updates to be accomplished.

c. **ILS/3M/SCLSIS Documentation**. The various elements of ILS documentation are discussed in NAVSEA SL720-AA-MAN-010/020 (Series). The elements of 3M documentation are discussed in OPNAVINST 4790.4 (Series). Configuration and logistics management requirements associated with SCLSIS are contained in NAVSEA Technical Specification 9090-700 (Series).

d. **Certification Test Documentation**. When certification testing is required, and the AIT is tasked to perform certification testing, the AIT will issue the certification test results to the Certifying Authority within thirty (30) days of test completion.

3.2.7.4. SHIP ALTERATION DESIGN APPROVAL

AIT prepared design products shall be approved by the applicable PY, and SPM authorization granted for the SHIPALT installation prior to the initiation of work on any U.S. Navy ship. Unless otherwise agreed, the AIT Sponsor, SPM, Participating Manager (PARM), Program Executive Officer (PEO) or SYSCOM will provide funding for the PY to review AITdeveloped design products, including drawings. Unless otherwise agreed to by the SPM and the AIT Manager, the SPM shall be the only activity to task PY efforts. Once approved, only the PY, SPM or the SPM's designated representative can approve deviations and waivers to the design. **Note**: NSA Chief Engineers designated in NAVSEAINST 5400.95 (Series) may approve minor deviations and waivers to the design. AITs without PY approved drawings shall not attempt to accomplish alterations to ships without documented approval from the SPM. AITs without PY approved designs or documented approval from the SPM shall be denied access to ships.

a. **SHIPALT Design Impacting the Propulsion Plant on Nuclear Powered Ships**. Alteration designs that impact the portions of propulsion plant or designated spaces of nuclear powered ships that are not under the cognizance of the Deputy Commander for Nuclear Propulsion (NAVSEA 08) shall be approved by the SPM as required by NAVSEAINST C9210.4. All design products that indicate such an impact, whether prepared by the PY or the AIT, shall be approved by the SPM as stated above.

b. **Ship Alteration Drawing Approval**. Unless otherwise specified in the tasking documentation, AIT-developed design drawings for the first planned accomplishment of an alteration on a ship class shall be reviewed and approved by the applicable PY. When tasking indicates that the drawing review will be coordinated by the SPM, the PY, the Deputy Commander for Integrated Warfare Systems (SEA 05), NAVSEA Chief Engineer (CHENG) and the system/equipment LCM will participate in the review. The drawings will be reviewed for technical accuracy, design adequacy, compliance with applicable design technical requirements (e.g. SIGSEC, TEMPEST, EMC, EMI, RADHAZ, NSV, ESD, EMP, RCS, SUBSAFE) and applicable technical specifications (including new construction and General Overhaul), format (in accordance with NAVSEA Technical Specification 9090-600 (Series)), and clarity.

AIT-developed drawings will be submitted to the PY with a transmittal letter (copy to the SPM) that includes at least the following: scheduled installation date for the specific hull, two points of contact, with corresponding phone numbers and e-mail addresses, and an explanation of that submittal (i.e., initial review, comment incorporation validation, etc.)

Except for very large or complex alterations, **the review cycle will be sixty (60) working days or less** following PY receipt of drawings and appropriate funding. If the review cannot be completed in sixty (60) working days, the SPM will coordinate the completion date with the AIT Manager. The requirement to review alteration designs for follow-on ships will be at the discretion of the applicable PY if not otherwise required by the tasking documentation. A PY review of follow-on ship alteration designs will usually be required due to significant design differences among ship hulls. The interpretation of the degree of change required to prompt additional design review will be defined by the SPM unless specifically delegated to the PY. The PY shall, subsequent to the review of the first ship design, advise the AIT Manager if a review of follow-on ship design is considered necessary, and under what circumstances. AITs without PY-approved drawings will be denied access to ships unless the TYCOM certifies that a waiver has been granted by the SPM.

1) Drawing Reviews for SHIPALTs Impacting Electromagnetic Compatibility. Alterations to a ship's topside configuration can impact the electromagnetic wave propagation as well as the reception of signals by the ship's electromagnetic sensors (i.e. radar, navigation equipment, magnetic field detectors, communications and other receivers). Additionally, below deck electrical and electronic equipment may emit or react to harmful electromagnetic energy. In accordance with NAVSEAINST 2450.2 (Series), the NAVSEA Electromagnetic Effects Office (NAVSEA 53H3) shall participate in drawing approval reviews for alterations that effect ship topside configurations or which add electrical or electronic equipment. These reviews are held to prevent AIT installations from creating topside interferences.

2) Drawing Reviews for SHIPALTs Impacting Command and Control Spaces. Alterations to a ship's command and control spaces can have a significant impact on physical arrangements and critical system integration characteristics of the information and data control capability realized through software, networks, etc. The appropriate Systems Command Combat System Design and Engineering Group shall participate in drawing approval reviews for alterations that effect ship Command and Control spaces.

c. **Electronic Equipment Test Procedure/Record Approvals**. Equipment-specific test procedures and test record forms for electronic equipment may be required to be approved for work on critical systems or for high visibility programs. The approving activity in these cases shall be the system/equipment LCM (usually the AIT Manager). When an alteration impacts interfaces with other systems or equipment via various modes (fiber or copper Local Area Networks (LANs), switchboards, etc.), the ISEAs for each impacted system or equipment shall participate in the test procedure approval process.

d. **Technical Liaison Services**. The LAR is the implementation tool for the formal technical liaison system between the AIT and the applicable PY. The system facilitates resolution of questions and change requests regarding drawings and technical documentation, and the transmittal of requests for deviations and waivers. All deviations from drawings and invoked specifications (e.g. change in weld joint design, material substitution, location change beyond

tolerances provided on drawing) require technical approval. For each required deviation from an approved design, the AIT shall prepare a LAR that documents the request for the design change in accordance with NAVSEA Technical Specification 9090-100 (Series). All LARs will be forwarded to the PY for resolution. Copies of all LARs and PY responses will be attached to redline drawing package and be submitted to the PY within 15 days of installation completion. All LARs that impact design shall be incorporated in SIDs by the AIT and approved by the PY as part of the final drawing update. The submittal and review process shall take no longer than 60 days. The LAR may also be used to document PY review and approval of AIT-prepared drawings, as tasked by the SPM.

3.3. Temporary Alteration (TEMPALT) PRE-INSTALLATION REQUIREMENTS. (SURFACE SHIPS AND SERVICE CRAFT)

3.3.1. INITIAL DETERMINATION OF ALTERATION ACCOMPLISHMENT BY ALTERATION INSTALLATION TEAM

TEMPALT guidance is provided in CINCLANTFLT/CINCPACFLT 4720.3 (Series). With the exception of major TEMPALTs that require significant industrial support, accomplishment of TEMPALTs is usually considered to be within the capability of AITs. In general, an AIT should be used when the technical and/or specific nature of the work requires specialized skills, a substantial government financial savings can be obtained, flexibility of an AIT is required due to short timeframe installations or substantial "lessons learned" can be obtained from re-using the same team.

3.3.2. TEMPORARY ALTERATION DEVELOPMENT

TEMPALTs do not require the development of a formal document like the SAR, which is required for SHIPALTs. Instead, a tentative Plan of Actions and Milestones (POA&M) is normally developed which outlines requirements for design shipcheck, design development, drawing approval, assembly fabrication, alteration accomplishment and removal. The AIT On-site Installation Coordinator/AIT Leader shall coordinate the POA&M with the TYCOM, designated point of contact (RMMCO, NSA, CHET) and SPM as soon as the plan is developed and anytime it is revised. Applicable ILS requirements should be identified and documented by the alteration sponsor using the ILS Certification Form provided in Appendix F of the FMP Manual. TEMPALTs that affect Battle Group interoperability shall be coordinated with the Commander U.S. Fleet Forces Command (CFFC) and AMP-FCO prior to installation scheduling.

3.3.3. PLANNING

After the tentative Plan of Action & Milestone (POA&M) is issued, detailed planning must be coordinated by the AIT with the TYCOM to establish which ship is to receive the TEMPALT (if not previously identified in the tasking documentation) and to determine dates that the ship will be available for design shipcheck and alteration accomplishment. If the dates are coincident with a scheduled CNO availability, AIT coordination with the designated NSA and the CNO availability planning activity is also required. **Section 3.4** includes specific requirements. In all

cases, the AIT must provide the ship and the NSA with security clearance data in order to be granted access to the ship.

3.3.4. BUDGETING

Budgeting and funding for non-submarine TEMPALT accomplishment is usually part of the applicable project or program for Research, Development, Test & Evaluation (RDT&E) alterations, the CFFC, TYCOM or CNO Resource Sponsor for mission support alterations. Budgeting for TEMPALTs shall include sufficient funding to remove the alteration and restore the ship to its original configuration. TEMPALTs are not funded as part of the FMP.

3.3.5. SCHEDULING

Scheduling for non-submarine TEMPALTs is performed in the same manner as for SHIPALTs (**see paragraph 3.2.5**). Development of a mini-COSAL is not required for TEMPALTs that are planned to be removed within ninety (90) days of accomplishment.

3.3.6. TASKING

Tasking of AITs for accomplishment of non-submarine TEMPALTs generally includes the total effort: design development, alteration accomplishment, alteration removal, and ship restoration. Tasking will address all items in **Appendix A.**

3.3.7. TEMPORARY ALTERATION DESIGN DEVELOPMENT

Alteration design development for non-submarine TEMPALTs is the same as for SHIPALTs (**see paragraph 3.2.7**).

3.3.7.1. TECHNICAL DATA PACKAGE

For all TEMPALTs, regardless of intended duration, a Technical Data Package (TDP) shall be prepared which includes a description of the alteration, ship impact data, stress calculations, weight and moment calculations, and alteration drawings; and submitted to the SPM for approval.

3.3.7.2. DESIGN DRAWINGS

The form and format of design drawings shall be as directed by the SPM.

3.3.7.3. DESIGN APPROVAL

TEMPALT designs, including design drawings, will be reviewed for safety and technical adequacy and impact on ship stability, operational characteristics, damage control, ship structure, ship services, ship interfaces and habitability. TEMPALTs shall be reviewed and approved as directed by the SPM. The CFFC will also approve TEMPALTs affecting Battle Group (BG) interoperability. AITs without documented SPM approval of alteration designs should not attempt alteration accomplishment and will be denied access to ships.

3.3.7.4. SUPPORT DOCUMENTATION

TEMPALTs shall be supported with all requisite ILS products to the extent necessary to support operation and maintenance of the equipment for the duration of the alteration in accordance with Section 8 of the FMP Manual and as determined by the SPM. ILS requirements shall be documented on the ILS Certification Form, as required by Section 8 of the FMP Manual, and provided to the SPM No Later Than (NLT) 4 months prior to installation for review and approval. The applicable submarine TEMPALT ILS requirements are in accordance with NAVSEAINST 4720.14 (Series) and NAVSEA S9070-AA-MME-010/SSN/SSBN (Series). **Note**: **Section 1.4** exempts submarines from the requirements of **Section 3.3** TEMPALT Pre-installation Requirements (Surface Ships and Service Craft) of this technical specification.

3.4. INSTALLATION PREPARATION REQUIREMENTS

3.4.1. INSTALLATION PLANNING AND PREPARATION

The AIT shall not initiate preparation for alteration accomplishment until specifically tasked and funded by an AIT Manager. The AIT Manager will coordinate with and obtain approval of the SPM, LCM (if not the AIT Manager), and applicable TYCOM(s) prior to tasking an AIT for accomplishment of a SHIPALT, Equipment ALT or TEMPALT.

3.4.2. PRE-INSTALLATION COORDINATION REQUIREMENTS

All alterations that are scheduled to be accomplished by an AIT during a scheduled CNO availability will be coordinated with and approved in advance by the SPM and the NSA that is designated to supervise the CNO availability. These alterations must be included in the NAVSEA Availability Advance Planning Letter and subsequent Availability Authorization Letter for that CNO availability. Liaison between the AIT Manager, CNO availability planning activity, designated RMMCO and NSA shall be initiated NLT 180 days prior to the start of the scheduled installation. Specifically, the AIT will notify the NSA who will then provide the Master Ship Repair (MSR)/Agreement for Boat Repair (ABR), when applicable, all significant installation preparation requirements including material, team formulation and AIT production schedule to allow coordination and integration of the alteration. The RMMCO AIT Check-In/Check-Out application https://rmmco.navy.mil/ provides the AIT On-site Installation Coordinator/AIT Leader with a means to initiate the check-in procedures required for the installation of an alteration aboard ship. This application should be used by the AIT in order to ensure rapid, problem-free completion of the check-in gatekeeping requirement.

a. **Notification of significant installation preparation requirements shall be provided no later than A-135 and include**:

(1) AIT activity and alteration(s) to be accomplished.

(2) Type of MSR/ABR industrial support services (welding, rigging, hazardous material handling/disposal, etc.) that will be required (see SUPSHIP SWT 980-01, “Alteration Installation Team Support Service, Provide”). A sample checklist is provided as **Appendix B**.

(3) Quantity (mandays, man-hours, number of lifts, etc.) of each service that will be required.

(4) Listing of systems, locations and proposed sequence of events in which the AIT work will be accomplished, including any lay-down area requirements.

(5) Verification of compliance with insurance and Quality System requirements.

(6) Points of Contact for the AIT.

(7) Alteration installation production and testing schedule (including ship work approximate start date). This schedule should be provided via electronic means whenever possible to facilitate its timely integration into the overall CNO availability schedule and rapid NSA review.

(8) Expected duration of the AIT ship work (in calendar days).

(9) Installation production test schedules and Bill of Materials (desired in electronic format). These schedules will specify the expected start dates and duration of all AIT shipboard work and testing, along with time frames that could significantly impact ship's operations.

b. **Planned Accomplishment Outside of a Chief of Naval Operations Scheduled Availability**. When the installation is not to be accomplished during a CNO-scheduled availability, the AIT shall provide scheduling information to the TYCOM, RMMCO, and NSA. The AIT will provide **paragraph 3.4.2** information to the NSA, 180 days but not later than thirty (30) days before the start of the availability, or as directed by applicable Joint Fleet instructions/Joint Fleet Maintenance Manual (JFMM).

3.4.3. SPECIAL REQUIREMENTS

The AIT Manager is responsible for providing advance notification of alteration accomplishment requirements/impacts and making arrangements (including funding) for any required support services not being provided by the AIT. These arrangements shall be made with the appropriate activity, including NSA, prior to the arrival of the AIT for accomplishment of the alteration, 180 days but not later than 135 days in advance. Possible requirements/impacts will be identified at initial scheduling of the alteration for accomplishment. Identified requirements for individual ships will be discussed in detail at the ship design shipcheck out-brief and will be verified at the alteration accomplishment in-brief. Notification of these requirements may include, but are not limited to:

a. Material delivery and stowage requirements (number of boxes/pallets, special handling [e.g. Electrostatic Discharge (ESD), SUBSAFE, magnetic protection], special stowage, etc.).

b. Crane service requirements (capacity, on-load, offload, high reach, etc.).

c. Rigger service requirements.

d. Impacted areas and spaces, including required access to secure spaces.

e. Inspection requirements (gas-free, Signal Security (SIGSEC), TEMPEST, weight tests, etc.).

f. Scope of Pre-installed Check-out (PICO) requirements for ship's force validation of existing equipment/system operating conditions prior to accomplishment of the alteration (specific equipment, testing, etc.).

g. Scope of hot work requirements (cutting, welding, brazing, etc.).

h. Fire watches (number of welders working, number and length of shifts, etc.).

i. Access cut requirements.

j. Work control review of specific equipment, systems, circuits, components, piping or valves which will require isolation, deactivation or removal to accomplish planned work, and any associated tag-out processing requirements.

k. Planned handling, use and disposal of identified hazardous materials (e.g. fluorocarbons, paint, welding rods, partially used material, hazardous waste).

l. Specific ventilation/environmental requirements (e.g. special air flow/cooling/heating requirements, protective shelters to be installed).

m. Ship systems service requirements (e.g. power, low or high-pressure air) that may be required to support the accomplishment of the alteration or calibration or certification of the equipment.

n. Weapons/ordinance handling requirements.

o. Post-installation testing support requirements.

p. System certification (SIGSEC, TEMPEST, Electromagnetic Compatibility (EMC)/Electromagnetic Interference (EMI)/Radiation Hazard (RADHAZ), SUBSAFE, etc.) that could be required/affected by accomplishment of the alteration.

q. Non-Destructive Testing (NDT) requirements.

r. Man-aloft requirements.

s. Diver and cofferdam requirements.

t. NSA turned-in equipment/material disposal requirements.

u. Administration support requirements (dedicated telephone service, desk space, etc.).

v. Scaffolding and staging requirements.

w. Entry of OPNAV form 4790/2K for ALT being accomplished and for any services required from the assigned NSA.

x. Tagout/Lockout

y. Applicable environmental permit.

z. Site-specific EPA HW Generator ID Number.

aa. Applicable environmental reporting as per NAVSEA Standard Item 009-02.

Whether these requirements are to be provided by the AIT or arrangements are to be made with the ship, NSA or another activity for meeting these requirements, they shall remain the responsibility of the AIT. The AIT Manager will provide the designated activity with the funding for any required support services no later than 30 days prior to contract award or 90 days before the start of availabilities to be accomplished at public shipyards.

3.4.3.1. NAVAL SUPERVISION ACTIVITY NOTIFICATION OF SPECIAL REQUIREMENTS

When alterations are planned for accomplishment during a CNO scheduled availability, the applicable NSA and availability planning activity, normally the Ship Availability Planning and Engineering Center (SHAPEC), shall be notified of any special requirements needed to accomplish the alteration, as soon as the requirements are identified. Funding for these special requirements shall also be identified. Excepting emergent requirements, the notification shall be provided NLT 180 days prior to the start of the availability in order to support the contract solicitation process. Funding for support services during a CNO availability shall be provided to the NSA ninety (90) days prior to the start of the availability. To facilitate this process, **Appendix B** provides a recommended format for the AIT On-site Installation Coordinator/AIT Leader to provide this information to the NSA.

3.4.4. DESIGN SHIPCHECK

In preparation for the design shipcheck **(see Appendix E)**, the AIT Manager shall establish contact with the applicable NSA or TYCOM to determine acceptable design shipcheck dates. For TYCOMs that hold AIT Scheduling Conferences, the AIT Manager should present the proposed shipcheck schedule at the next AIT Scheduling Conference to allow notification of applicable ships and NSA of the intent to accomplish the alteration.

3.4.4.1. SECURITY CLEARANCES

Where access is required to secure areas or equipment, the individual design shipcheck team members requiring such access are required to have the proper level of clearance for access without escort. Whether a shipcheck is to be accomplished in or out of a scheduled CNO availability, the AIT On-site Installation Coordinator/AIT Leader shall provide visit clearance information to the ship, TYCOM, NSA and other appropriate Naval activities a minimum of five (5) working days prior to the scheduled ship check date or as established by TYCOM policy.

3.4.4.2. DESIGN SHIPCHECK IN-BRIEF

A design shipcheck in-brief shall be conducted upon arrival on board for appropriate members of ship's force, TYCOM, NSA personnel and, if applicable, the PY On-Site Representative. The briefing will explain the purpose and extent of the planned alteration(s) and provide an outline of data to be gathered, spaces requiring access, and any other relevant information.

3.4.4.3. DESIGN SHIPCHECK OUT-BRIEF

After completion of the design shipcheck, the team shall conduct a design shipcheck out-brief for appropriate members of ship's force, TYCOM, NSA personnel and, if applicable, the PY On-Site Representative. This briefing will discuss the extent of work required to accomplish the alteration as well as any ship provided support requirements. This will include requirements for PICOs, weapons handling, and other relevant information.

3.4.5. INCIDENTAL MATERIAL

The AIT shall be responsible for supplying all material that is not HCPM, including incidental/expendable (shop stores) material (e.g. tape, solder, welding rods, paint, fasteners, deck covering, insulation), required to accomplish the alteration.

3.4.6. MATERIAL REQUIREMENTS

All material required being installed/provided, as part of an alteration, should be assembled by the AIT for each tasked hull. This material includes all material (HCPM and AIT-procured) required by the installation drawings and all required logistic support items (special tools/test equipment, interim spares, APLs [or Preliminary APLs where no APL is yet available], maintenance plans, technical manuals, test procedures, PMS, Maintenance Assistance Modules (MAMs), Operating Space Item (OSI), Material Safety Data Sheets (MSDS), etc.) required to be turned over to the ship.

a. When ordering AIT-procured material (other than shop stores-type material) from the Federal Supply System, the AIT should first check with the material item manager to determine whether or not the supply activity has pre-staged or reserved material for the applicable alteration.

b. For ease of accomplishment and reduced on-board effort, prefabricated material (foundations, cable/harness assemblies, etc.) should be utilized to the maximum extent possible.

c. All SUBSAFE material shall be accompanied with a full set of certification documentation to expedite alteration accomplishment.

d. All SUBSAFE or Level I material, which is temporarily removed as part of a submarine ALT, shall be controlled, stored and protected while removed in accordance with NAVSEA 0924-062-0010 (Series) in order to maintain the SUBSAFE or Level I certification of the material.

e. All DSS-SOC material shall be controlled and protected in accordance with NAVSEA SS800-AG-MAN -010/P-9290 (Series) System Certification Procedures and Criteria Manual for Deep Submergence Systems to maintain certification of the material.

f. All DSS-SOC material shall be accompanied with a full set of certification documentation to expedite alteration accomplishment.

3.4.7. AIT REQUIREMENTS

The make-up and management of the AIT is the responsibility of the AIT Manager tasked to accomplish the alteration.

3.4.7.1. AIT FORMULATION

The make-up of the AIT shall be as determined by the AIT Manager based on the skill level requirements of the work to be accomplished and the number of shifts the AIT is planned to work. Each AIT will be outfitted with all required hand tools, Personal Protective Equipment (PPE), General Purpose Electronic Test Equipment (GPETE), special purpose electronic test equipment, Installation and Check-Out (INCO) spares, special alignment equipment, etc., required to accomplish the alteration. For those skills that require specific training, qualification and/or certification (welding, electrical connector assembly, SUBSAFE, SIGSEC, TEMPEST, PCMS installation, Level 1, etc.), AIT members performing these functions shall be fully qualified/certified.

3.4.7.2. ALTERATION INSTALLATION TEAM ON-SITE INSTALLATION COORDINATOR

Each AIT shall have an AIT On-site Installation Coordinator/AIT Leader who is a government or military employee designated by, and acting with the authority of, the AIT Manager. The AIT On-site Installation Coordinator/AIT Leader will have general responsibility for the conduct of the installation. He/she will be the point-of-contact with the ship, AIT Manager and the NSA. AIT On-site Installation Coordinators/AIT Leader shall be knowledgeable of and responsible for AIT adherence to all invoked requirements including safety, quality plan, technical instructions, and, when applicable as identified in the MOA, the SUPSHIP Operations Manual (SOM), Appendix 4-E or any NSA MOA in effect with the NSA and AIT Manager. AITs that do not have an assigned AIT On-site Installation Coordinator (or documented approval from the SPM that an AIT On-site Installation Coordinator is not required) shall not attempt to accomplish alterations to ships and will be denied access to ships. Additionally, if multiple-shift work is to be accomplished, the AIT On-site Installation Coordinator(s) for each shift shall be identified.

3.4.7.3. PARTICIPATION OF OTHER ACTIVITIES

Any participation of a system/equipment ISEA or other activity which is required for accomplishment of required conjunctive or associated ORDALTs, MACHALTs, FCs, etc., or for testing or certification of equipment or systems associated with the accomplishment of the tasked alteration(s) shall be coordinated with the AIT.

3.4.7.4. TRANSPORTATION AND BILLETING

Transport of AIT personnel, tools, material and support equipment to and from the installation site and all billet arrangements shall be the responsibility of the AIT.

3.4.7.5. ALTERATION INSTALLATION TEAM READINESS TO START MESSAGE

At least five (5) working days prior to the scheduled start of the AIT installation, the AIT On-site Installation Coordinator/AIT Leader will release a "readiness to start message" following the format provided in **Appendix C**. The AIT On-site Installation Coordinator/AIT Leader shall address each area identified in the Readiness to Start Message. The message will reference all pertinent scheduling information and coordination, the industrial level skills required, design readiness, ship requirements, affects of the alteration, ships spaces affected, and any other information considered pertinent. Security clearance data required in **paragraph 3.4.7.6** below might be incorporated, if desired.

3.4.7.6. SECURITY CLEARANCES

Where access is required to secure areas or equipment, the individual AIT members requiring such access shall have the proper level of clearance for access without escort. A minimum of five (5) working days prior to arrival or as established by TYCOM policy, the AIT On-site Installation Coordinator/AIT Leader should provide clearance information for AIT members to the ship, TYCOM, NSA, and any other appropriate Naval activities. In situations requiring a quick response, security clearance information will be provided as far in advance as possible and by the fastest means practicable. For alterations being accomplished during CNO availabilities, the AIT shall comply with security requirements of the industrial or naval activity in addition to those required for access to the ship.

3.4.7.7. PERSONAL PROTECTION EQUIPMENT (PPE)

Each AIT member is responsible for possessing and properly utilizing Personal Protective Equipment (PPE) while on board a ship and while transiting an industrial area to or from a ship. For alterations being accomplished at an industrial activity, PPE shall meet the requirements of that facility. The AIT On-site Installation-Coordinator shall be responsible for ensuring compliance with this requirement and needed PPE and HAZCOM training by all AIT members. AIT members who do not possess or utilize proper PPE while on board ship or while transiting an industrial area will be required to leave the facility/ship.

a. Footwear. Shoes or boots to be worn on ships should have hard soles with leather or equivalent tops. Water and oil resistant footwear with non-slip soles is recommended. Steel-

toed shoes or boots are required when working on ships on which industrial work is being performed or when transiting an industrial area to or from the ship.

b. Head protection. Hardhats meeting OSHA requirements are required to be worn by each individual transiting an industrial area (shipyard, etc.) or on any ship on which industrial work is being performed. The individual's name and activity should be printed on the hardhat.

c. Hearing protection. Hearing protection (ear plugs, etc.) meeting OSHA requirements is required to be used by each individual entering a high noise area. Hearing protection is required to be carried on the person of each individual transiting through an industrial area (shipyard, etc.) or on any ship that industrial work is being performed.

d. Eye protection. Eye protection (shatter-proof glasses, goggles, etc.) meeting OSHA requirements is required to be used by each individual entering an industrial area (shipyard, etc.) or on any ship that industrial work is being performed.

e. Emergency lighting. Each AIT member shall carry an operable flashlight or chemical light stick while on any ship that industrial work is being performed.

f. HAZCOM training. Each AIT member shall be given HAZCOM training prior to the start of work.

3.5. INSTALLATION REQUIREMENTS

The alteration/installation is to be accomplished at the convenience of the ship in accordance with the **AIT Task Data (Appendix A)** and **Alteration Completion Report (Appendix C)** and, to the maximum extent possible, on a not-to-interfere basis. Ship's Force will monitor the quality of AIT performance in accordance with CINCLANTFLT/CINCPACFLTINST 4790.3 (Series). All work practices shall conform to the latest version of NAVSEA Standard Items. The AIT shall provide and maintain a Quality System in accordance with the requirements of **paragraph 4** below and **Appendix D**. The AIT On-site Installation Coordinator (**paragraph 3.4.7.2 above**) will ensure that the AIT is following its approved Quality Assurance Plan, applicable safety and environmental compliance requirements, and technical instructions. The NSA has Quality Assurance sampling and monitoring responsibilities and will assist ship's force in monitoring the quality of AIT performance. The AIT On-site Installation Coordinator/AIT Leader shall fully coordinate all AIT actions with the NSA. Ship's Force has ultimate responsibility and authority for all matters related to the safety and security of the ship and has the authority to inspect or stop work at any time. If ships force stop work order is expected to last in excess of 1 hour, the AIT On-site Installation Coordinator must coordinate with the NSA, ship's force and AIT Manager if practical to determine a plan of action and resolution of the stop work order. The AIT On-site Installation Coordinator/AIT Leader is responsible for keeping Ship's Force apprised of the status of their work aboard the ship and of any impact the work may have on ship's operations or safety. The general procedure for AIT accomplishment of an alteration is as follows:

3.5.1. ALTERATION INSTALLATION TEAM CHECK-IN AND PRE-BRIEF

The AIT On-site Installation Coordinator/AIT Leader or designated agent shall check-in with the NSA and/or RMMCO/and pre-brief the installation prior to reporting to the ship. During this check-in, RMMCO will ensure that the alteration has been approved for installation and that the schedule accurately reflects the AIT's plan. The TYCOM, Squadron, NSA, RMMCO, and AIT Installation Coordinators shall be invited to attend the pre-brief. The pre-brief shall provide a detailed installation plan, review ILS documentation and note ILS deficiencies, identify special support requirements, safety and environmental compliance and review System Operation Verification Test (SOVT) requirements (as applicable). AITs not meeting any of the above requirements will not be allowed to proceed to the ship until satisfactory resolution has been accomplished.

3.5.2. IN-BRIEF

An in-brief with the TYCOM, Squadron, NSA, RMMCO, AIT Installation-Coordinators and ship shall be scheduled and coordinated by the AIT On-site Installation Coordinator/AIT Leaders. The in-brief shall be conducted upon arrival on board the ship and prior to the initiation of alteration accomplishment. The in-brief shall be conducted as outlined in **Appendix F**. Whenever possible, for alterations which impact several systems or spaces or will require more than a week to complete, or will impact systems identified in **paragraph 3.5.6**, the in-brief shall be held for key personnel prior to the start of alteration accomplishment, and coordinated by the TYCOM, NSA or Squadron, as appropriate. Ship's personnel present should include, as applicable:

Commanding Officer (CO)	Executive Officer (XO)
Operations Officer	Combat Systems Maintenance Officer
Systems Test Officer (STO)	Combat Systems Officer (CSO)
Combat Decision Center Officer	Communications Officer
Intelligence Officer	Supply Officer
Maintenance Manager/3-M Officer	Electrical Officer
Engineering Officer	Weapons Officer
Ship Material Maintenance Officer (SMMO)	
Associated technical and operational personnel, (e.g. ET, FC, IT, OS, IC, EM ratings, etc., as applicable)	

If the alteration is to be accomplished during a scheduled CNO availability, the NSA, the PY On-Site Representatives (Program Representative and CDM) and the lead ship availability manager from the industrial activity will also be invited to attend. The AIT shall record the attendance and minutes of the in-brief and distribute this information to all of the attendees. AITs that have not held an in-brief shall not attempt to accomplish alteration and may be denied access to ship.

3.5.3. SHIPWORK OUTSIDE OF A CHIEF OF NAVAL OPERATIONS SCHEDULED AVAILABILITY

If the alteration is to be accomplished outside of a scheduled ship CNO availability, the AIT On-Site Installation Coordinators shall check in with the TYCOM designated point of contact (usually the RMMCO) and then report to the previously established ship's point-of-contact: the applicable Department Head, Division Officer or the Commanding Officer prior to the arrival of the AIT and the installation material. Work shall be conducted in accordance with the schedule presented at the in-brief. It will be the responsibility of the AIT to perform required shipwork around restrictions that may be imposed by the ship due to emergent ship's evolutions. Any changes to the work schedule provided to the ship at the in-brief shall be reported to the ship, and TYCOM designated point of contact as soon as changes are identified. The TYCOM designated point of contact shall be informed of the progress/completion of ship work and SOVT.

3.5.4. SHIPWORK DURING A CHIEF OF NAVAL OPERATIONS SCHEDULED AVAILABILITY

If the alteration is to be accomplished during a scheduled CNO availability, the AIT On-site Installation Coordinators shall report to the NSA prior to the arrival of the AIT. The previously established ship's point-of-contact shall also be contacted. As in the case of work accomplished outside of availability, the AIT shall be responsible for scheduling work around events occurring as part of the availability. Any changes to the work schedule provided to the NSA and the ship at the in-brief shall be reported to the NSA and the ship as soon as they are identified. The NSA shall be informed regularly on the progress/completion of shipboard work and SOVT.

3.5.5. PRE-INSTALLATION CHECK-OUT (PICO)

For alterations that require modifications to existing systems, Ship's Force shall complete a PICO, witnessed by the AIT, of applicable systems and equipment prior to modification/relocation. This PICO shall be conducted in order to validate the operational status and characteristics of the systems and equipment. Ship's Force PICO testing shall be based upon PMS currently implemented on the ship. Any additional testing shall be the responsibility of the AIT. The PICO report shall outline SAT or UNSAT performance and will include known discrepancies and designate the activity responsible for correction. The AIT On-site Installation Coordinator/AIT Leader shall provide a copy of the PICO report to the appropriate ship, NSA and TYCOM representatives for record purposes within 3 working days of PICO completion.

3.5.6. INSTALLATIONS IMPACTING THE PROPULSION PLANT ON NUCLEAR POWERED SHIPS

Alteration installations that impact portions of the propulsion plant or designated spaces of nuclear powered ships that are not under the cognizance of the Deputy Commander for Nuclear Propulsion (NAVSEA 08) shall be accomplished as required by NAVSEAINST C9210.4 (Series). This instruction, along with its two enclosures (1. List of Propulsion Plant Systems, 2. Areas of Ships Within Which Arrangement Changes Require Prior NAVSEA Approval) provides requirements for implementing changes, repair and maintenance to nuclear powered

ships. The instruction defines work criteria within shipboard nuclear spaces, or in any part of the propulsion plant or the ship that could affect reactor safety or personnel radiation exposure. It also identifies the affected shipboard spaces, areas and systems. When an installation interfaces with one or more of these, the procedural requirements of the instruction, including its attachments, are mandatory. Caution must be exercised; as such interfaces are not always readily apparent. A careful review of this instruction is necessary to determine possible applicability to a work assignment. The AIT manager is responsible for this review prior to execution. The AIT on-site installation coordinator is responsible during execution. The NSA should be requested to assist in review of changes to specifications during execution to ensure requirements are met.

3.5.7. INSTALLATIONS IMPACTING CRITICAL SYSTEMS OR CRITICAL SYSTEM BOUNDARIES

For CNO scheduled availabilities, the AIT Manager will fund and assign production work required for any portion of an alteration impacting critical system boundaries to the cognizant NSA for execution.

Critical systems are defined as all SUBSAFE, Level 1, Deep Submergence scope of certification, and P1 and P3A piping systems as defined in the following technical guidance documents:
NAVSEA 0948-LP-045-7010 (Series) – Material Control Standard (Non-Nuclear)
NAVSEA 0924-LP-062-0010 (Series) – Submarine Safety (SUBSAFE) Requirements Manual
NAVSEA S9074-AR-GIB-010/278 (Series) - Requirements for Fabrication Welding and Inspection, and Casting Inspection and Repair for Machinery, Piping and Pressure Vessels
0900-LP-001-7000 (Series) – Fabrication and Inspection of Brazed Piping Systems
SS800-AG-MAN-010/P-9290 (Series) - System Certification Procedures and Criteria Manual for Deep Submergence Systems

Critical work consists of production processes such as fit-up/welding, brazing and mechanical joint assembly, documentation of work, and performance of related tests and inspection on critical systems.

If the NSA cannot execute the critical work due to resource constraints or other significant reasons, the NSA shall contract out the work utilizing a Supervisor of Shipbuilding or obtain the required resources from another NSA. If either of these situations is not feasible, the NSA can coordinate and approve the AIT manager assignment of this work to a qualified contractor. For contracted work, the NSA shall perform QA oversight in accordance with the requirements of NAVSEA TL855-AA-STD-010 (Series), Naval Shipyard Quality Program Manual, NAVSEA S0300-B2-MAN-010 (Series), SUPSHIP Operations Manual (SOM), and CINCLANTFLT/CINCPACFLT 4790.3 (Series), Joint Fleet Maintenance Manual, as applicable, to ensure compliant production processes, personnel/procedure qualifications, and work documentation and certification.

3.5.8. ALTERATION INSTALLATION TEAM ON-SITE INSTALLATION COORDINATOR

Once work has been initiated, the designated AIT On-site Installation-Coordinators **(paragraph 3.4.7.2)** shall be responsible for the conduct of the AIT and the resolution of any AIT issues that may arise. When work is to be accomplished during scheduled CNO availabilities, the AIT On-site Installation Coordinators shall attend NSA availability production and coordination meetings. The AIT On-site Installation coordinator should inform the NSA and ship's force of any deficiencies noted during the performance of AIT work so NSA and ship's force can pay particular attention to these areas during their oversight. In addition, the AIT On-site Installation coordinator should keep the NSA and ship's force appraised of any deficiencies (example CORNs) written by the AIT as a result of poor NSA or ship's force performance or support, so they can use them as opportunities to improve. The AIT On-Site Installation Coordinators shall provide an update on installation progress and status of accomplishment during production and coordination meetings. NSA's or Ship's Force shall report AIT deficiencies to the coordinator in writing, except when the deficiency is minor in severity. The AIT On-site Installation Coordinators is responsible for correction/resolution of such deficiencies.

3.5.9. WORKMANSHIP

Workmanship and work practices shall meet the requirements of all contract specifications including applicable NAVSEA Standard Items and Submarine Maintenance Standards as invoked/applicable. AIT Managers must ensure that the AITs have an approved Quality System (**see paragraph 4.2**) prior to commencing installations. The AIT documented Quality System will include or make reference to procedures that will ensure product conformance. AITs without an acceptable Quality System will be denied access to the ship. When tasked, PYs shall provide oversight in AIT installations and production milestones (critical path) to ensure conformance to ship specifications and that the installation is accomplished in accordance with design. PY participation will ensure cradle-to-grave conformance to ship standards throughout the entire AIT installation process. Upon request, in support of NSA spot-checks conducted in their oversight role, the AIT should provide documentation (i.e. welder quals) showing the requirements included in **Appendix D** are met.

3.5.10. DEACTIVATIONS

During accomplishment of the alteration, various circuits, pipe runs, equipment, etc., may have to be temporarily deactivated or placed in a reduced operating status. The Commanding Officer's designated representative and assigned NSA shall be notified in writing, using a Work Authorization Form (WAF) per CINCLANTFLT/CINCPACFLT 4790.3 (Series), of equipment and systems that require isolation to accomplish the alteration. During CNO availabilities when the NSA is coordinating all WAFs and Tag-outs, this request should be made to the NSA. This notification shall be provided prior to initiation of ship work so that tag-outs can be accomplished as required by NAVSEA Instruction S0400-AD-URM-010/TUM (Series), Tag-out Users Manual (TUM). Notification shall be made at least forty-eight (48) hours prior to required deactivation to ensure proper coordination with other on-going work. During periods of intense industrial activity, 48-hour notification may be insufficient to ensure proper coordination and

accomplishment of isolation. In these circumstances, notification should be accomplished as early as possible and/or as required by alteration MOA. **AIT members shall comply with all the requirements identified in the TUM**. The AIT On-site Installation Coordinator will ensure compliance of the TUM is accomplished. Deactivated SUBSAFE or Level I material removed as part of a submarine TEMPALT, which is intended to be reinstalled when the TEMPALT is removed, shall be controlled and stored in accordance with **paragraph 3.4.6**.

3.5.11. INTERFERENCE REMOVAL

Installation of approved alterations often involves removal of interference to gain access for alteration accomplishment. Removal, reinstallation and testing of temporary interference shall be in accordance with the requirements set forth in NAVSEA Standard Item 009-23. Systems and equipment requiring permanent modification or relocation to accommodate the alteration are not to be considered interference but part of the alteration design.

3.5.12. HOUSEKEEPING

The AIT shall perform general housekeeping, including the proper disposal of any hazardous waste, industrial waste or excess hazardous material, in all impacted areas as an on-going part of the alteration accomplishment. At the completion of each shift, each work site shall be broom-cleaned of all debris and trash, including any hazardous waste; industrial waste or excess hazardous material and all trash and debris shall be removed from the ship. The AIT shall properly dispose of all installation and associated material. Additionally, the AIT On-site Installation Coordinator/AIT Leader will be responsible for protecting equipment from contamination during the alteration installation process. NAVSEA Standard Item 009-06 (Protection during Contamination-Producing Operations and Maintaining Cleanliness Accomplish) provides additional housekeeping guidance. The AIT leader will also insure that all hoses, welding leads, temporary ventilation trunks, and other material and services shall be kept clear of Water tight doors and hatches or be capable of being removed in accordance with NAVSEA 0905-485-6010 (submarines).

3.5.13. TESTING

The AIT will test the alteration and all equipment directly impacted by accomplishment of the alteration in accordance with the approved drawings, test procedures and applicable ship specifications. This includes inspection and testing of all systems impacted by the alteration, including systems that have had equipment or machinery removed and reinstalled as interference. Systems shall be subjected to appropriate testing to demonstrate operational acceptability including SIGSEC, TEMPEST, EMC, SUBSAFE, CPS, etc., as applicable. Such tests will be conducted under conditions simulating normal service conditions as closely as possible. An individual alteration will not be considered complete until a SOVT and/or appropriate systems integration testing have been successfully accomplished. The AIT On-site Installation Coordinator shall maintain completed test reports during accomplishment of the alteration. A complete set of the test reports shall be provided to the ship at the completion of the alteration. When shipwork is to be accomplished during a scheduled CNO availability, testing requirements shall be finalized with the NSA and industrial activity for CNO availabilities assigned to a

private shipyard and the SUPSHIP is the NSA generally beginning at the A-60 time point for inclusion into availability Integrated Test Plan/Total Ship Test Plan. This will ensure that testing requirements do not conflict with other on-going shipwork or present possible personnel safety hazards. The NSA shall be notified prior to all testing events and completed test reports shall be provided to the NSA. For submarines, any testing required to be accomplished at sea must be identified to the NSA prior to commencement of the alteration.

3.5.14. INTEGRATED LOGISTICS SUPPORT (INCLUDING TRAINING)

Upon completion of the alteration, any required on-the-job training of assigned members of the ship's crew shall be conducted by the AIT. Training will include both operation and maintenance of all new and modified equipment. All ILS items including any required interim supported on-board spares that can not be procured by requisition, documentation, and a complete set of redlined installation drawings shall be turned over to the Integrated Logistics Overhaul (ILO) if the ship is in a CNO availability, or directly to the ship if the ship is not in a CNO availability, in accordance with the check off lists in Attachments 2 through 5 of the **Completion Report** in Appendix C. Any On Board Repair Parts (OBRPs) that are not covered under APL MUST be listed on a Preliminary Allowance List with a correct RIC assigned from the responsible ISEA. For applicable ships, this data, including the Completion Report, may be delivered directly to the local PY Homeport Representative. CSTOM and CSOSS documentation shall be updated if applicable. Combat system software/firmware and related documentation shall be turned over to the designated officer. This includes unclassified and classified programs. Unique OBRPs or interim spares (as applicable), publications (2 copies), special test equipment and ship's red-lined drawings, marked to indicate all variances, will be turned over to the appropriate ship's representative. This will allow proper recording of the receipt of the material in the ship's SNAP or other custody files. Proof of inclusion in the CDMD-OA work file (i.e. printout of the 'Process Load Results' showing that the work file has been submitted), a completion report indicating affected RINs, and a completed OPNAV Form 4790/2K with the Job Control Number (JCN) assigned will be turned over to the Ship's 3-M Coordinator and the NSA. For ships that do not have SNAP installed, appropriately annotated hard copy APL pages will be supplied through the TYCOM. This updated information, validated by the AIT and ship's representatives, will serve as both basis and authority for generating configuration change information in accordance with OPNAVINST 4790.4 (Series) and requisitions for supply support deficiencies in accordance with NAVSEA T9066-AA-MAN-010 (Series).

3.5.15. FINAL HOUSEKEEPING

After completion of all shipwork, the AIT will conduct final housekeeping in all areas involved in the alteration accomplishment. With the exception of cryptographic gear, equipment that is removed as part of the alteration and is to be turned-in for accounting purposes shall be the responsibility of the AIT. Turn-in of cryptographic equipment will be the responsibility of the ship. If the alteration is accomplished during a scheduled CNO availability, the NSA shall be notified by the AIT of their departure from the alteration site, and of all outstanding discrepancies, environmental reports (paint, solvent, adhesive, welding, fuel, and abrasives usage report) and the corrective POA&M indicated in the completion report. All special badges,

passes, check-out forms, dosimeters, etc. will be turned-in, as required, in accordance with NSA requirements.

3.6. INSTALLATION FOLLOW-UP

3.6.1. OUT-BRIEF

After completion of all ship work, the AIT On-site Installation Coordinator/AIT Leaders will conduct an out-brief and obtain the signature(s) of the ship's designated representative(s) on the Alteration Completion Report **(See Appendix C)** cover sheet. The TYCOM, NSA, RMMCO/CHET, AIT Installation Coordinators and, when applicable, the local PY On-Site Representatives (Program Representative and CDM) shall be invited to attend all out-briefs.

3.6.2. DRAWINGS DEVELOPED BY THE PLANNING YARD

For alterations where the design drawings are prepared by the PY, the AIT shall provide a redline mark-up of the drawings to the ship and the PY indicating any/all deviations/variances authorized by the PY to support the actual alteration accomplishment. The redlined drawings shall be forwarded within 15 working days of installation completion. Copies of LARs, which authorized the deviations or waivers, shall also be forwarded to the PY. Unless otherwise agreed to by the SPM and AIT Manager, the SPM shall be the only activity to task PY efforts.

3.6.3. DRAWINGS DEVELOPED BY THE ALTERATION INSTALLATION TEAM

For alterations where design drawings are prepared by the AIT and reviewed and approved by the PY, the AIT Manager shall ensure that the approved design drawings are revised to indicate the actual "as installed" configuration on the ship. The ship will receive a redlined copy of the drawings at the time of alteration completion and, when revised, electronic media copies of the as-built drawings shall be forwarded NLT 30 days after alteration completion to the applicable ship and the PY. Copies of any LARs, which authorized deviations or waivers from approved designs, shall also be forwarded NLT 30 days after alteration completion to the PY.

3.6.4. SHIP SELECTED RECORD DOCUMENTATION

The actual update of SSR documentation will be accomplished by the PY as part of the normal SSR update process associated with scheduled ship availabilities. SSR updates for AIT installations accomplished outside of scheduled ship availabilities may be accomplished on an annual basis but shall be accomplished before expiration of AIT funding and, if possible, be aligned with the normal SSR update process associated with the next scheduled availability of the respective ship. The PY must receive the as-installed drawings for SSR updates to be accomplished.

3.7. REPORTING REQUIREMENTS

For all alterations, there is a minimum of four (4) reports required from the AIT for each task: Task Status Report, Readiness to Start Naval Message, Naval Message Completion Report, and an Alteration Completion Report. In the event that the Naval Message Completion Report and

Alteration Completion Report list installation deficiencies, the ship receiving the installation will send a naval message Final Completion Report when all deficiencies have been corrected and the ship has accepted the installation as complete. **Suggested formats for these naval message reports** and the **Alteration Completion Report** are provided in Appendix C.

3.7.1. TASK STATUS REPORT

A periodic Task Status Report, as required by the tasking activity, shall be submitted to the AIT Manager with copies to the SPM, applicable TYCOMs, applicable NSA, LCM, and the PY. The form and format of Task Status Reports shall be as specified by the tasking activity. For AITs with more than 1 alteration task from the same AIT Manager, the reports may be combined in the same document, but the data shall be segregated by alteration. Whether tasked by the LCM, SPM, or another activity, copies of the report will be distributed so that the LCM, SPM and PY are informed of the progress of the task(s).

3.7.2. READINESS TO START NAVAL MESSAGE

At least 5 working days prior to the scheduled start of the AIT installation, the AIT On-site Installation Coordinator/AIT Leader will release a Readiness to Start Message following the format provided in Appendix C. The message will reference all pertinent scheduling information and coordination, the required industrial level skills, design readiness, ship requirements, effect of the alteration, ships spaces affected, duration of the installation, and any other pertinent information. Security clearance data required in **paragraph 3.4.7.6** above may be incorporated, if desired.

3.7.3. NAVAL MESSAGE COMPLETION REPORT

Upon completion of the installation, the AIT Manager and ship will send a “joint” naval message reporting completion of the effort, as well as any deficiencies in the installation and the comments from the ship’s Commanding Officer relative to the installation. For alterations accomplished outside of availability, a joint ship/AIT alteration completion message shall be issued within seventy-two (72) hours of operational certification. The message will indicate any system interface not demonstrated during operational certification and include all known discrepancies assigned to the responsible activity (e.g. the ship, the AIT, TYCOM). An alteration completion message is required in addition to the Alteration Completion Report required in **paragraph 3.7.4** below. A **sample Naval Message Completion Report format** is provided in Appendix C.

3.7.4. ALTERATION COMPLETION REPORT

The AIT On-site Installation Coordinator/AIT Leader or his designated agent will fill out the Alteration Completion Report to include signatures and data filled in on all applicable attachments (attachments 1 through 5 for **ALL ALTERATIONS**). The AIT Manager shall forward copies of the completed and signed Alteration Completion Report (Appendix C) to the applicable TYCOM, Group Commander, Squadron Commander, LCM, SPM, ship's CDM, PY (if the PY is not the CDM), and NSA within fifteen (15) working days of alteration completion.

For alterations to CV/CVN's, a copy shall also be forwarded to SUPSHIP Newport News (Code 1800); for submarines, to Submarine Maintenance, Engineering, Planning, and Procurement (SUBMEPP) (Code 1800); and for surface ships, to SUPSHIP Portsmouth (Code 900). As a report attachment, the PY shall also receive a redlined copy of all alteration drawings, marked-up to indicate all variances from the original drawings. PYs will notify the SPM in the event of non-receipt of an Alteration Completion Report within thirty (30) days of the scheduled completion date initially established in accordance with the provisions of this specification. AIT activities responsible for relatively large numbers of AIT equipment alteration installations may customize the format of **Appendix C** as long as all of the essential information required by the LCM, SPM, CDM, NSLC and PY for the AIT alterations is included.

3.7.5. NAVAL MESSAGE FINAL COMPLETION REPORT

Upon correction of all deficiencies reported in the Completion Report, the ship receiving the alteration installation will send a Naval Message Final Completion Report accepting the installation as complete. A sample Naval Message Final Completion Report format for this report is provided in **Appendix C**.

4. QUALITY SYSTEM PROVISIONS

4.1. AIT RESPONSIBILITIES

The AIT shall provide and maintain a Quality System in accordance with **Appendix D**. Upon request by the designated NSA, the AIT will be required to show proof that their Quality System has been accepted by NAVSEA 04 or a SUPSHIP office. Additionally, all other contractually related procedures requiring acceptance shall be available to the NSA prior to the start of shipwork when requested.

4.2. ACCEPTANCE OF THE QUALITY SYSTEMS

4.2.1. INITIAL ACCEPTANCE

Contractors and Government activities performing AIT work shall submit their Quality System for review and acceptance to NAVSEA 04. The Quality System shall comply with the requirements of **Appendix D**.

4.2.1.1. SUPERVISOR OF SHIPBUILDING (SUPSHIP), CONVERSION AND REPAIR ACCEPTANCE

SUPSHIP offices are authorized, if tasked, to review and accept an AIT's Quality System. The SUPSHIP office shall then forward a copy of the acceptance letter to NAVSEA 04 for their master files.

NOTE: Master Ship Repair Agreement (MSRA) and ABR contractors. Contractors performing AIT work who are MSRA or ABR Agreement holders are not required to submit their Quality System to NAVSEA 04, but must maintain a current Quality System that has been accepted by the designated SUPSHIP.

4.3. RESUBMITTAL

Upon acceptance by NAVSEA 04 or a SUPSHIP office, the Quality System does not require resubmittal or re-acceptance unless changes to technical requirements are made or the AIT contractor's status changes.

4.4. QUALITY ASSESSMENT

The AIT Sponsor will perform an annual quality trend analysis for each sponsored contractor using oversight reports, deficiency reports, departure requests, critiques, customer feedback, etc. to evaluate contractor performance. The AIT Sponsor will report results of this trend analysis including weaknesses identified and actions taken to NAVSEA 04.

5. SPECIFICATION COMPLIANCE

5.1. PERFORMANCE INSPECTIONS/COMPLIANCE AUDITS

The TYCOMs, NSAs, Headquarters Systems Commands (NAVSEA, SPAWAR, NAVAIR), SPMs, LCMs and PYs shall perform inspections of installations, on a sampling basis, and will use the sampling evidence to indicate conformance or nonconformance with this specification. In addition, the accepted Quality System will also be subject to periodic compliance audits to the requirements of **Appendix D** as directed by SEA 04.

APPENDIX A
AIT TASKING DATA

ALTERATION INSTALLATION TEAM TASKING DATA

a. The specific alteration(s) covered by the task.

b. The specific applicable hull(s) covered by the task.

c. The type of task (alteration design or accomplishment).

d. Whether Naval Sea Systems Command (NAVSEA) 0902-018-2010, NAVSEA S9070-AA-MME-010/-SSN/SSBN, NAVSEA S9AAO-AB-GOS-010/GSO or other general specification is invoked for basic guidance for design, installation, material selection, testing and certification requirements. Tasking will require the AIT to be in compliance with the requirements of this Technical Specification.

e. The Ship Program Manager (SPM) point(s) of contact.

f. The equipment/system Life Cycle Manager (LCM) (Naval Air Systems Command (NAVAIR), Naval Sea Systems Command (NAVSEA), Space and Naval Warfare Systems Command (SPAWAR), etc.) point of contact and, when certification in accordance with NAVSEA S9040-AA-GTP-010/SSCR is required, the designated Certifying Authority.

g. The AIT Manager point of contact (if other than the LCM or the SPM).

h. The applicable Class Planning Yard (PYs) points of contact.

i. Monthly Task Status Reports to the AIT Manager (tasking activity) with copies to all other interested activities (the applicable Type Commander (TYCOMs) and Naval Supervising Activities (NSAs), the SPM, the equipment/system LCM, the applicable PY [s] and the Operation Navy (OPNAV) platform and/or program sponsors [when requested], etc.) are required.

j. Approval requirements for installation design products (Ship Alteration Installation Drawings [SIDs], test procedures, etc.) for installation design tasks.

k. An Alteration Completion Report (Appendix C) is required upon alteration accomplishment. A Naval message report is also required for accomplishment outside a Chief of Naval Operations (CNO) scheduled availability.

l. An acceptable Quality System (Appendix D) is required prior to commencing installations.

m. The AIT Manager shall ensure that copies of the task (and all subsequent changes) are forwarded to the SPM, the LCM, and the applicable PY. When copies of tasks are received by the LCM, the LCM will complete the AIT checklists on all logistic products required to support the installation, including Allowance Parts lists, Preliminary Allowance Lists, Planned Maintenance System Documentation, Technical Manuals and Changes. The LCM shall forward copies of the logistics products to the AIT On-site Installation Coordinator/AIT Leader for delivery to the ships. The SPM shall provide a copy of the approved Integrated Logistics Support (ILS) Certification.

n. For submarines, whether SUBSAFE work is required and verification that the SUBSAFE work is tasked to an activity authorized by NAVSEA Note 5000 to perform SUBSAFE work.

APPENDIX B
AIT SUPPORT REQUIREMENTS CHECKLIST

ALTERATION INSTALLATION TEAM (AIT)
SUPPORT REQUIREMENTS CHECKLIST

ALTERATION NUMBER	ALTERATION BRIEF	INSTALLER/SPONSOR

SCHEDULE INFORMATION
PROVIDE SCHEDULE DATES/TIMES AS INDICATED

INSTALLATION	*AIT WORKING HOURS*	*TESTING SCHEDULE* (Notional)
START DATE:	DAY SHIFT:	START DATE:
ENDING DATE:	NIGHT SHIFT:	ENDING DATE:

SERVICE REQUIREMENTS
CHECK REQUIRED SERVICES AND FILL IN BLANKS FOR REQUIREMENTS

☐CRANE AND OPERATOR (Number of lifts required): MAXIMUM LIFT HEIGHT REQUIRED:
Notes: 1) Maximum crane lift shall not exceed 10,000 pounds.

☐RIGGING (Mandays required):

☐FORKLIFT (Mandays required):
Notes: 1) Maximum lift for the forklift NTE 2,500 lbs.

☐COMPRESSED AIR (List requirements):

☐STORAGE/LAY-DOWN AREA (List requirements):

☐OFFICE SPACE:
DESKS (Number required):
PHONE/FAX/DATA LINES (List requirements):
COPIER (List requirements):
PARKING SPACES (Number required):

☐TANK WORK (List tanks to be opened): _____ ☐Defuel/pump down ☐Gas-free
_____ ☐Defuel/pump down ☐Gas-free
_____ ☐Defuel/pump down ☐Gas-free
_____ ☐Defuel/pump down ☐Gas-free
☐Defuel/pump down ☐Gas-free
(Continue on sheet 2, "Remarks")

☐WELDING SERVICES (Mandays required): ☐FIREWATCH

☐SANDBLASTING/PAINTING SERVICES (Mandays required):

☐INSULATION/LAGGING SERVICES (Mandays required):

Sheet 1 of 2

☐STAGING REQUIRED (List locations):
☐TEMPORARY ELECTRICAL SERVICES (List locations and requirements):
SERVICE REQUIREMENTS CONTINUED CHECK REQUIRED SERVICES AND FILL IN BLANKS FOR REQUIREMENTS
☐VENTILATION/TEMPORARY AIR CONDITIONING (List requirements):
☐SPECIAL TOOLS (List requirements):
☐SYSTEMS REQUIRING ROTATION AND RADIATION TO SUPPORT SYSTEM OPERATION AND VERIFICATION TESTING:
☐OTHER REQUIREMENTS/REMARKS (List):
POINT OF CONTACT FOR THE AIT REPRESENTATIVE:
POINT OF CONTACT FOR THE IN SERVICE ENGINEERING AGENT (ISEA):
This Checklist Will Be Submitted to the Designated Advanced Planner Before Day A-minus 135 of the Availability.

Sheet 2 of 2

APPENDIX C
MESSAGES CHECKLISTS & REPORTS

Suggested Naval Message Format for Alteration Installation Team Scheduling *(Add to this appendix)*

SUGGESTED FORMAT FOR READINESS TO START NAVAL MESSAGE

ADMINISTRATIVE MESSAGE
ROUTINE
R (DTG)
FM AIT
TO IMMEDIATE SENIOR IN COMMAND
SHIP/STATION
INFO TYPE COMMANDER
GROUP COMMANDER
NAVAL SUPERVISING ACTIVITY (AS APPLICABLE)
RMMCO
PLANNING YARD
SHIP'S CONFIGURATION DATA MANAGER (IF OTHER THAN PLANNING YARD)
IN-SERVICE ENGINEERING AGENT (ISEA)
LIFE CYCLE MANAGER (LCM)
COMNAVSEASYSCOM WASHINGTON DC//04M5/05/PMS444/SPM//
PEO (as applicable)
COMSPAWARSYSCOM SAN DIEGO CA//04F//
NAVICP MECHANICSBURG PA//
FTSC (as applicable)
CHET//SURFACE COORDINATOR// (SURFACE COMBATANTS)
CHET //EHET// for AMPHIB SHIPS
SUPSHIPS NEWPORT NEWS VA//1800//(CARRIERS ONLY)
SUPSHIPS PORTSMOUTH VA//900//(SURFACE SHIP ONLY)
SUBMEPP PORTSMOUTH NH//1800//(SUBMARINE ONLY)
Designated RSG, SIMA as applicable
BT
UNCLAS //N04720//
MSGID/GENADMIN/NSWCCD-SSES 9783/SER25//
SUBJ/SHIP/STATION/ALTERATION TITLE /READINESS TO START//
REF/ (REFERENCE ALL PREVIOUS APPLICABLE SCHEDULING AND COORDINATION COMMUNICATIONS)
RMKS/1. ALTERATION INSTALLATION SCHEDULE INFORMATION
2. INDUSTRIAL LEVEL MANPOWER SKILLS AND EQUIPMENT STATUS.
3. DESIGN READINESS: ALTERATION APPROVAL DATE: _____; SID APPROVAL DATE: _____; RED LINE DRAWINGS TO BE PROVIDED TO PLANNING YARD UPON COMPLETION OF WORK; ILS CERT DATE _____.
4. SHIP REQUIREMENTS:
   A. REQUEST A SINGLE POINT OF CONTACT ON SHIP.
   B. PRODUCTION WORK IMPACT ON SHIPS SCHEDULE AND ROUTINE.
   C. HOT WORK REQUIREMENTS.
   D. FIRE WATCH REQUIREMENTS.
   E. EQUIPMENT STAGING AREA REQUIREMENTS.
   F. SHIPS FORCE REQUIREMENTS WHILE CONDUCTING CHECK POINTS AND DURING POST INSTALLATION TEST OUT OF EQUIPMENT.
   G. SAFETY/ENVIRONMENTAL REQUIREMENTS.
5. ALTERATION DESCRIPTION AND PURPOSE.
6. SPACES AFFECTED.
7. DURATION OF VISIT: _____. ESTIMATED COMPLETION DATE: _____.
8. IN-BRIEF SCHEDULE.
9. CLEARANCE INFORMATION AS APPLICABLE.
10. ANY OTHER APPLICABLE INFORMATION
11. NEGREP ONLY.//

BT

SUGGESTED NAVAL MESSAGE FORMAT FOR INSTALLATION COMPLETION REPORT

ADMINISTRATIVE MESSAGE
ROUTINE
R (DTG)
FM SHIP/STATION
TO ISIC
INFO TYPE COMMANDER//N4/N6//
GROUP COMMANDER
PLANNING YARD
NAVAL SUPERVISING ACTIVITY (AS APPLICABLE)
SHIP'S CONFIGURATION DATA MANAGER (IF OTHER THAN PLANNING YARD)
IN-SERVICE ENGINEERING AGENT (ISEA)
LIFE CYCLE MANAGER (LCM)
COMNAVSEASYSCOM WASHINGTON DC//04M5/05/PMS444/SPM//
PEO (as applicable)
COMSPAWARSYSCOM SAN DIEGO CA//04F//
NAVICP MECHANICSBURG PA//
FTSC (as applicable)
CHET//SURFACE COORDINATOR// (SURFACE COMBATANTS)
CHET //EHET// for AMPHIB SHIPS
SUPSHIPS NEWPORT NEWS VA//1800//(CARRIERS ONLY)
SUPSHIPS PORTSMOUTH VA//900//(SURFACE SHIP ONLY)
SUBMEPP PORTSMOUTH NH//1800//(SUBMARINE ONLY)
Designated NSA, RMMCO, RSG, SIMA as applicable
BT
NCLAS //NO4720//
MSGID/GENADMIN//
SUBJ/(EQUIPMENT/SYSTEM INSTALLATION ON USS SHIP)
RMKS/
1. THIS IS A JOINT (SHIP)/AIT MESSAGE.
2. (EQUIPMENT/SYSTEM) WAS (INSTALLED/MODIFIED/REMOVED) ON (COMPLETION DATE) AND ACCEPTED AS OPERATIONAL WITH/WITHOUT DISCREPANCIES.
(List all known discrepancies, responsible activity, and date discrepancy will be completed. If there are no discrepancies, this is the final and only message report required.)
3. FOLLOWING INFORMATION PROVIDED:
   A. TYPE INSTALLATION:
   B. ALTERATION NUMBER:
   C. SYSTEM OPERATION VERIFICATION TESTING (SOVT) CONDUCTED:
   D. NO CHANGES TO SIDS ARE REQUIRED / SIDS REQUIRE REVISION.
   E. REDLINE DWGS WILL BE PROVIDED TO PY NLT (15 DAYS FROM COMPLETION FILL IN BLANK).
   F. ALTERATION COMPLETION REPORT COMPLETED AND FORWARDED NLT (15 DAYS FROM COMPLETION FILL IN BLANK)
   G. EQUIPMENT INSTALLED: NOMENCLATURE, SERIAL NUMBER, 4790/CK JCL, RINs Affected
   H. ILS STATUS STATEMENT (individually listed MAMs to include serial number)
   I. SUMMARY OF INSTALLATION
4. INSTALLATION ACTIVITY POC (Name, phone number and e-mail address)
5. COMMANDING OFFICER'S COMMENTS.

SUGGESTED NAVAL MESSAGE FORMAT FOR FINAL COMPLETION REPORT

ADMINISTRATIVE MESSAGE
ROUTINE
R (DTG)
FM SHIP/STATION
TO ISIC
INFO TYPE COMMANDER//N4/N6//
GROUP COMMANDER
PLANNING YARD
NAVAL SUPERVISING ACTIVITY (AS APPLICABLE)
SHIP'S CONFIGURATION DATA MANAGER (IF OTHER THAN PLANNING YARD)
LIFE CYCLE MANAGER (LCM)
IN SERVICE ENGINEERING AGENT (ISEA)
COMNAVSEASYSCOM WASHINGTON DC//04M5/05/PEOEXW/PMS444/PEO/SPM//
COMSPAWARSYSCOM SAN DIEGO CA//SPAWAR 04F//
NAVICP MECHANICSBURG PA//
FTSCLANT/PAC
CHET//Surface coordinator//
SUPSHIPS NEWPORT NEWS VA//1800//
Designated NSA, RMMCO, RSG, SIMA as applicable
BT
UNCLAS //NO4720//
MSGID/GENADMIN//
SUBJ/(EQUIPMENT/SYSTEM INSTALLATION ON USS SHIP)
REF/A/RMG/SHIP/STATION/DTG//(ORIGINAL INSTALLATION MSG RPT)
REF/B/DOC/DATE/SERIAL// (AIT INSTALLATION COMPLETION REPORT)
RMKS/
1. THIS IS A FINAL COMPLETION REPORT MESSAGE.
2. (EQUIPMENT/SYSTEM) WAS (INSTALLED/MODIFIED/REMOVED) ON (COMPLETION DATE). ALL DISCREPANCIES LISTED IN REFS A AND B CORRECTED/COMPLETED.
3. INSTALLATION ACTIVITY POC
4. COMMANDING OFFICER'S COMMENTS.

ALTERATION COMPLETION REPORT

ALTERATION NO.: _____
ALTERATION BRIEF: _____
CONCURRENT ALTERATION NO.: _____
CONCURRENT ALTERATION BRIEF: _____

SHIP HULL NO.: _____ SHIP NAME: _____
SHIP CLASS: _____ PLANNING YARD:
_____
TYPE COMMANDER: _____ SQUADRON/GROUP: _____

SHIP PROGRAM MANAGER
Point of Contact: ____(Name, phone number, activity)_____
PLANNING YARD
Point of Contact: ____(Name, phone number, activity)_____
LIFE CYCLE MANAGER
Point of Contact: ____(Name, phone number, activity)_____
INSTALLING ACTIVITY
Point of Contact: ____(Name, phone number, activity)_____
NAVAL SUPERVISING ACTIVITY
Point of Contact: ____(Name, phone number, activity)_____

INSTALLATION DATES: _____ to _____

SHIP	AIT On-site Installation Coordinator
_____ (Signature)	_____ (Signature)
_____ (Printed Name)	_____ (Printed Name)
_____ (Department/Division)	_____ (Department/Division)
_____ (Phone) _____ (Date)	_____ (Phone) _____ (Date)

This signature does not accept the alteration as complete if there are discrepancies noted in Attachment. The Ship shall not accept the alteration as complete until all discrepancies noted in Attachment are corrected, at which time the ship will accept the alteration as complete by Naval message. A suggested message format is provided in this appendix.

ALTERATION COMPLETION REPORT CONTINUED

DISTRIBUTION:
SHIP
Type Commander
Group Commander
Squadron Commander
Naval Supervising Activity (NSA)
Alteration Management Planning-Field Coordinating Office (AMP-FCO)
Life Cycle Manager (LCM)
NAVSEA Ship's Program Manager (SPM) and NAVSEA 04M5
In Service Engineering Agent (If different than LCM)
Ship's Configuration Data Manager (CDM)
Planning Yard (if different than the CDM)
SUPSHIP NEWPORT NEWS (Code 1800) (Carriers only)
SUBMEPP PORTSMOUTH NH (Code 1800) (Submarines only)
SUPSHIP PORTSMOUTH VA (Code 900) (Surface Ships only)

ENCLOSURES: (Circle reports applicable and provided)

(1) GENERAL REPORT (**ALL INSTALLATIONS**)
(2) INTEGRATED LOGISTICS SUPPORT VERIFICATION STATEMENT CHECKLIST (ALL INSTALLATIONS)
(3) END OF INSTALLATION (EOI) INTEGRATED LOGISTICS SUPPORT (ILS) REPORT (ALL INSTALLATIONS)
(4) PHYSICAL CONFIGURATION AUDIT REPORT (ALL INSTALLATIONS)
(5) TRAINING VERIFICATION STATEMENT (ALL INSTALLATIONS)
(6) SIGSEC, TEMPEST Visual Report (if applicable [See NSTISSAM TEMPEST/2-95])
(7) HF ANTENNA INSTLN AND IMPEDANCE REPORT (cover sheet, if applicable [See NAVSEA S9AA0-AA-SPN-010/GEN-SPEC, Sec 400])
(8) CABLE/CABLEWAY INSPECTION REPORT (if applicable [See NAVSEAINST 9304.1])
(9) CERTIFICATION TEST FINDINGS/REPORT (if applicable [See NAVSEA S9040-AA-GTP-010/SSCR])

GENERAL REPORT DATE_____

ALTERATION IDENTIFICATION: _____
(Type Hull-Class-Alteration Number)

SHIP: _____ ALTERATION ACCOMPLISHMENT DATE: _____
(Hull No./Name) (From - To)

This report documents the proper installation of the alteration identified above. To ensure conformance with quality standards and installation specifications and procedures, a physical installation shipcheck was conducted jointly by Ship's Force and the Alteration Installation Team (AIT) for completion of the various elements of this report. Non-acceptance of an individual element requires that the Remarks line be filled-in by Ship's Force. The AIT shall provide a Plan of Actions and Milestones (POA&M) for completion or correction of all non-acceptance items within 5 working days of rejection of the individual element. The POA&M will describe the degree of completion or correction required, lead activity point of contact, and the scheduled completion date. Final completion of discrepancies will be accepted jointly by Ship's Force and the lead Installing Activity (IA). AIT Coordinator blocks are signed by the AIT On-site Installation Coordinator.

1. In-Brief. An In-Brief by a Government representative was held with Ship's Force and a Naval Supervising Activity (NSA) representative.

Ship's Force: _____ AIT Coordinator:_____
Remarks: _____
_____

2. Pre-Installation Check-Out (PICO). A PICO was conducted on existing systems/equipment to verify operational status. Testing was conducted by Ship's Force and witnessed by the AIT. A PICO report was provided to Ship's Force representatives within 3 working days of PICO completion.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

3. Operational and/or operational testing. An equipment operational test and/or System Operational and Verification Test (SOVT) was performed on all equipment/systems impacted by accomplishment of the alteration.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

4. Integrated Logistic Support (ILS). ILS for new equipments was provided and verified.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

5. Training. On-the-Job operator and maintenance training for ship's force was conducted and verified.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

6. Physical installation shipcheck. To ensure conformance with quality standards and procedures, the following elements were shipchecked after completion of shipwork:

a. Design conformance. Alteration was accomplished in accordance with the approved alteration drawings provided.

Ship's Force: _____ AIT Coordinator: _____
Planning Yard Representative: _____
Remarks: _____
_____

b. Equipment access. Access to new and relocated equipment is acceptable for operation and maintenance of the equipment including access to connectors where practicable.

Ship's Force _____ AIT Coordinator_____
Remarks: _____
_____

c. Removal items. In addition to items indicated on removal drawings, piping, cabling, mounts, racks, foundations, pipe/cable hangers, etc., which were made unnecessary or redundant as a result of the accomplishment of the alteration, have been removed and properly discarded.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

d. Structural installation. All structural work (deck/bulkhead modifications, foundations, etc.) is satisfactory in terms of workmanship, fit, function, preservation and finish.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

e. Piping installation. All piping work (pipe modifications, valves, pipe fittings, etc.) is satisfactory in terms of workmanship, fit, function, preservation and finish.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

f. Cabling. Cabling is satisfactory in terms of type, function, workmanship, designation and marking, cable shield grounding, cable entry into equipment, penetrations (including coamings), routing (including avoidance of interferences with equipment or personnel/material movement), acceptable bending radius and finish.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

g. Cableways. Cableway work (hangers, supports and trunks) is satisfactory in terms of workmanship, clearances, spacing, new hanger/support installation (when required), fit and finish. New banding has been applied to all new or disturbed hangers.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

h. Wiring. Wiring is satisfactory in terms of workmanship, designation and marking, terminal lug application (proper type, size, and attachment process [crimp/solder]), sufficient wire length, signal shield terminations, and wire routing within equipment.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

i. Connectors. Connector work is satisfactory in terms of workmanship, connector selection, connector assembly (fully pinned with proper pin type, size, and attachment process [crimp/solder]), sufficient wire length, backshell application (type, assembly, cable shield termination, strain relief, etc.), and accessibility.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

j. Grounding and bonding. Grounding and bonding requirements for safety, TEMPEST, and Electromagnetic Interference (EMI)/Intermediate Modulation Interference (IMI)/Radio Frequency Interference (RFI) have been observed and properly applied and grounding and bonding is satisfactory in terms of workmanship, fit, function, preservation and finish.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

k. Labels and label plates. New labels and label plates have been installed where required (piping, valves, equipment, racks, switch/patch boards, panels, connection boxes, etc.). Existing labels and label plates removed or damaged during accomplishment of the alteration and requiring restoration or relocation have been restored. Labels and label plates have been properly applied and are satisfactory in terms of workmanship, type, fit, function and finish.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

l. Compartment marking. Compartment marking, which was removed or damaged during accomplishment of the alteration and requires restoration or relocation, has been restored in accordance with NAVSEA S9086-CN-STM-020/CH-79 V2 and NAVSEA S9086-RK-STM-010/CH-505. Compartment marking has been properly applied and is satisfactory in terms of workmanship, type, fit, function, and finish.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

m. Impacted equipment condition. Equipment installed or relocated as a result of the alteration accomplishment has been tested and demonstrated to be operational and free from defects. Equipment or components removed and re-installed as interferences are in at least an "as-found" condition. Interference items, which were operational prior to removal, have been tested and demonstrated to be operational and free from defects. (See NAVSEA Standard Item 009-23)

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

n. Clean-up. Chips, shavings, refuse, dirt, fluids (including water), and all scrap and other foreign material, including hazardous waste, industrial waste and excess hazardous material produced as a result of the accomplishment of alteration have been removed from spaces and areas impacted by the alteration and properly disposed. Operational spaces, tanks and unoccupied spaces and compartments have been left "broom clean".

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

o. Out-brief. A government representative held an Out-Brief with Ship's Force and a NSA representative.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

7. Redline Drawings. Redline drawings will be forwarded to the planning yard within 15 working days.

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

8. Correction of Discrepancies (if required). POA&Ms for discrepancies noted above is (are) as follows:

_____
_____
_____
_____

Ship's Force: _____ AIT Coordinator: _____
Remarks: _____
_____

ALTERATION INSTALLATION TEAM (AIT) INTEGRATED LOGISTICS SUPPORT (ILS) VERIFICATION STATEMENT CHECKLIST COMPLETION INSTRUCTIONS

1. The AIT Checklist must be completed for all Ship Alterations (SHIPALTs), Temporary Alterations (TEMPALTs), Ordnance Alterations (ORDALTs), Engineering Changes (ECs), Field Changes (FCs), Machinery Alterations (MACHALTs), and all other configuration changes accomplished by an AIT. An AIT is a Navy activity (military, government civilian or civilian contractor, including shipyard TIGER teams and intermediate maintenance activities) tasked and supervised by a Headquarters/Hardware Systems Command (HSC) or Type Commander (TYCOM). AITs are trained and equipped to accomplish approved shipboard installations and modifications, including Alterations Equivalent to Repair (AERs), on specific ships.

2. Specific completion instructions are as follows:

   a. Annotate items that do not apply as “NA” (Not Applicable).

   b. To report ILS verification for multiple alterations accomplished on single system/equipment the use of a matrix highlighting applicability of each checklist item is authorized.

   c. For AIT installations completed outside of CNO availability complete Section I only.

   d. For AIT installations completed during CNO availability complete Section II only.

   e. For ships in CNO availability but not co-located with the Integrated Logistics Overhaul (ILO) site, complete Section I only.

   f. Obtain the signature of authorized acting personnel or equivalent duty personnel in the absence of designated individual. The Command Duty Officer (CDO) will be point of contact if department head/ department duty officer is not available. Prior to certifying delivery of ILS products, the ship’s authorized agent must verify the ILS products listed in the Logistics Support Products were delivered to the ship.

   g. All AITs must check-in/check-out with the applicable Naval Support Activity (NSA)/ Regional Maintenance and Modernization Coordination Office (RMMCO) before and after installation. It is recommended that all AITs, which are required to check-in through the appropriate RMMCO, utilize the RMMCOs web-based check in site. This will expedite check in and save time. AIT initial check in can be accomplished through RMMCO web site at https://rmmco.navy.mil/

   h. Use the End Of Installation (EOI) ILS REPORT (Attachment 3 of this Appendix) to list all of the Logistics Support Products provided to ship, (e.g. technical manuals by identification number, Maintenance Index Page (MIPs)/Maintenance Requirement Card (MRCs) by number, Test Equipment by SCAT code, Allowance Parts List (APL)/Allowance Equipment List (AELs) by number, with LSSC status indicated and listing of all material being delivered by category [On Board Repair Parts (OBRPs), Maintenance Assistance Module (MAMs) and Operating Space Items (OSI) by National Stock Number (NSN) or Part Number [P/N]).

   i. Prepare an Exception Report for deficient ILS, identifying the activity responsible for providing deficient ILS and expected delivery date.

3. The completed checklist and EOI ILS document shall be attached to the Completion Report. A copy of the completed checklist and EOI document shall be forwarded to Naval Sea Logistics Center (NSLC) Code N54.

RMMCO/AIT INSTALLATION CHECK-IN SHEET

Check-in Gatekeeper[1]: Initials: _____ Serial #:_____ Date: _____

I. Installation Data:
CS/C[4]ISR:☐ HM&E:☐
SHIPALT/Equipment Alt: # _____and Title: _____ System/Equipment: _____
Ship Name _____ Hull Number: _____
Ship/Sub POC, Phone Number & Email: _____
Scheduled Installation Dates: Start: _____ Completion: _____
List associated Conjunctive Alt(s) if applicable: # _____ and Title: _____
_____ and Title: _____ # _____ and Title: _____
_____ and Title: _____ # _____ and Title: _____

II. Installing Activity[2]:
On Site Leader Name (Gov't): _____ Phone Number: (___)_____
AIT/On Site Leader Name (Contr.): _____ Company/Organization: _____
Company Phone Number: (____)_____ Local Phone Number: (_ _)_____
E-mail Address: _____
Gov't. Sponsor Activity: _____ POC: _____ Code: _____
Phone Number: (____)_____ Visit Clearance Request sent[3]: ☐
E-Mail Address: _____ CNO Availability?: ☐

III. Required Items:

	Required[4]?	Approved?	POC name and EDD
SIDs:	☐	☐	_____
SAR[5]:	☐	☐	_____
ILS Certification Form[5a]:	☐	☐	_____
MOA/Production Schedule/POA&M in-hand:	☐	☐	_____
Approved Quality System[6]:	☐	☐	_____
SUBSAFE Certified[6]:	☐	☐	_____

	Required[4]?	In Hand?	POC name and EDD
Tech. Manuals:	☐	☐	_____
PMS Documentation:	☐	☐	_____
Spares/MAMs:	☐	☐	_____
COSAL/APL Documentation:	☐	☐	_____
Operating Procedures[7]:	☐	☐	_____
SOVT/Operational Performance Test:	☐	☐	_____
Planned Configuration Change Documentation: [22]	☐	☐	_____
4790/2K Properly Documented in RMAIS:	☐		JCN ( )-( )-( )

Known CFM/GFM Issues: _____

RMMCO OFFICE USE

IV. Installation/Waiver Authority:
Alt Install Authorized[8]? YES: ☐ NO: ☐ ⇒ Call TYCOM for Authorization/Waiver Status:
Availability Work Package: ☐ Scheduling Conference: ☐
Letter of Authorization/Message: ☐⇒ Ltr Ser. No./DTG_____

Authorization/Waiver Granted?	Required?	Authorized?	(TYCOM POC Name, Date/Time)
ILS Deferral:	☐	☐	_____
SPM Authorization Waiver:	☐	☐	_____
Authorized Baseline Waiver (eCCB):	☐	☐	_____
TCD Waiver:	☐	☐	_____
SECNAV Waiver (5 year decomm):	☐	☐	_____

V. Security Clearance/MSR/NSY Check-In[9]: Security Clearance Check-in POC Initials: _____
☐ Naval Station/Naval Air Station/Sub Base[9] ☐ MSR/NSY[10]

VI. Production Check-in: (AIT Leader Check-in with below POC prior to proceeding with Alt install.[11])
Name: _____ Activity: _____
Phone Number: (_____)_____ E-Mail Address: _____
Check-out POC verify appropriate PLAD(s) are on Installation Completion Report messages and applicable
DFS draft message for prototype/proof of concept installs as required[12]: YES:☐ NO:☐
Gatekeeper summarize check-out procedure for AIT Leader (see Check-out Sheet[13])
Electronic form can be found on WWW.RMMCO.NAVY.MIL

AIT INSTALLATION & ILS VERIFICATION COMPLETION CHECK-OUT SHEET
SECTION I - AIT Installations Completed Outside CNO Availability

SHIP: _____SHIPALT/Equipment Alt: # _____and Title: _____ Serial #:_____

Check-out POC:_____ Phone: (_____)_____
Organization: _____ Initials:_____

I. Waiver, deviation, DFS or LAR/RLAR required[14]: YES ☐ NO ☐ Approved: YES ☐ NO ☐
Waiver, deviation, DFS or LAR/RLAR comments/special considerations (e.g. approved as temporary repair, requires correction next availability): _____

II. Outstanding installation issue(s): _____

III. Using AIT Leader-provided documentation, Check-out POC verify that the ship has acknowledged receipt of all applicable deliverables or that an estimated delivery date and POC has been provided by the AIT:

WORK CENTER/DEPT. Ship's Dept. Head (Or Acting) Signature Required[15].	**PRINTED NAME** / **SIGNATURE**	**RATE/ RANK**	**DATE**
Deliver special tools and special test equipment to Work Center.[16] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Certify copies of Tech. Manuals and Manufacturer Manuals for COTS/NDI have been provided to Work Center.[16,17,18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver Operational Procedures (CSOSS/EOSS, SSM) documentation to Work Center.[18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver Software Programs to Work Center.[18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver or provide On-Board Training (OBT) to ship's crew, if applicable. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
SUPPLY OFFICER. Supply Officer (Or Acting) Signature Required[15].			
Deliver MAMs and associated supply/material support data listings[19] to SUPPO for sub-custody to appropriate work center in accordance with TYCOM directives. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver repair parts (OBRPs) and a copy of associated supply/material support data listings to SUPPO.[15,19] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			

Provide SUPPO a listing of all MAMs removed from the Work Center. SUPPO document transfer of MAMs to AIT rep. on DD1149 expenditure document. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Provide SUPPO a listing of all upgraded MAMs in the Work Center including a cross reference of old to new part number and stock numbers. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver hard copy allowance documentation (APLs/AELs) to SUPPO for SNAP I ships (optional if data included in SNAP II).[16] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Certify PMS documentation (MIPs/MRCs) has been provided to the Work Center and 3M office. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver SSRD markups and redlined installation drawings to SUPPO/CHENG or Duty Officer.[16,18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Certify additional copies of Tech. Manuals have been provided to 3M Coordinator.[16,17,18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
3M COORDINATOR. 3M Coordinator signature required[15].			
Deliver a listing of equipment impacted with assigned CDM Record Identification Numbers (RIN) and alteration/installation status codes for all configuration alterations (adds, deletes and modifications) to the 3M Coordinator (copy to NSA). On the very rare occurrence that the data is not entered into SNAP/NTCSS or CDMD/OA provide completed OPNAV 4790/CK to both 3M Coordinator and NSA with TYCOM approval. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____	JCN		
CHECK-OUT: Appropriate signature required from designated ships force Department Head, Supply Officer or 3M Coordinator. Final check-out signature is NSA/RMMCO.			

IV. Check-out POC verify that ship/sub POC has signed for a copy of the SOVT/OPT Procedure[20]:YES:☐ NO:☐

Production Work Completion Date: _____ Testing Completion Date: _____
Training Completion Date: _____ Alt Total Completion Date: _____

Check-out POC "X" appropriate RMMCO Gatekeeper block[21] SERIAL #:_____ DATE: _____
☐ Combatant Initials _____ ☐ Carrier Initials _____ ☐ Amphib Initials _____ ☐ Sub Initials _____

Notify On Site Representative (OSR)/Maintenance Manager (MM)/Platform Broker (PB)/MC/PE

AIT INSTALLATION & ILS VERIFICATION COMPLETION CHECK-OUT SHEET
SECTION II - AIT Installations Completed During CNO Availability

SHIP: _____SHIPALT/Equipment Alt: # _____and Title: _____ Serial #:_____

Check-out POC:_____ Phone: (_____)_____
Organization: _____ Initials:_____

I. Waiver, deviation, DFS or LAR/RLAR required[14]: YES ☐ NO ☐ Approved: YES ☐ NO ☐
Waiver, deviation, DFS or LAR/RLAR comments/special considerations (i.e. approved as temporary repair, requires correction next availability, etc): _____

II. Outstanding installation issue(s): _____
_____

III. Using AIT Leader-provided documentation Check-out POC verify that the ship has acknowledged receipt of all applicable deliverables or that an estimated delivery date and POC has been provided by the AIT:

WORK CENTER/DEPT. Ship's Dept. Head (Or Acting) Signature Required[15].	**PRINTED NAME** / **SIGNATURE**	**RATE/ RANK**	**DATE**
Deliver special tools and special test equipment to Work Center.[16] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver Operational Procedures (CSOSS/EOSS, SSM) documentation to Work Center.[18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver Software Programs to Work Center.[18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver or provide On-Board Training (OBT) to ship's crew, if applicable. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
SUPPLY OFFICER. Supply Officer (Or Acting) Signature Required[15].			
SUPPO document transfer of MAMs to AIT rep. on DD1149 expenditure document. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
FLTILOTEAM Logistics Management Specialist signature required[15].			
Deliver SSRD markups and redlined installation drawings to FLTILOTEAM ,CHENG or Supply Officer [16,18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Certify all Tech. Manuals have been provided to FLTILOTEAM.[16,17,18] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			

Deliver MAMs and associated supply/material support data listings[19] to FLTILOTEAM. A copy shall be provided to SUPPO for sub-custody to appropriate work center in accordance with TYCOM directives. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver repair parts (OBRPs) and associated supply/material support data listings[19] to FLTILOTEAM. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Provide FLTILOTEAM a listing of all MAMs removed from the Work Center. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Provide FLTILOTEAM a listing of all upgraded MAMs in the Work Center including a cross reference of old to new part number and stock numbers. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver hard copy allowance documentation (APLs/AELs) to FLTILOTEAM.[16] N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Certify PMS documentation (MIPs/MRCs) has been provided to FLTILOTEAM. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
Deliver a listing of equipment impacted with assigned CDM Record Identification Numbers (RIN) and alteration/installation status codes for all configuration alterations (adds, deletes and modifications) to the FLTILOTEAM or appropriate NSA. On the very rare occurrence that the data is not entered into SNAP/NTCSS or CDMD/OA, provide completed OPNAV 4790/CK to both the FLTILOTEAM and NSA with TYCOM approval. N/A ☐ YES ☐ NO; POC _____ Estimated Delivery Date _____			
CHECK-OUT: Appropriate signature required from designated ships force Department Head, Supply Officer or 3M Coordinator. Final check-out signature is NSA/RMMCO.			

IV. Check-out POC verify that ship/sub POC has signed for a copy of the SOVT/OPT Procedure[20]: YES:☐ NO:☐

Production Work Completion Date: _____ Testing Completion Date: _____
Training Completion Date: _____ Alt Total Completion Date: _____

Check-out POC "X" appropriate RMMCO Gatekeeper block[21] SERIAL #:_____ DATE: _____
☐ Combatant Initials _____ ☐ Carrier Initials _____ ☐ Amphib Initials _____ ☐ Sub Initials _____

Notify OSR/Maintenance Manager (MM)/Platform Broker (PB)/MC/PE

RMMCO/AIT INSTALLATION COMPLETION CHECK SHEET NOTES

1. CHET, EHET, SUBMET, TYCOM, etc. Gatekeeper (specifics for each region see below) inserts initial, date and locally assigned serial number to indicate Gatekeeper approval.

Region	CV/CVN	Submarines	Combatants	Amphibs/Aux/Com	MCM/MHC/MCS
SW-RMMCO	CNAP N43	SUBMET-SW	CHET	EHET	N/A
NW-RMMCO	CNAP N43	N/A	IMACC	IMACC	N/A
MP-RMMCO	N/A	NSSC	CHET	CNSGMP	N/A
YO-RMMCO (Yokosuka)	CNAP N43	SUBGRU SEVEN?	CHET	SURFMO Yokosuka/PE	N/A
SA-RMMCO (Sasebo)	N/A	N/A	N/A	SURFMO Sasebo/PE	SURFMO Sasebo/PE
GQ-RMMCO (Guam)	N/A	CSS15	COMLOGWESTPAC	N/ A	N/A
MA-RMMCO	RSG/SIMA	RSG/SIMA	RSG/SIMA	RSG/SIMA NORFOLK	N/A
NE-RMMCO	N/A	SSSU NLON	SUPSHIP BATH	RSG/SIMA EARLE	N/A
SE-RMMCO (Mayport)	CNAL	N/A	CHET	N/A	N/A
SC-RMMCO (Ingelside)	N/A	N/A	N/A	N/A	ACT
SC-RMMCO (Pascgoula)	N/A	N/A	CHET	N/A	N/A

2. Gatekeeper shall fill-in Section I blanks based on information provided by the AIT Leader.
3. Gatekeeper shall verify that visit clearance request (including overseas requirements) has been received. If not on hand, notify AIT Leader of requirement.
4. Gatekeeper shall review SAR, Master List and other available information sources to determine which items are to be delivered to the ship by the AIT. If sources are not available, contact AMP-FCO. If items are required, check the “Required” block. If Items are known to be authorized, check the “Authorized” block. If items are in the waiver process, enter estimated delivery date and POC responsible for providing the waiver. For the items under the "In-Hand" section, if one or more EDD is beyond Production Schedule installation completion date, Gatekeeper contact TYCOM for waiver status. If items are sighted at time of check-in, check the “In-Hand” block. If items are required, but not available for Gatekeeper physical verification at check-in time, Gatekeeper enter estimated delivery date and POC responsible for delivering item by entered date. If one or more EDD is beyond Production Schedule installation completion date, Gatekeeper contacts TYCOM for waiver status.
5. SAR is not applicable to Letter type AER (surface ships), A & I item (subs only) and Alt Requests (CV/CVN only)

5a. ILS Certification Form: Provide a current, approved copy to NSA/RMMCO.

6. Gatekeeper shall ensure that AIT’s company appears on the list of companies that have a NAVSEA-approved Quality System. If the company is not on the list, contact the RMMCO Coordinator or AMP-FCO for assistance. If installation involves SUBSAFE work, ensure that AIT’s company appears in NAVSEANOTE 5000. If the company is not on the list, contact the RMMCO Coordinator, AMP-FCO or Submarine Gatekeeper for assistance.
7. Operating Sequencing Instructions and Procedures include such items as CSOSS, EOSS, SSM (subs only), etc.
8. Check the “YES” block if this ALT has SPM/TYCOM authorization for installation during the scheduled installation dates entered in section II and fill in the appropriate means used to obtain this authorization in the block below. Check the “NO” block if the alteration has not received SPM/TYCOM authorization for installation or the scheduled installation dates in section II are not in accordance with the SPM/TYCOM scheduling guidance. Contact the TYCOM to obtain authorization. Check appropriate “Authorization/waiver granted?” block (“YES” or “NO”) and enter TYCOM POC name, date and time. Gatekeeper shall notify RMMCO Leader and OSR/MC of all AITs being denied access.
9. Gatekeeper shall check the appropriate security check-in POC location block (specifics for each region see below).

Region	CV/CVN	Submarines	Combatants	Amphib/Aux/Cmd	MCM/MHC/MCS
SW-RMMCO	SSSD Det NASNI	SUBMET-SW	SSSD (C-190)	SSSD (C-190)	N/A
NW-RMMCO	SSPS	N/A	SSPS	SSPS	N/A
MP-RMMCO	N/A	NSSC	SS Det PH/PHNSYSS Det	PH/PHNSY	N/A
YO-RMMCO	CNAP N43	N/A	SRF (C213)	SRF (C213)	N/A
SA-RMMCO	N/A	N/A	N/A	SRF (C480?)	SRF (C480?)
GQ-RMMCO	N/A	CSS15	N/A	N/A	N/A
MA-RMMCO	RSG/SIMA	RSG/SIMA	RSG/SIMA Norfolk	RSG/SIMA Norfolk	N/A
NE-RMMCO	N/A	SSSU/SUBBASE New London	SUPSHIP BATH	RSG/SIMA EARLE	N/A
SE-RMMCO	TBD	TBD	CHET	N/A	N/A
SC-RMMCO	N/A	N/A	N/A	N/A	ACT
SC-RMMCO	N/A	N/A	CHET	N/A	N/A

10. The Gatekeeper shall only check this block if the ALT is to be accomplished in a Master Ship Repair (MSR) or Naval Shipyard facility. Checking this block signifies that the AIT Leader must check-in with the designated MSR/NSY prior to the production POC.
11. The Gatekeeper will fill in the appropriate Production Check-in POC’s name, activity and phone number based on OSR/MC guidance.

12. Check-out POC shall review the NSTS 9090.310D Installation Completion Report message to ensure the listed information addressees are included as appropriate (see list below). If addressees are incorrect, direct the AIT Leader to correct the discrepancies and provide a corrected copy of the message report. Ensure that the ISIC and Battle Force Commander are listed on all messages.

SW-RMMCO: SOUTHWEST RMC SAN DIEGO CA //40/41/42/60// (all messages)
CHET SAN DIEGO CA //OIC// (all combatants)
COMNAVAIRPAC SAN DIEGO CA//N42/N43/N436/N6/N61/N62/N63// (all CVNs)
SUBMETSW SAN DIEGO CA //N40// (all submarines)
NW -RMMCO: NORTHWEST RMC PUGET SOUND WA //40/41/42/60// (all auxiliaries)
CHET EVERETT WA//OIC// (all combatants)
COMNAVSURFGRU PACNORWEST//N43/N431// (all aux/combatants)
COMNAVAIRPAC SAN DIEGO CA//N42/N43/N436/N6/N61/N62/N63// (all CV/CVNs)
(TBD) SUBDEVRON NINE//xx/xx// (all submarines)
MP-RMMCO: **FTSCPAC DET PEARL HARBOR HI//00// /** (all messages)
COMNAVSURFGRU MIDPAC//N43// (all amphibs)
CHET PEARL HARBOR HI//OIC// (all combatants)
NSSC PEARL HARBOR HI//N40// (all submarines)
YO-RMMCO: NAVSHIPREPFAC YOKOSUKA JA//OIC// (all messages)
COMCARGRU FIVE SURFMO YOKOSUKA JA//JJJ// (all messages)
COMPHIBGRU ONE (all amphibs)
CHET YOKOSUKA JA//OIC// (all combatants)
COMCARGRU FIVE SURFMO YOKOSUKA JA//JJJ// (all combatants)
(TBD) COMSUBGRU SEVEN //N4/N3/N5/N7// (all submarines)
SA-RMMCO: **NAVSHIPREPFAC YOKOSUKA DET SASEBO JA//OIC// (all messages)**
SURFMO SASEBO JA//JJJ// (all messages)
FTSCPAC DET SASEBO JA//JJJ// (all amphibs)
COMNAVAIRPAC SAN DIEGO CA//N42/N43/N436/N6/N61/N62/N63// (all CV/CVNs)
GQ-RMMCO: COMSUBRON FIFTEEN //N4// (all submarines)
MA-RMMCO: RMMCO NORFOLK VA//OIC// (all messages)
NE-RMMCO: **TO**: SUBRONSUPPU NEW LONDON CT//RMMCO/N42// (**all submarines**)
INFO: SUPSHIP GROTON CT//157// (**all submarines**)
SUPSHIP BATH ME//100/600// (all combatants)
TO: **SIMA EARLE NJ//RSG//** (**all AOE's**)
INFO: SUPSHIP COLTS NECK NJ//100/600// (**all AOE's**)
SE-RMMCO: CHET MAYPORT FL//OIC// (all messages)
(TBD) SUBRON? (all submarines)
CHET PASCAGOULA MS//OIC// (all Gulf combatants)
RSG INGLESIDE TX//N40// (all MHC/MCM/MCS)
(TBD) COMNAVAIRLANT NORFOLK VA//N42/N43/N436/N6/N61/N62/N63// (all CV/CVNs)

13. Gatekeeper shall ensure that the AIT Leader understands the check-out procedure to be followed after installation completion. Review RMMCO check-out sheet with AIT Leader, then identify check-out POC and "X" appropriate block in top section of check-out sheet.
14. Check the "YES" block if a waiver, deviation or DFS is required. Check the "Approved" "YES" block if it was approved. The AIT Leader will provide any waiver, deviation or DFS data describing the deviations or outstanding issues, if required.
15. The Command Duty Officer (CDO) or Supply Officer will be the point of contact if the dept. head/dept. duty officer or FLTILOTEAM personnel are not available.
16. For CV/CVNs deliver to Maintenance Support Center (MSC). MSC signature required. The authorized acting personnel in the absence of the designated individual are the Combat System Officer of the Watch (CSOOW).
17. Technical manuals provided in electronic media format Compact Disk – Read Only Memory (CD-ROM) must be loaded into the Advanced Technical Information System (ATIS).
18. For AEGIS ships Combat Systems/C^4ISR material, deliver to Combat Systems Maintenance Central (CSMC) Systems Test Officer (STO). STO signature is required. For HM&E material, deliver to Central Control Station (CCS).
19. SNAP/NTCSS is the only official source of configuration and supply data. This list is for the administrative use of the AIT only. In the event of a conflict between the list and SNAP/NTCSS, SNAP/NTCSS always takes precedence.
20. AIT Leader shall provide a copy of the SOVT/OPT page with the ship/sub POC's signature affixed indicating receipt acknowledgement
21. The check-out POC will "X" the appropriate RMMCO Gatekeeper block. If IPM involvement was requested by the OSR/MC, the check-out POC will forward the RMMCO/AIT CHECK-IN/-OUT SHEETS, the NSTS 9090.310 Alteration Completion Report, any waiver or deviation documentation and the SOVT/OPT receipt documentation page to him/her. The IPM shall

review these documentation and resolve problems as necessary. The IPM will then forward all documentation to the Gatekeeper. If IPM involvement was not requested, the Gatekeeper shall complete the IPM duties noted above. The Gatekeeper will initial the appropriate blank in the bottom section of the check-out sheet, file the documentation originals and provide copies to the AMP-FCO for data input and metric collection.

22. Planned configuration changes shall be verified in CDMD-OA or proof of inclusion in CDMD-OA (i.e. printout of the “Process load results”). OPNAV 4790/CK is required only if configuration data has not been pre-loaded in CDMD-OA.

EXCEPTIONS TO INTEGRATED LOGISTICS SUPPORT (ILS) VERIFICATION

ALTERATION IDENT: _____ DATE_____
(Type Hull-Class-Alteration Number)

SHIP: _____ ALTERATION ACCOMP DATE: _____
(Hull No./Name) (From - To)

INSTALLING ACTIVITY: _____

1. The following ILS was not provided upon completion of this alteration:

   a. Technical Manuals (listed by identification number and equipment application).

   b. Spares Support that is without RIC/PAL No./Interim Repair Parts (listed by Equipment Nomenclature).

   c. Coordinated Shipboard Allowance List (COSAL) Updates (list documentation not onboard).

   d. Test Equipment and Maintenance Assistance Modules (MAMs) (listed by Equipment Nomenclature).

   e. Planned Maintenance System (PMS) Documentation (listed by Maintenance Index Pages (MIPs), Maintenance Requirements Card (MRC) Numbers).

   f. Ship Selected Record Drawings (SSRD) Markups (list mark-ups not onboard).

   g. Installation Drawings (list drawings not onboard).

2. The following information is provided for items indicated in paragraph (1):

   a. Information on how and when this missing ILS was ordered (i.e. Requisition Number, Letter/Transmittal Number, etc.).

   b. Information on the current status/estimated receipt date/reason for late arrival (if known) (i.e. out of stock, not developed, etc.).

   c. Information on the anticipated method of transfer to the ship when received (i.e. transshipment, forwarding letter, to be accomplished by someone other than Naval Supervising Activity (NSA)/Alteration Installation Team (AIT), etc.).

REMARKS:

END OF INSTALLATION REPORT

4720
Ser ____/____
Date_____

From: INSTALLING ACTIVITY
To: APPLICABLE SPM

Subj: End Of Installation (EOI) Integrated Logistics Support (ILS) Report for USS ( ) OF ( ) 2001

Encl: (1) Alteration ILS Summary
(2) Onboard Repair Parts Summary

1. Provision of the following logistic support products (as listed in the Ship Program Manager (SPM) approved ILS Certification Form) is certified in accordance with 9090-310D Certification criteria:

ALT	EQUIPMENT	OPNAV 4790/2K	OPNAV 4790/CK	CDMD OA UPDATE	REPAIR PARTS	TECH DOC	PMS	TEST EQUIP	DWG NO.	APL/ AEL	MAMs	OSS	TRAINING

LEGEND:
C - COMPLETE - ENCL (1) AND ATTACHMENTS THERETO PROVIDE ILS STATUS
I - INCOMPLETE - ENCL (1) PROVIDES STATUS OF INCOMPLETE ACTIONS
N - NOT APPLICABLE - ALTERATION DOES NOT IMPACT ILS

2. Activity Name, Code point of contact is _____, Commercial (___)___-____/DSN ___-____, or Commercial (___) ___-____/DSN ___-____.

By direction

Copy to:
COMNAVSEASYSCOM (PMS 444)
TYCOM
Designated NSA
ISEA
CDM
PLANNING YARD
NAVSEALOGCEN (CODE N54)
FLTILOACT/FTSCPAC (if applicable)
CHET (if applicable)
USS _____ ( )

CONTINUATION SHEET DATE_____

USS_____(_____)

ALT	EQUIPMENT	OPNAV 4790/2K	OPNAV 4790/CK	CDMD OA UPDATE	REPAIR PARTS	TECH DOC	PMS	TEST EQUIP	DWG NO.	APL/ AEL	MAMs	OSS	TRAINING

ALTERATION INTEGRATED LOGISTICS SUPPORT (ILS) SUMMARY FOR USS _____

DATE_____

SHIP IS SNAP I _____ SNAP II ____ MANUAL_____ NTCSS_____

	STATUS	NOTE
1. Updated Configuration Data Manager Database – Open Architecture (CDMD-OA) Data Base		
2. Provided Push Spares to Supply Department		
3. Provided ADD/DELETE List for On board Repair Parts (OBRPs)		
4. Provided Coordinated Shipboard Allowance List (COSAL) SOEAPL update information (NON SNAP/NTCSS ONLY)		
5. Provided COSAL Part I Sections A & B update information (NON SNAP/NTCSS ONLY)		
6. Provided Hard Copy Allowance Parts List (APL) as indicated below		
7. Provided Technical Documentation identified on page __		

Following APL's were provided and/or deleted:

ALT	APL NUMBER	LSSC	EIC	DATE	MOD FLSIP	.25 FLSIP	.50 FLSIP	APL ADD/DEL

NOTES: (1) CONFIGURATION DATA ENTERED IN CDMD-OA. (COPY OF CDMD-OA FILES ARE ATTACHED)
(2) SNAP/NTCSS DATA BASE UPDATED BY JSN'S: PENDING TRANSACTION REPORT IS ATTACHED.
(3) SNAP/NTCSS DATA BASED UPDATED BY JSN'S:
(4) OPNAV 4790 CK provided if configuration data not entered in CDMD-OA (TYCOM approval)

REMARKS:

DATE_____

ALTERATION ILS SUMMARY (Continued)

Following APLs were provided and/or deleted:

ALT	APL NUMBER	LSSC	EIC	DATE	MOD FLSIP	.25 FLSIP	.50 FLSIP	APL ADD /DEL	

NOTES: (1) CONFIGURATION DATA ENTERED IN CDMD-OA. (COPIES OF CDMD-OA FILES ARE ATTACHED)
(2) SNAP/NTCSS DATABASE UPDATED BY JSNS: PENDING TRANSACTION REPORT IS ATTACHED.
(3) SNAP/NTCSS DATABASE UPDATED BY JSNS:

REMARKS:

DATE_____

ON-BOARD REPAIR PARTS SUMMARY

ALT NO.	PART NUMBER	NSN	NOMENCLATURE	ADD		DELETE		APL	NOTE
				QTY	ONBD	QTY	REMVD		

NOTES: (1) PART SHOULD BE REQUISITIONED BY THE SHIP
(2) SRI PUSHED BY ALTERATION
(3) OSI/MAM PUSHED BY ALTERATION
(4) ITEM DELETED FROM ALLOWANCE PARTS LIST/REMOVED SEE PAGE
(5) PART MODIFIED SEE PAGE____FOR DETAILED INFORMATION
(6) NON-ALLOWED PUSH ITEM SHIP TO STOCK AS AT5

DATE_____

MODIFIED SPARES

MODIFIED	PART NUMBER	NSN	NOMENCLATURE	SER	QTY	O/B	ALT	APL	NOTE
FROM									
TO									
FROM									
TO									
FROM									
TO									
FROM									
TO									

NOTES: (1) PART SHOULD BE REQUISITIONED BY THE SHIP
(2) SRI PUSHED BY ALTERATION
(3) OSI/MAM PUSHED BY ALTERATION
(4) ITEM DELETED FROM ALLOWANCE PARTS LIST/REMOVED SEE PAGE
(5) PART MODIFIED SEE PAGE____FOR DETAILED INFORMATION
(6) NON-ALLOWED PUSH ITEM SHIP TO STOCK AS AT5

TECHNICAL DOCUMENTATION STATUS

DATE_____

	TECHNICAL MANUALS							PMS			
ALT NO	BASIC MANUAL AND NSN	VOL	PART	REV	CHG	ON BOARD Y	N	MIP/MRC	ON BOARD Y	N	NOTE

REMARKS:

REMOVED MATERIAL DATE_____

THE FOLLOWING MATERIALS WERE REMOVED FROM THE EQUIPMENT ONLY AND RETURNED TO: (SEE BELOW)

ALT	PART NO.	NSN	NOMENCLATURE	QTY	NOTE

NOTES: (1) DISPOSITION CODES

PHYSICAL CONFIGURATION AUDIT REPORT

ALTERATION IDENT: _____
(Type Hull-Class-Alteration Number)

SHIP: _____ ALTERATION ACCOMP DATE: _____
(Hull No./Name) (From - To)

INSTALLING ACTIVITY: _____

EQUIPMENT NOMENCLATURE: _____

SERIAL NO.: _____

LOCATION: _____

EQUIPMENT DISPOSITION:

__ INSTALLED __ REMOVED __ MODIFIED

EIC NO.: _____

4790/2K JCN: _____ (4790/2K and 4790/CK if not pre-loaded in CDMD-OA [Attached])

TECHNICAL MANUAL(S): _____
(New/Revised/Copies)
_____

_____

APL/AEL/PAL: _____

TEST EQUIPMENT: _____

_____

_____

PMS DOCUMENTATION: _____ (MIP NO.)

REMARKS:

TRAINING VERIFICATION STATEMENT

ALTERATION IDENT: _____
(Type Hull-Class-Alteration Number)

SHIP: _____ ALTERATION ACCOMP DATE: _____
(Hull No./Name) (From - To)

INSTALLING ACTIVITY: _____

1. It is hereby verified that on-the-job operator and maintenance training has been provided to the ship for equipments installed as part of the above alteration as follows:

OPERATOR TRAINING:

EQUIPMENT	NAME	SIGNATURE

MAINTENANCE TRAINING:

EQUIPMENT	NAME	SIGNATURE

SHIP INTEGRATION TRAINING (IF APPLICABLE):

EQUIPMENT	NAME	SIGNATURE

2. Formal training for this equipment is available as follows:

Course No.	_____	Course No.	_____
CIN	_____	CIN	_____
Quota Control	_____	Quota Control	_____
Training Act	_____	Training Act	_____
Length	_____	Length	_____
NEC	_____	NEC	_____
Phone No.	_____	Phone No.	_____

APPENDIX D

ALTERATION INSTALLATION TEAM (AIT) QUALITY SYSTEM REQUIREMENTS

ALTERATION INSTALLATION TEAM (AIT) QUALITY SYSTEM REQUIREMENTS

The AIT shall provide to NAVSEA 04 and maintain a documented Quality System to ensure product conformance to contractual requirements. The system shall be approved by NAVSEA 04 and, as a minimum, comply with the requirements of Naval Sea Systems Command (NAVSEA) Standard Item 009-04 and all additional contract requirements.

NOTE: This will provide for the same level of quality assurance required for private sector industrial facilities under Master Ship Repair Agreements (MSRA) and Agreement for Boat Repairs (ABR).

1. General. The AIT shall maintain a quality system that will assure that all supplies and services provided for the accomplishment of alterations to ships conform to contract or task requirements whether manufactured or provided by the AIT, or procured from contractors or vendors. The quality system shall apply to supplies and services provided for the accomplishment of alteration to ships whether the alteration is a permanent change to the ship, Ship Alteration (SHIPALT), an equipment alteration (Field Change [FC], Ordnance Alteration [ORDALT], etc.) or a Temporary Alteration (TEMPALT). The AIT shall perform, or have performed, the inspections and tests required to substantiate product conformance to approved design drawings, specifications, and contract or task requirements and shall also perform, or have performed, all inspections and tests otherwise required by applicable SHIPALT records, installation drawings, contract or tasking documentation. Inspection and test Plans and Records shall be made available upon request by the NSA.

The Quality System shall include the following additional requirements, clarifications, and processes:

1.1. Master Test Plans (MTPs). MTPs describe test objectives and the inspections and tests to be conducted to verify compliance with specifications and operating requirements to verify proper operation of impacted systems, equipment and interfaces after completion of shipwork. An MTP shall be prepared for each alteration (permanent or temporary), shall be prescribed by clear, complete and current instructions and shall be developed in conjunction with the Planning Yard (PY), the system/equipment Life Cycle Manager (LCM) and the responsible In-Service Engineering Activity (ISEA). During accomplishment of an alteration, associated MTPs shall be provided to the ship, and designated Naval Supervising Activity (NSA).

1.2. Test Procedures (TPs). Equipment-unique TPs shall be obtained from the system/equipment LCM or the responsible ISEA and shall cover in detail the procedures for accomplishment of each of the equipment unique tests required to demonstrate the proper operation of all equipment impacted by accomplishment of the alteration. This includes all equipment that was modified or relocated as a result of the accomplishment of the alteration. Testing will be adequate to demonstrate compliance with applicable installation certification requirements (Signal Security [SIGSEC], TEMPEST, Radiation Hazard [RADHAZ]/Electromagnetic Interference [EMI]/Electromagnetic Compatibility [EMC], Submarine Safety [SUBSAFE], etc.). When TPs are not available from the system/equipment LCM or the

responsible ISEA, the AIT shall develop the equipment unique TPs based on technical manual information and direct coordination with the responsible ISEA, PY and Class Planning Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP).

1.3. Process controls. Process control procedures shall be an integral part of the quality system. In addition to process controls that may be required by the SHIPALT record, installation drawing, or contract or tasking documentation, the AIT will provide and maintain such process controls as are necessary to assure the quality of shipwork. At a minimum, process controls shall include the following:

1.3.1. Design product control procedures. The AIT's design product control procedures shall cover:

a. Assignment of responsibility for detailed examination, review, and internal approval authority for AIT design products.

b. Required qualifications of personnel performing detailed examination, review, and approval of AIT design products.

c. Procedural flow of design drawings and other associated documentation.

d. Checklists to be used in the detailed examination and review of design products. The checklists shall specify each examination to be performed to verify conformance of products to the applicable specifications.

e. Method of safeguarding classified information.

f. Methods providing for the prevention and ready detection of discrepancies and for timely and positive corrective action.

g. Method of safe storage of Master File Drawings, reference drawings, and other ship design documentation.

h. Methods providing for controlled issue of design drawing copies, both reproducible and non-reproducible.

i. Method for ensuring that listing of training and personnel qualifications/certifications is maintained and made available upon request by the NSA.

1.3.2. Installation process control procedures. Instructions shall be developed which identify requirements necessary to preclude damage to the ship or injury to personnel during the accomplishment of shipwork. These instructions shall include, but are not limited to:

a. Control of magnetic material.

b. Material storage at the work site.

c. Storage and use of hazardous materials including:

(1) Control of respirable fibers from man-made mineral fiber thermal insulating material during insulation and lagging operations.

(2) Control of fluorocarbons when utilized aboard ship.

(3) Control of MIL-H-19457 and MIL-H-22072 hydraulic fluid when utilized aboard ship.

(4) Control, clean-up, and disposal of Poly Chlorinated Biphenyl (PCBs).

(5) Control, clean-up, safety precautions, and environmental precautions for organotin.

(6) Initial monitoring, daily monitoring, and control of insulation and lagging operations.

d. Fire prevention.

e. Sight and hearing protection.

f. Material for staging and screening temporary covers and shelters.

g. Installation of cofferdams, patches, and shaft wraps.

h. Hotwork including:

(1) Determination of gas-free status and for control of hot work safety. (Note: AITs are required to use an OSHA certified marine chemist for entry into confined spaces.)

(2) Welding, brazing, and inspection operations (one for each operation). (Note: NAVSEA 04/SUPSHIP approval of the quality plan does not constitute approval of individual welding, brazing and NDT procedures. The approval requirements for these procedures are specified in NAVSEA S9074-AQ-GIB-010/248 (Requirements for Welding and Brazing Procedure and Performance Qualification) or NAVSEA T9074-AS-GIB-010/271 (Requirements for Non-Destructive Testing Methods).)

i. Uncrating/unpacking of equipment.

j. Storage and use of tools and test equipment.

k. Protection of pipes, cables, and equipment during shipwork.

l. System or equipment de-activation/reactivation.

m. Control of connector fabrication.

n. Workmanship. As a minimum, workmanship shall comply with all contract specifications including applicable NAVSEA Standard Items.

NOTE: Procedures required to control processes in the Safety and Environmental area, are not required to be submitted as part of the written Quality System.

1.4. Personnel Certifications. Procedures shall be maintained to assure personnel certifications that may be required to perform shipwork, depending on the work to be accomplished. These certifications include, but are not limited to, the following:

a. Hot work.

(1) Competent Person. Department of Labor Form OSHA 73, Designation of competent person(s) for each certified member of the AIT and designation of the certified marine chemist(s) responsible of preparing certificates are required.

(2) Firewatch personnel. Certificates of training for fire watch standing.

(3) Tank cleaning personnel. Certificates of safety practices training for tank cleaning personnel.

(4) Persons performing hot work. Certification(s) of qualification for performance of applicable hot work.

(5) Test personnel qualification. Certification(s) qualifications for nondestructive testing personnel.

b. Insulation work.

(1) Qualified Person. Provide written designation of the qualified person who will take and count samples, monitor personnel, inspect affected spaces, and certify affected areas are safe to enter.

c. Fluorocarbon use.

(1) Qualified/Competent Person. Certification of the person who will monitor atmosphere, inspect and certify spaces are safe to enter, and who will supervise these activities.

d. Electrical/Electronic Connector Work.

(1) Qualified personnel. Qualification certification for all Connector Fabricators, Connector Fabricator Supervisors, and Connector Fabrication Quality Assurance Inspector(s).

e. Accomplishment of Nondestructive Testing (NDT).

(1) Qualified personnel. Certification of qualifications for all certified NDT inspectors in the applicable NDT method/methods to be employed.

f. Painting of Critical Surfaces.

(1) Qualified personnel. Certification of qualification for all certified coating inspectors and painters/blasters.

g. Entry into Confined Spaces. Provide written designation of the OSHA certified marine chemist who will inspect atmosphere of confined spaces prior to entry.

h. SUBSAFE work. Workers require qualification and/or certification. AIT must be on NAVSEA Note 5000 in order to perform subsafe work.

i. Electrostatic Discharge (ESD) Work. Workers require ESD qualification.

j. PCMS Work. Workers require qualification/certification.

1.5. Headquarters Centrally Procured Material (HCPM).

1.5.1. Receipt of HCPM. Provide for receipt of HCPM as follows:

a. When the HCPM is received directly, one signed copy of the Shipping Document (DD Form 1348-1) and one signed copy of the Government Bill of Lading (GBL) shall be retained by the AIT.

b. The HCPM shall be inspected immediately upon receipt to verify conformance with description and requirements, verify quantity and check for possible damage.

c. Notify the shipping activity of any damage immediately after inspection. The Headquarters equipment manager and the SPM shall be notified if the damage is more than superficial.

d. If the HCPM is electronics equipment, the AIT shall provide testing and calibration of the equipment to verify that the equipment meets operational specifications.

1.5.2. Records of HCPM. Records of the receipt and disposition of each HCPM item shall be maintained.

1.6. Configuration Status Accounting. Depending on the program, the AIT may be tasked to maintain configuration records of equipment and software so that the ship and equipment managers can maintain configuration control. If configuration status accounting is tasked, the material control process shall provide the following:

1.6.1. Equipment accounting. For each piece of HCPM equipment (not material), which is intended to be installed aboard ship, that is received, ordered, or fabricated by the AIT, a computerized index of purchase orders, modifications accomplished and final disposition shall be maintained.

1.6.2. Software accounting. For each software item, which is to be installed in shipboard equipment, a computerized index of purchase orders, modifications accomplished and final disposition shall be provided and maintained.

1.6.3. Weight Accounting. Depending on the program and the ship class, the AIT may be tasked to maintain a written record of equipment and material removed (weight and installed location) which are not indicated on removal drawings to allow the ship and equipment managers to maintain an accounting of weight changes on weight critical ships. Generally this includes the removal of unused or dead-ended cables, the removal of unused foundations or the removal of unused equipment with associated cables and foundations when such removal is authorized by the ship and designated NSA and approved by the Ship Program Manager (SPM). The material control process shall provide procedures for weight accounting and reporting to the Planning Yard (PY) when required.

1.7 Problem Resolution Process Procedures shall be maintained that allow for documentation of actions to resolve any quality problems with installation or work control. The necessary documentation shall be made available to the AIT Manager and applicable NSA.

APPENDIX E

GUIDANCE FOR DESIGN SHIPCHECKS

GUIDANCE FOR DESIGN SHIPCHECKS

1. General. The purpose of the design shipcheck is to gather as much relevant information as possible about the existing configuration of shipboard equipment, systems and compartments that may be impacted by the accomplishment of an alteration. The information should be as complete and accurate as possible in order to prevent the development of inaccurate or inadequate alteration design or the requirement for a second shipcheck of the ship to gather additional data. Design shipchecks shall be conducted at the ship's convenience on a not-to-interfere basis. Ship availability dates shall be coordinated between the activity developing the installation design and the respective Type Commander (TYCOMs)/Naval Supervising Activity (NSA). Prior to sending the clearance message, the AIT On-site Installation Coordinator/AIT Leader will verify with the NSA that ship and/or industrial activity operations will permit completion of ship-check requirements during the intended ship-check period. If not, the shipcheck shall be re-scheduled.

1.1. Planning Yard (PY) participation. When an Alteration Installation Team (AIT) is performing a design shipcheck in support of the accomplishment of a Ship Alteration (SHIPALT), participation by the PY may also be required as specified in the contract or tasking documentation. When PY participation is required by the contract or tasking documentation, funding for that participation shall be provided by the AIT Sponsor. When the PY does not participate in an AIT design shipcheck for accomplishment of a SHIPALT, the AIT Manager shall issue a Shipcheck Report to the PY to allow coordination with other SHIPALT designs that may be under preparation for the applicable ship. Shipcheck Reports are not required to be submitted by AITs for design shipchecks in support of accomplishment of Temporary Alterations (TEMPALTs) unless specified in the tasking documentation.

2. Design shipcheck materials. Typical materials that should be considered for a design shipcheck are as follows:

a. Paper prints of the arrangement of equipment, associated foundations, and the structural fabrication drawings (when significant bulkhead, deck, or overhead work is anticipated) of areas associated with the alteration are required. Also, system prints (e.g. ventilation [when modification of the ventilation duct system is anticipated], power distribution, lighting, Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance [C4ISR], Heating, Ventilation and Air Conditioning (HVAC), cooling water, lubricating oil) of all systems expected to be impacted by the accomplishment of the alteration. If modifications to electronics cooling water or HVAC systems are considered a possibility, piping diagrams of these systems should also be taken. Include a diagram that indicates the location of the applicable spaces relative to the total ship.

b. Copies of all correspondence between shipcheck activity and TYCOM, NSA, squadron/industrial activity, and ship that discuss the shipcheck, including the forwarding of security clearances, and any special arrangements/requirements.

c. Courier pass for carrying classified drawings/photographs and/or videotapes to and from the site.

3. Procedure. The following is a general procedure that may be used to conduct a design shipcheck on an active fleet ship. During conduct of the shipcheck, all members of the shipcheck team shall wear identification badges prominently displayed at all times. If the shipcheck is to be conducted on a nuclear ship, each member of the shipcheck team is to wear a thermal luminescent device (TLD) or other radiation-detection device, as directed by the applicable squadron, group, or NSA.

3.1. Advance Notification. Officially request the TYCOM/NSA to assign a date for access to the ship to be shipchecked. For TYCOMs that hold AIT Scheduling Conferences, the AIT Manager should present the proposed shipcheck schedule at the next conference to allow advance notification to the applicable ships and NSA of the intent to accomplish the alteration. The purpose of the shipcheck, number of people expected to participate and number of days that access will be required, access to secure areas or any other special requirements (securing transmitting equipment while shipchecking masts, etc.) shall be identified. The ship, NSA, and appropriate squadron or group shall be provided information copies of the request. For shipchecks conducted during a scheduled Chief of Naval Operations (CNO) availability, the AIT On-site Installation Coordinator/AIT Leader shall provide clearance information to the Ship/NSA a minimum of 5 working days prior to arrival or as established by TYCOM policy. If the shipcheck is to be conducted outside of a scheduled availability, the AIT On-site Installation Coordinator/AIT Leader shall provide visit clearance information, to the ship/NSA, a minimum of 5 working days prior to the AIT arrival or as established by TYCOM policy.

3.1.1. Security clearances. After the TYCOM/NSA has provided the access date(s) for the shipcheck, the AIT On-site Installation Coordinator/AIT Leader shall provide security clearance information to the ship, TYCOM, NSA, and appropriate Naval activities preferably 30 days but no less than 5 working days prior to the AIT arrival or as established by TYCOM policy.

3.1.2. Check-in. The AIT On-site Installation Coordinator/AIT Leader or his designated agent shall check-in with the appropriate NSA, to effect security verification, shipcheck schedule verification, and badge issuance prior to proceeding to the shipcheck ship.

3.2. Arrival. Arrival at the ship should be arranged in advance with the applicable NSA. Generally, arrival will be no earlier than 0830 and no later than 1530 unless previously arranged. Arrival between 1200 and 1300 should also be avoided.

3.2.1. Personnel identification. All required personnel identification should be available upon arrival at the site. Personnel identification shall be clearly visible, worn above the waist at all times when onboard ship and when transiting an industrial area.

3.2.2. Boarding the ship. Depending on the location of the ship at the site, access to the ship may be gained directly from the pier or via another ship. Personnel identification will generally be checked and recorded at the entrance to the pier or the industrial area, when passing through other ships and upon arrival on the ship to be shipchecked. Upon arrival at the ship to be shipchecked, the AIT On-site Installation Coordinator/AIT Leader will contact the established ship's point-of-contact or the Command Duty Officer. If neither is available, the Operations Officer or Work Center Supervisor of the area primarily involved in the shipcheck will be

requested. The AIT On-site Installation Coordinator/AIT Leader shall state the purpose of the visit and provide a short in-brief.

NO MEMBER OF THE TEAM SHALL LEAVE THE QUARTERDECK OR SHIP ENTRY AREA WITHOUT AN ESCORT OR UNTIL PERMISSION TO DO SO HAS BEEN GRANTED.

3.3. In-Brief. An in-brief shall be conducted to explain the purpose of the shipcheck, the systems and spaces to be shipchecked and the procedures to be used as follows:

a. Provide a list of all personnel involved in the shipcheck and indicate that member(s) is (are) designated as point(s) of contact for the shipcheck team.

b. Outline the general procedures and approximate schedule for use during the shipcheck.

c. If a camera will be used as part of the shipcheck, request permission to photograph and/or video tape the shipcheck area(s).

d. Request permission to scrape paint from cable tags or equipment label plates to determine tag/plate information. Provide a list of the locations where this was done to the ship at the end of the shipcheck.

e. If normally unmanned or restricted areas of the ship are to be shipchecked, request permission to access these areas during prearranged periods on a not-to-interfere basis.

f. If transmitting systems such as communications or radar systems need to be inhibited or secured to gain safe access to masts, antennas or topside equipment as part of the shipcheck, or if power or other ship services must be secured to a specific equipment to gain safe access to the interior or back of that equipment, request permission for ship's force personnel to inhibit or secure the required equipment during a prearranged period of the shipcheck. Ensure that the members of the ship’s force follow proper tag-out procedures.

MEMBERS OF THE SHIPCHECK TEAM SHALL NOT INHIBIT OR SECURE SHIP EQUIPMENT. ENSURE THAT EQUIPMENT HAS BEEN SECURED OR INHIBITED AND THAT PROPER TAG-OUT PROCEDURES HAVE BEEN OBSERVED PRIOR TO GOING ALOFT OR GOING INTO OR BEHIND EQUIPMENT. ENSURE THAT SHIP'S FORCE IS NOTIFIED WHEN A PERSON IS GOING ALOFT OR IS ENTERING OR GOING BEHIND DANGEROUS EQUIPMENT AND WHEN THAT PORTION OF THE SHIPCHECK IS COMPLETED SO THAT CIRCUITS MAY BE RESTORED TO NORMAL OPERATION.

3.4. Shipcheck. Record the name and hull number of the ship being shipchecked and the date on each sheet of each drawing or sketch and all notes that are used or developed during the shipcheck as well as the date(s) of the shipcheck.

3.4.1. Recording physical configurations. Whenever possible, mark-up paper copies of the existing general arrangement drawing(s) of the space(s) to be impacted by the alteration. This will provide a record of the actual configuration of areas where equipment is to be removed or where new equipment is to be installed at the time of the shipcheck. If use of a camera is approved, photograph and/or video tape all critical locations, from more than one vantage point, and all areas that may have special design or installation problems. Place one or more six or eight-foot folding rules with enhanced markings in the areas to be photographed and/or video taped to provide an indication of scale and record critical measurements. For photographs, record the details of each photograph on the back of the photograph (ship identification, space identification and frame number, identification of the view [looking to port-forward from the centerline, etc.], and the subject of the photograph [back of rack no. 3], etc.). When using a video camera to record shipcheck information, record the data in a film log noting the tape number, ship identification, and sequence of recorded data (space identification and frame number, identification of the view [looking to port-forward from the centerline, etc.], and the subject of the view [back of rack no. 3], etc.). Information that may be needed to develop detail installation design includes:

a. Location of all compartments, spaces and areas in the ship that may be impacted by accomplishment of the alteration. This includes the name, compartment number and level of each space as well as all adjacent spaces (including above and below).

b. Within each space:

(1) Overall dimensions of the space.

(2) Measured distance between ship centerline and a specific location in the space (generally the bulkhead nearest the centerline).

(3) Frame member information including frame numbers in the areas of interest, type, construction, and measured separation between adjacent frames.

(4) Details of bulkhead and partition construction, including type, material and contour. Determine and note if bulkheads are part of watertight, airtight, fumetight, light tight, fire zone, air conditioning, Collective Protection System (CPS) boundary, and/or TEMPEST physical or electrical perimeter boundaries.

(5) Details of bulkhead and partition support members including type, material, size and spacing.

(6) Location and measured details of all structural interference within the space.

(7) Details of overhead construction (including main support beams), including type, material, contour and measured distance above the deck at the corners of the space and at other locations within the space. Determine and note if the overhead is part of watertight, airtight, fumetight, light tight, fire zone, air conditioning, CPS boundary, and/or TEMPEST physical or electrical perimeter boundaries.

(8) Details of deck construction (including support beams), including type, material and contour. Determine and note if deck is part of watertight, airtight, fumetight, light tight, fire zone, air conditioning, CPS boundary, and/or TEMPEST physical or electrical perimeter boundaries.

(9) Location and details of all doors, hatches, and scuttles including type, material, size and swing. Determine and note if doors and hatches are part of watertight, airtight, fumetight, light tight, fire zone, air conditioning, CPS boundary, and/or TEMPEST physical or electrical perimeter boundaries.

(10) Location and details of all stanchions including type and size.

(11) Location and details of all pipe runs including pipe size, service, distances from overhead at various locations, distance from nearest bulkhead at various locations, and penetration locations.

(12) Location and details of all waveguide runs including waveguide type/dimensions, service (radar, Electronic Warfare (EW), etc.), distances from overhead at various locations, distance from nearest bulkhead at various locations, and penetration locations.

(13) Location and details of all vent duct runs including duct type/dimensions, service, distances from overhead at various locations, distance from nearest bulkhead at various locations and penetration locations.

(14) Location and details of all cableways including type, construction, routing, distances from overhead at various locations, distance from nearest bulkhead at various locations, available space, and penetration locations (stuffing tubes, riser boxes and bulkhead/-deck coamimgs).

(15) Locations and measured details of all fabricated equipment foundations (measurements referenced to centerline/bulkhead and height above the deck). Indicate equipment mounted on foundation.

(16) Locations, details and identification of all power, lighting, and Interior Communications (IC) distribution panels and switchboards, including type (symbol number), panel or switchboard number, service, distribution data, distance of the bottom of the enclosure to the deck, and distance from an outside edge of the enclosure to the nearest bulkhead.

(17) Locations, details and identification of all power, lighting, and IC fixtures (including connection boxes and power outlets) that are not rack mounted, including type (symbol number), service, system identification data, distance of the bottom of the fixture to the deck (or overhead for overhead mounted equipment), and distance from the outside edge of the fixture to the nearest bulkhead.

(18) Identification and measured location of all other permanent equipment including:

(a) Racks and all equipment mounted in the racks. Include space between back of rack and bulkhead (or nearest structure) and space between front of rack and nearest rack, equipment or structure if less than five feet. Also note any pull-out, swing-out, or special access clearances that must be maintained.

(b) Shelf mounted equipment.

(c) Bulkhead, deck and overhead mounted equipment.

(d) Desks and tables including type, size, and fabrication.

(e) Fiddle boards including type, size, and fabrication.

(f) Plotting tables including type, size, and fabrication.

(g) Status or display panels including type, size, and fabrication.

(h) Workbenches including type, size, and fabrication.

(i) Storage containers (safes, lockers, cabinets, book shelves, bins, etc.) including type, size, and fabrication.

(j) Chairs, stools and benches including type, size, and fabrication.

(k) Administrative support equipment (copiers, shredders, sorting bins/trays, etc.) including type, size, and fabrication.

Note specifically the model (R-2368A/URR, etc.) and variant (AN/WSC-3 (V) 3, etc.) of the equipment, as applicable.

(19) Identify and measure the location of all other permanent equipment that may require removal as interference during accomplishment of the alteration. Systems and equipment that requires permanent modification or relocation to accommodate the alteration are not considered interference but part of the alteration design.

c. Within adjacent spaces (including above and below), the measured locations of cable, pipe, waveguide, and vent duct penetrations that may be impacted by the alteration. Determine possible access problems and special requirements such as fire watches, equipment protection, interference removal, etc., which may be needed in these spaces when the alteration is accomplished.

d. Where cables will be removed or installed in cableways outside of the primary areas impacted by the alteration, these cableways shall also be shipchecked. For cableways that will have existing cable(s) permanently removed, the required information includes measured cableway routing, general cableway construction, penetrations that need to be plugged/filled, and general accessibility. For cableways that will have new cables installed, the required

information includes measured routing of the cableway, general construction, existing spare capacity, spare penetrations that can be reused or measurements of locations where new penetrations can be installed, and locations where existing cableway hangers need to be modified or replaced or where new hangers will be required.

e. Where modifications to ship's weatherdeck structure are required or the arrangement of weatherdeck equipment is impacted by the accomplishment of an alteration. Required information may include:

(1) Detailed measurements will be required of all antennas, damage control equipment, and replenishment stations within 30 feet of the impacted structure or equipment will be required. Record the identification of all such equipment/stations that fall within this radius.

(2) Detailed measurements will be required of all CPS and Counter Measure Wash Down System (CMWDS) components and boundaries within 30 feet of the impacted structure or equipment will be required. Record the identification of all such components that fall within this radius.

(3) Material composition of the ship structure (steel, aluminum, etc.).

(4) Types, sizes, and locations of structural beams supporting the deck and structure in the vicinity of proposed new structure or equipment location(s). Determine interior structure and equipment that may be immediately inside the ship from the proposed location(s).

(5) Possible location(s) for required cable penetration(s) for new or relocated equipment. Determine possible interior installation/access problems associated with new penetrations.

(6) Electromagnetic Compatibility (EMC) and Electromagnetic Pulse (EMP) protection measures.

(7) Measured cable routing through interior and exterior cableways for all cables from new or relocated equipment to the primary termination (power or control, etc.). Determine locations where conduit, penetrations, cable protection, etc., will be required to meet all physical protection, Electromagnetic Interference (EMI), Radio Frequency Interference (RFI), EMC, EMP and TEMPEST requirements. Determine what modifications to existing cableways will be required. Where the most direct cable run does not appear to be practicable for an AIT installation or where portions of the proposed cable run could not be visually observed as part of the shipcheck and the actual condition of the existing cableway is unknown, identify possible alternate cable runs with the above information.

(8) Photographs and/or videotapes of the proposed new or modified structure or equipment location(s), all surrounding antennas, equipment and structure, and the entire proposed cable run(s).

f. Where antennas are to be installed or relocated as part of the alteration, detailed measurements must be made not only for the new antenna location but also for the routing of the antenna cables. Required information may include:

(1) Identification of all antennas (type, function [communications, radar/Identification Friend of Foe (IFF), Electronic Warfare (EW), Close In Weapons System (CIWS), special function, etc.] and antenna identification number) and all permanent weatherdeck equipment and ship's structure within 30 feet of the proposed new antenna location.

(2) Measured distances from new antenna location to existing antennas, permanent weatherdeck equipment, and ship's structure within 30 feet of the proposed new antenna location.

(3) Material composition of ship structure (steel, aluminum, etc.).

(4) Type, size, and locations of structural beams supporting the deck and structure in the vicinity of the proposed new antenna location. Determine interior structure and equipment that may be immediately inside the ship from the proposed location.

(5) Possible location(s) for required cable penetration(s). Determine possible interior installation/access problems associated with new penetrations.

(6) Measured cable routing through interior and exterior cableways for all antenna cables from the antenna to the primary termination (receiver, transmitter, coupler, Radion Frequency (RF) distribution panel, etc.). Determine locations where conduit, penetrations, cable protection, etc., will be required to meet all physical protection, EMI, RFI, EMP, EMC and TEMPEST requirements. Determine what modifications to existing cableways will be required. Where the most direct cable run does not appear to be practicable for an AIT installation, or where portions of the proposed cable run could not be visually observed as part of the shipcheck and the actual condition of the existing cableway is unknown, identify possible alternate cable runs with the above information.

(7) Photographs and/or video tapes of the proposed new antenna location(s), all surrounding antennas, equipment and structure, and the entire proposed RF and control cable run(s). Take photographs and/or videotapes of the proposed new antenna location from the pier area or from another ship (from a distance) to clarify the relationship of the proposed antenna location(s) to the rest to the ship.

3.4.2. Determining configurations of electrical/electronic systems. Whenever possible, mark-up paper copies of the existing system diagrammatic drawing(s) (block, isometric or cabling deck plan) of the individual systems to be impacted by an alteration. This will provide a record of the actual configuration of those systems at the time of the shipcheck. It is important to determine and record all equipment, components, and cabling to be impacted by the alteration. Information that may be required to develop a detailed design includes:

a. All equipment that could be removed or require relocation as a result of the accomplishment of the alteration. Note specifically the model (CU-2279A/U, etc.) and variant (AN/WSC-3 (V) 3, etc.) of the equipment, as applicable.

b. All components (panels, connection boxes, transition devices, etc.) that could be impacted. Identify transformers planned for removal or relocation that could contain PCBs and therefore require special handling and disposal as hazardous material.

c. All cabling and cabling components that are part of the system that could be impacted. These include:

(1) All cabling identified by circuit identification number and cable type. For cables to be removed or relocated identify cable-insulating material (older cables may contain asbestos or other hazardous material and will require special handling and disposal as hazardous material).

(2) All connectors identified by type and connection to equipment or components (J1, etc.).

(3) All in-line devices (tees, dividers, combiners, transition fittings, etc.) by type/nomenclature.

(4) All impacted (existing or required new) cable penetrations (equipment, bulkhead, or deck stuffing tubes, strain relief, etc.) by type, size, material, and construction (kickpipes, gang or multiple penetrator, etc.) For existing penetrations and tubes, record penetration hole number/location identification number if assigned. Record also any existing spare penetrations that could be used for new cabling. Indicate locations where new penetrations will be required.

(5) Identify the general routing of the cabling through the cableways if an isometric or deck cabling diagram is to be prepared for the ripout diagram and/or the alteration cabling diagram. Include special cable routing requirements (e.g. physical protection, major obstructions, ship expansion joints, EMI/EMP/TEMPEST protection), and the general location of all penetrations and stuffing tubes.

d. All existing waveguide and waveguide components (bends, transitions, etc.) that are to be impacted by the alteration and all special design considerations will need to be addressed as part of the alteration design. Major interference that will be relocated, rerouted, or modified to accommodate the alteration installation, maintenance access plate locations, and locations of new bends or fittings are also part of the alteration design.

3.4.3. Recording configurations of mechanical systems. Whenever possible, mark-up paper copies of the existing system diagrammatic drawing(s) of the individual mechanical systems to be impacted by an alteration. This will provide a record of the actual configuration of those systems at the time of the shipcheck. It is important to determine and record all equipment, components, and piping to be impacted by the alteration. Information that may be required to develop a detailed design includes:

a. All equipment that could be removed or relocated as a result of the accomplishment of an alteration. Note specifically the model and or type identification of the equipment, as applicable.

b. All components (indicator/control panels, sensors, limit switches, etc.) that are part of the system that could be impacted.

c. All piping and piping components that are part of the system that could be impacted. This includes:

(1) All piping identified by system identification, type, size and length.

(2) All valves identified by system identification, type, size and application.

(3) All fittings (elbows, tees, transition fittings, check valves, filters, hoses, etc.) by type and size.

(4) All pipe penetrations by type and size. Record penetration number/location identification number if assigned. Record also any spare penetrations that could be used for new piping.

(5) All pipe insulation that must be removed, relocated or replaced, even as interference (older insulation may contain asbestos or other hazardous material and will require special handling, storage, and disposal as hazardous material).

d. All bulkhead or deck insulation that must be removed, even to gain access to interference items (older insulation may contain asbestos or other hazardous material and will require special handling, storage, and disposal as hazardous material).

3.5. Shipcheck completion. Upon completion of the shipcheck, collect all materials used for the shipcheck and prepare to depart the ship. Ensure that all equipment and component access panels that were opened or disturbed are restored to their proper position. Ensure that all materials and portable equipment, which were temporarily removed to gain access to items to be shipchecked, are restored to their original locations and are stowed to the satisfaction of the crew. Ensure that all shipcheck-generated trash is picked up and properly stored/disposed .

3.6. Departure. When departing the ship at the completion of the shipcheck, notify the ship's point-of-contact or other assigned member of the crew that the shipcheck has been completed and offer (and be prepared) to provide an out-brief on the information gathered/determined as part of the shipcheck. Allow a review of all photographs and/or videotapes for possible classification prior to departure from the ship. When departing an industrial activity, inform the NSA of the departure. All special badges, passes, dosimeters, etc. will be turned-in, as required, in accordance with local requirements. Prior to final departure from the area, check out with the NSA.

APPENDIX F

SHIP'S FORCE IN-BRIEF

SHIP'S FORCE IN-BRIEF

Purpose. The purpose of a Ship's Force in-brief is to provide an overview and objectives of the alteration to be accomplished. The in-brief shall outline work to be performed, review the schedule of accomplishment and identify impacts on the ship, confirm arrangements for requested/required services, establish responsibilities and points of contact, review planned ship's evolutions, and review Integrated Logistics Support (ILS) products and training to be provided.

1. Alteration Overview. The overview provides a description of the alteration purpose and the expected improvements to be provided, areas of the ship impacted by the alteration and additional areas affected by the accomplishment of the alteration and the impact on ship's services.

2. Work to be accomplished.

a. Review of installation drawings.

(1) Arrangement drawing(s) indicating equipment to be removed and locations of new, modified, and relocated equipment.

(2) System drawing(s) indicating system interconnections and interfaces with ship system interfaces including power and ventilation.

(3) Cable and/or pipe runs.

b. Review of equipment and materials to be used.

(1) Review of equipment and material to be installed.

(2) Review of equipment and material to be removed

(3) Review of hazardous materials to used or removed and handling and disposal procedures.

c. Review of ship's systems impacted during alteration accomplishment and duration of impact.

d. Review of areas that may have restricted access during alteration accomplishment.

(1) Areas where welding is to be accomplished.

(2) Areas where hazardous materials is to be used or handled.

e. Review of applicable process control procedures to be used for fire prevention, hot work, sight and hearing protection, protection of pipes, cables, and equipment during shipwork, system or equipment deactivation/reactivation, material storage at the work site, storage, use and disposal of hazardous materials (including excess and partially used hazardous material

and hazardous material removed as part of the accomplishment of the alteration), material for staging and screening, temporary covers and shelters, uncrating/unpacking of equipment and workmanship.

f. Review of personnel qualification/certifications for work requiring specific qualifications.

Schedule of events. A detailed review of schedule-of-work and test plan and/or System Operational Verification Testing (SOVT) agenda of all functional items shall be provided during the briefing. Key event checkpoints (e.g. piping flush, hydrostatic testing, cableway and compartment closeout) and system operational testing of all functional items will be provided for ship witnessing. The material deliveries, required compartment accesses, security requirements, and shift schedules will also be discussed at this time. The schedule information shall include projected start and finish dates, planned shift start time(s), planned testing periods, planned training dates and planned ILS turnover.

Planned ship's evolutions. Any special restrictions due to ship's evolutions during the availability (weapon/ordinance loading, ship's receiver/transmitter testing, emergent requirements, other alterations being accomplished, etc.), which could impact or be impacted by work being performed by the Alteration Installation Team (AIT), will also be discussed at this time. It will be the responsibility of the AIT to perform required shipwork around these restrictions. If restrictions exist which can not be accommodated by the AIT without jeopardizing scheduled completion date of the alteration or the scheduled departure date of the ship, the AIT will make arrangements with the Naval Supervising Activity (NSA) for accomplishment of the alteration during a subsequent availability and withdraw from the ship.

Confirmation of services. AIT arrangements for crane and/or welding services, special test requirements, fire watches, etc., will also be confirmed at this time. For alterations being accomplished during Chief of Naval Operations (CNO) availability, arrangements and associated funding for services included in the contract (if the alteration is to be accomplished at a private activity) (crane services, welding services, special test requirements, fire watches, NSA disposal of turned-in equipment/material, etc.) will also be confirmed at this time.

Points-of-contact. The AIT On-site Installation Coordinator/AIT Leader shall request the ship to provide a list of all points-of-contact for accomplishment of the alteration(s). The points-of contact list will include those technical personnel assigned to work with the AIT and witness testing, the names of those people authorized to sign-off the Alteration Completion Report, and the names of personnel authorized to accept delivery of computer tapes and ILS items. For alterations being accomplished during CNO availability, the NSA representatives, Planning Yard (PY) On-Site Representatives (Program Representative and Configuration Data Manager [CDM]), and the lead ship availability manager from the industrial activity will also be identified. For alterations being accomplished during a CNO availability, the AIT On-site Installation Coordinator will also identify which AIT member(s) will attend daily progress meetings.

Responsibilities. The AIT On-site Installation Coordinator will be identified as being responsible for the conduct of the AIT and the person to be contacted in regard to work deficiencies, scheduling problems, or problems with AIT members. The AIT On-site Installation Coordinator shall be accessible to ship's force throughout the period(s) the AIT is on board and is responsible for the resolution of identified deficiencies or issues associated with accomplishment of the assigned alteration(s). When work is being accomplished during a CNO

availability, the AIT On-site Installation Coordinator shall also be accessible to the NSA and the lead ship availability manager at all times during period(s) the AIT is on board the ship. The AIT On-site Installation Coordinator shall be responsible for reporting any changes in schedule and providing notification to the ship and NSA of upcoming key event checkpoints and testing evolutions. Additionally, If multiple-shift work is to be accomplished, the AIT On-site Installation Coordinator(s) for each shift shall be identified.

ILS and training to be provided. The AIT On-site Installation Coordinator/AIT Leader will review all ILS products and provide a current, approved ILS Certification Form as well as all training to be provided at the time of installation. All applicable ILS elements listed in the ILS portion of the Alteration Completion Report and any known ILS deficiencies shall be addressed.

APPENDIX G

LIST OF ACRONYMS

List of Acronyms

3M	Maintenance and Material Management
AAO	Approved Acquisition Objective
ABR	Agreement for Boat Repair
ACAT	Acquisition Category
AD	Airworthiness Directive
ADP	Automated Data Processing
ADUSD(L)(MDM)	Assistant Deputy Under Secretary of Defense(Materiel and Distribution Management)
AEL	Allowance Equipage List
AER	Alteration Equivalent to Repair
AIPS	Alteration Installation Planning System (Now NDE-NM)
AIT	Alteration Installation Team
A&I	Alteration and Improvement Item
ALT	Administrative Lead Time
ALT	Alteration (or change/ modification)
ALTID	Alteration Identification
AMP	Alteration Management Planning
AMP-FCO	Alteration Management Planning – Field Coordinating Office
APL	Allowance Parts List
AR	Alteration Request
ASC	Alteration Status Code
ASI	Automated Shore Interface
BG	Battle Group
BOM	Bill of Material
BOSS	Buy Our Spares Smart Program
C4I	Command, Control, Communications, Computer, Intelligence
C4ISR	Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance
CAGE	Contractor And Government Entity
CCB	Configuration Control Board
CCP	Container Consolidation Point
CDO	Command Duty Officer
CD-ROM	Compact Disk - Read Only Memory
CDM	Configuration Data Manager
CDMD-OA	Configuration Data Manager Database-Open Architecture
CFFC	Commander U.S. Fleet Forces Command
CHENG	Chief Engineer
CHET	Combatant Homeport Engineering Team
CINCLANTFLT	Commander-in-Chief U.S. Atlantic Fleet
CINCPACFLT	Commander-in-Chief U.S. Pacific Fleet
CIWS	Close In Weapons System
CLSSA	Cooperative Logistics Supply Support Arrangements
CM	Configuration Management
CMWDS	Counter Measure Wash Down System
CN	Change Notice
CNO	Chief of Naval Operations
CO	Commanding Officer
COH	Complex Overhaul
COMNAVSEASYSCOM	Commander Naval Sea Systems Command
COMPACFLT	Commander U.S. Pacific Fleet
CORN	
COSAL	Coordinated Shipboard Allowance List
COSIS	Care of Supplies in Storage
CPM	Centrally Provided Material
CPS	Collective Protection System
CRMS	Contingency Retention Munitions Stock

CRS	Contingency Retention Stock
CSIS	Central Secondary Item Stratification
CSOSS	Combat Systems Operational Sequencing System
CSTOM	Combat System Technical Operations Manual
DAASC	Defense Automatic Addressing System Center
DBR	Data Base Reconciliation
DDGOS	Deep Diving, General Overhaul Specifications
DDP	Demand Development Period
DC4ILO	Data Companion for Integrated Logistic Overall/Data Base Reconciliation
DEPRA	Defense Program for Redistribution of Assets
DIIP	Defense Inactive Item Program
DIOR	Director for Information Operations and Reports
DIRSSP	Director, Strategic Systems Programs
DLA	Defense Logistics Agency
DLAI	DLA Instruction
DLAR	DLA Regulation
DLMS	Defense Logistics Management System
DLMSO	Defense Logistics Management Standards Office
DLIS	Defense Logistics Information Service (Now FLIS)
DLSS	Defense Logistics Standard System
DMSMS	Diminishing Manufacturing Sources and Material Shortages
DMP	Depot Modernization Period
DPMA	Docking Phased Maintenance Availability
DoDAAD	Department of Defense Activity Address Directory ***(Parts I through III, References (a) through (c))***
DoDSASP	DoD Small Arms Serialization Program
DPIA	Docking Planned Incremental Availability
DPPG	Defense Packaging Policy Group
DRMO	Defense Reutilization and Marketing Office
DRMS	Defense Reutilization and Marketing Service
DSS-SOC	Deep Submarine System-Scope of Certification
DSRA	Docking Selected Restricted Availability
DSAA	Defense Security Assistance Agency
DTR	Defense Transportation Regulation
DUSD(L)	Deputy Under Secretary of Defense for Logistics
EA	Equipment Alteration
EC	Engineering Change
ECP	Engineering Change Proposal
EDFP	Engineering Data For Provisioning
EDI	Electronic Data Interchange
EDSRA	Extended Docking Selected Restricted Availability
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
EMP	Electromagnetic Pulse
EOA	End of Availability
EOH	Engineering Overhaul
EOI	End Of Installation
EOP	Engineering Operational Procedure
EOQ	Economic Order Quantity
EOSS	Engineering Operational Sequencing System
EPA	Environmental Protection Agency
ERMS	Economic Retention Munitions Stock
ERO	Engineering Refueling Overhaul
ERS	Economic Retention Stock
ERT	Engineering Review Team
ESD	Electrostatic Discharge
ESRA	Extended Selected Restricted Availability
EW	Electronic Warfare
FAA	Federal Aviation Administration

FAD	Force/Activity Designator
FC	Field Change
FCB	Field Change Bulletin
FCO	Field Coordinating Office
FLIS	Federal Logistics Information System
FLTCINC	Fleet Commander-in-Chief
FLTILOTEAM	Fleet Integrated Logistics Overhaul Team
FMP	Fleet Modernization Program
FMPMIS	FMP Management Information System
FMS	Foreign Military Sales
FSC	Federal Supply Classification
FSCAP	Flight Safety Critical Aircraft Part
FSCG	Federal Supply Classification Group
FTSCLANT	Fleet Technical Support Center Atlantic
FTSCPAC	Fleet Technical Support Center Pacific
GAITS	Global Alteration Installation Team Scheduling (Now NDE-NM)
GBL	Government Bill of Landing
GIDEP	Government Industry Data Exchange Program
GFE	Government Furnished Equipment
GFM	Government Furnished Material
GPETE	General Purpose Electronic Test Equipment
GSA	General Services Administration
GSO	General Specification for Overhaul
HCPM	Headquarters Centrally Provided Material
HAZCOM	Hazardous Communication
HAZMAT	Hazardous/Toxic Material
HME&O	Hull, Mechanical, Electrical, and Ordnance (equipment)
HSC	Hardware Systems Command
HW	Hazardous Waste
IA	Installing Activity
IAW	In Accordance With
IC	Interior Communications
ICE	Inventory Control Effectiveness
ICP	Inventory Control Point
ICS	Interim Contractor Support
IDIQ	Indefinite Delivery/Indefinite Quantity
IFF	Identification Friend or Foe
ILO	Integrated Logistics Overhaul
ILS	Integrated Logistics Support
IMA	Intermediate Maintenance Activity
IMC	Item Management Code
IMI	Intermediate Modulation Interference
IMM	Integrated Materiel Manager
INCO	Installation and Checkout
IPT	Integrated Product Team
IR	Installation Report
I&C	Installation And Checkout
I&S	Interchangeable and Substitutable
ISC	Installation Status Code
ISEA	In-Service Engineering Agent
ISRA	Incremental Selected Restricted Availability
ISS	Interim Supply Support
ITM	Index of Technical Manuals
JASMMM	Joint Aviation Supply and Maintenance Material Management
JCF	Justification/ Cost Form
JCN	Job Control Number
JETDS	Joint Electronics Type Designation
JFMM	Joint Fleet Maintenance Manual
JPIWG	Joint Physical Inventory Working Group

JSACG	Joint Small Arms Coordinating Group
LAN	Local Area Network
LANTFLTILO	Atlantic Fleet Integrated Logistics Overhaul
LAR	Liaison Action Request
LCM	Life Cycle Manager
LCRS	
LMARS	Logistics Metric Analysis Reporting System
LOGDESMAP	Logistics Data Element Standardization and Management Program (DoD) Procedures
LOR	Level of Repair
LOT	Life-of-Type
LRU	Lowest (or Line) Replaceable Unit
LSIS	Local Secondary Item Stratification
LSSC	Logistic Support Status Code
LUIT	Local-Level Unique Item Tracking
MAM	Maintenance Assistance Module
MAPAD	Military Assistance Program Address Directory
MCA	Materiel Control Activity
MACHALT	Machinery Alteration
MIA	Missing In Action
MIL-SPEC	Military Specification
MILSBILLS	Military Standard Billing System
MILSCAP	Military Standard Contract Administration Procedures
MILSTAMP	Military Standard Transportation and Movement Procedures
MILSTRAP	Military Standard Transaction Reporting and Accounting Procedures
MILSTRIP	Military Standard Requisitioning and Issue Procedures
MIP	Maintenance Index Page
MME	Military Mission Essentiality
MOA	Memorandum of Agreement
MPMP	Maintenance Program Master Plan
MRC	Maintenance Requirement Card
MRO	Materiel Release Order
MSD	Material Support Date
MSDS	Material Safety Data Sheet
MSR	Master Ship Repair
MSRA	Master Ship Repair Agreement
MTP	Master Test Plan
NATO	North Atlantic Treaty Organization
NAVAIR	Naval Air Systems Command
NAVICP	Naval Inventory Control Point
NAVOSH	Naval Occupational Safety and Health
NAVSEA	Naval Sea Systems Command
NDE-NM	NAVY Data Environment-Navy Modernization
NDI	Non-developmental Item
NDT	Non-Destructive Testing
NIMSR	Non-consumable Item Materiel Support Requests
NLT	No Later Than
NSA	Naval Supervising Activity
NSLC	Naval Sea Logistics Center
NSN	National Stock Number
NSRF	Naval Ship Repair Facility
NSTS	NAVSEA Technical Specification
NSV	Noise, Shock, and Vibration
NTCSS	Naval Tactical Command Support System
NUCALT	Nuclear Alteration
NUIT	National-level Unique Item Tracking
OASD (C4I)	Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence
OBRP	On Board Repair Part

OEM	Original Equipment Manufacturer
OL	Operating Level
O&MN	Operation and Maintenance, Navy
OPNAV	Operations Navy
ORDALT	Ordnance or Fire Control System Alteration
OSD	Office of the Secretary of Defense
OSHA	Occupational Safety and Health Administration
OSI	Operating Space Item
OSR	On Site Representative
OST	Order and Shipping Time
OSTL	Order and Shipping Time Level
PAL	Preliminary Allowance List
PARM	Participating Manager
PBM	Planning Board for Maintenance
PCA	Physical Configuration Audit
PCB	Poly Chlorinated Biphenyl
PCMS	Passive Counter Measure System
PEO	Program Executive Officer
PIA	Planned Incremental Availability
PICA	Primary Inventory Control Activity
PICO	Pre-Installation Checkout
PLT	Production Lead Time
PM	Program/ Project Manager
PMA	Phased Maintenance Availability
PMRP	Precious Metals Recovery Program
PMS	Planned Maintenance System
P/N	Part Number
POA&M	Plan of Actions and Milestones
POD	Port of Debarkation
POE	Port of Embarkation
POL	Petroleum, Oils, and Lubricants
POM	Program Objective Memorandum
PPE	Personal Protective Equipment
PPL	Provisioning Parts List
PR/DS	Potential Reutilization and/or Disposal Stock
PSAR	Preliminary SHIPALT Record
PSD	Program Support Data
PTD	Provisioning Technical Documentation
PY	Planning Yard
QA	Quality Assurance
QDR	Quality Deficiency Report
QR	Quality Review
QRA	Quick Reaction Alterations
QRC	Quick Reaction Capability
QRS	Quick Reaction Spares
QS	Quality System
QTY	Quantity
RADHAZ	Radiation Hazard
RAV	Restricted Availability
RBS	Readiness-Based Sparing
RCOH	Refueling Complex Overhaul
RCS	RADAR Cross Section
RDD	Required Delivery Date
RDT&E	Research, Development; Test, and Evaluation
REFDES	Reference Designation
RF	Radio Frequency
RFI	Radio Frequency Interference
RIC	Record Identification Code
RIN	Record Identification Number

RMAIS	Regional Maintenance Automated Information System
RMC	Regional Maintenance Command
RMMCO	Regional Maintenance and Modernization Coordination Office
ROH	Refueling Overhaul
RORO	Roll On – Roll Off
RRMS	Requirement Related Munitions Stock
RSC	Reason for Stockage Category
SAMIS	Ship Alteration Management Information System (Now FMPMIS)
SAR	Ship Alteration (SHIPALT) Record
SAS	
SCAT	Sub-Category Code
SCIB	Ship Characteristics Improvement Board
SCL	Standard Components List
SCLSIS	Ship Configuration and Logistic Support Information System
SCN	Shipbuilding and Conversion, Navy
SCN	Specification Change Notice
SCO	Service Craft Overhaul
SCPL	System Configuration Provisioning List
SECDEF	Secretary of Defense
SECNAV	Secretary of Navy
SEOC MOD	Submarine Engineered Operating Cycle Modernization
SF	Ships Force
SDR	Supply Discrepancy Report
SHAPEC	Ship Availability Planning and Engineering Center
SHF	Ship History File
SHIPALT	Ship Alteration, formal approved permanent change
SIB	Ship Information Book
SICA	Secondary Inventory Control Activity
SID	SHIPALT (Ship) Installation Drawing
SIGSEC	Signal Security (electromagnetic/ RF)
SMCA	Single Manager for Conventional Ammunition
SMMO	Ship Material Maintenance Officer
SM&R	Source, Maintenance, and Recoverability (code)
SNAP	Shipboard Non-tactical ADP Program
SOA	Start of Availability
SOEAPL	Summary of Effective APLs/AELs
SOVT	System Operation Verification Test
SOM	SUPSHIP Operations Manual
SPALT	Strategic Systems Program Alteration
SPAWAR	Space and Naval Warfare Systems Command
SPM	Ship Program Manager
SPR	Special Program Requirement
SPTE	Special Purpose Test Equipment
SRA	Selected Restricted Availability
SRD	Selected Record Drawing
SRF	Ship Repair Facility
SSCR	Shipboard Systems Certification Requirements
SSIR	Supply System Inventory Report
SSM	Ship's System Manual
SSR	Ship Selected Record
SSRD	Ship Selected Record Drawing
STO	System Test Officer
SUBMEPP	Submarine Maintenance, Engineering, Planning, and Procurement
SUBSAFE	Submarine Safety
SUPSHIP	Supervisor of Shipbuilding, Conversion, and Repair
SWT	Standard Work Template
SYSCOM	Systems Command
TAB	Training Aid Booklet
TAMS	Test & Monitoring System

TAV	Total Asset Visibility
TAV	Technical Availability
TCD	Target Completion Date
TCN	Transportation Control Number
TDP	Technical Data Package
TEMPALT	Temporary Alteration
TEMPEST	
TGI	Task Group Instruction
TLD	Thermal Luminescent Device
TM	Technical Manual
TMR	Total Munitions Requirements
TP	Test Plan
TRF	Trident Refit Facility
TUM	Tag-out User's Manual
TYCOM	Type Commander
TYCOMALT	Type Commander Alteration
UII	Unique Item Identifier
UIT	Unique Item Tracking
UITC	Unique Item Tracking Committee
UMMIPS	Uniform Materiel Movement and Issue Priority System
UND	Urgency of Need Designator
USCG	United States Coast Guard
USSOCOM	United States Special Operations Command
USW	Undersea Warfare
VR	Voyage Repair
WAF	Work Authorization Form
WHS	Washington Headquarters Services
WSF	Weapon Systems File

APPENDIX H

DEFINITIONS

1. Alteration. Any change in the hull, machinery, equipment, fittings, computer program and/or interface to external equipment, regardless of whether it involves a change in design, materials, number, location or relationship of an assemblies component parts whether it is undertaken separately from, incidental to or in conjunction with repairs.

2. Alteration Approval, Technical. A certification that all requirements necessary for successful alteration installation, operation and support have been met. Requirements include such items as SAR, SHIPALT Installation Drawings (SIDS), installation funding, removal and system restoration funding (TEMPALTs only), etc. The SPM is the technical approval authority for all Title K, K-P, D and F SHIPALTs, Surface Ship TEMPALTs and Equipment Alterations that may affect ship's power, weight or air conditioning requirements and all Alteration and Improvement (A&I) items. All other types of Equipment Alterations normally require approval of the Participating Manager (PARM).

3. Alteration Authorization. Authorization that is required prior to the accomplishment of any alteration. Chief of Naval Operations (CNO) authorization is required before military improvement type K-Alts may be installed. The Ship Program Manager (SPM) approves and either the Fleet Commander-in-Chief (FLTCINC) or Type Commander (TYCOM) may authorize or program Title D or F Ship Alteration (SHIPALTs) and Equipment Alterations. Alteration Equivalent to Repair (AERs) require that the designated system command, Program Executive Office (PEO) or SPM who exercises technical authority over the affected article approve them for accomplishment. All Command, Control, Communications, Computer, Intelligence (C4I) and Combat System Alterations and alterations impacting interoperability must be authorized in accordance with the D-30 process, by the FLTCINC, before they can be installed, regardless of the type of alteration.

4. Alteration Completion Report. A mandatory report certifying an alteration's accomplishment. The cover-page, report distribution requirements and report enclosures are contained in Appendix C to this specification. This report provides detailed information for use in process improvement design, Alteration Installation Team (AIT) performance measurement, alteration deficiency tracking, etc.

5. Alteration Equivalent to a Repair.

a. An Alteration Equivalent to Repair (AER) is a technical alteration, which has one or more of the following attributes:

(1) The use of different material, which has been approved for like or similar use, and such materials are available from standard stock.

(2) The replacement of obsolete, worn-out or damaged parts, assemblies, or equipment, requiring renewal by a more efficient design previously approved by the System Command (SYSCOM), Program Executive Office (PEO) or Ship Program Manager (SPM); providing such replacement does not cause a change to the existing system design and does not effect a change to the systems or equipment normally associated with the military characteristics of the ship.

(3) The strengthening of parts require repair or replacement in order to improve the reliability of the parts and unit provided that no other change in design is involved.

(4) Minor modifications involving no significant changes in design or functioning of equipment but considered essential to prevent recurrence of unsatisfactory conditions.

(5) The replacement of parts, assemblies, or equipment with like items of later or more efficient design where it can be demonstrated that the cost of installation and maintenance of the new parts, assemblies or components is less than the cost of maintaining the installed parts, assemblies, or components; and such replacement does not cause a change to the existing system design or impact any external interfaces to the system and does not effect a change to the system or equipment normally associated with the military characteristics of the ship.

Only the SYSCOM, PEO or SPM exercising technical control over the article, or the authority to whom such technical control has been delegated by that command, shall designate an alteration as an Alteration Equivalent to Repair (AER) and approve it for accomplishment.

b. An AER is approved for accomplishment by a Title "D" or "F" Ship Alteration (SHIPALT), Alteration and Improvement Item (A&I), Alteration Request (AR) or Letter AER depending on the scope and effects of the change. Such AERs must be approved by NAVSEA and funded for accomplishment by the Type Commander (TYCOM). A definition of each type of AER follows:

(1) Title "D" SHIPALT - A Title "D" SHIPALT is an "alteration equivalent to a repair" that is formally approved by NAVSEA in the form of a SHIPALT Record (SAR). It may require Centrally Provided Material (CPM) and is programmed and funded by the TYCOM. It does not require Headquarters Centrally Provided Material (HCPM). A Title "D" SHIPALT may specify whether it should be accomplished only by a depot level maintenance facility, or if it is within the capabilities of ship's force or Intermediate Maintenance Activity (IMA) to accomplish. A Title "D" SHIPALT shall be issued for all non-nuclear AERs which require changes to the equipment or system Integrated Logistics Support (ILS).

(2) Title "F" SHIPALT - A Title "F" SHIPALT is an "alteration equivalent to a repair" that is formally approved by NAVSEA in the form of a Ship Alteration Record (SAR). It does not require Centrally Provided Material (CPM) and is programmed and funded by the TYCOM. Ship's force or an Intermediate Maintenance Activity (IMA) can accomplish a Title "F" SHIPALT. It is usually limited to the equipment removals or relocations or minor wiring, piping or ducting modifications.

6. Alteration Installation Team (AIT). A unit (military, government activity or contractor) under the direction of an AIT Manager or designated agent (ISEA, military or government civilian) of the AIT Manager, that is trained and equipped to accomplish specific alterations on specified ships.

7. Alteration Installation Team (AIT) Activity or AIT Manager. The government activity, In Service Engineering Agent (ISEA), military person or government civilian tasked and funded by the AIT Sponsor to initiate, plan, coordinate, schedule, manage and oversee the successful

accomplishment of the alteration in accordance with Fleet Modernization Program (FMP) policy and procedures. The AIT Manager will coordinate with the NSA to ensure satisfactory completion of the ship alteration installation during CNO availabilities. This coordination does not relieve the AIT manager of any his/her responsibilities.

8. Alteration Installation Team On-site Installation Coordinator. The Alteration Installation Team (AIT) On-site Installation Coordinator is a government or military employee designated by, and acting with the authority of, the AIT Manager. The AIT On-site Installation Coordinator is responsible for the conduct of the entire alteration installation and will be the point-of-contact with the ship, AIT Manager and the NSA. The AIT On-site Installation Coordinator shall be knowledgeable of and responsible for AIT adherence to all invoked requirements including safety, quality plan, technical instructions and, when applicable, the SUPSHIP Operations Manual (SOM), Appendix 4-E or NSA/AIT Manager MOAs. AITs that do not have an assigned AIT On-site Installation Coordinator (or documented approval from the SPM that an AIT On-site Installation Coordinator is not required) shall not attempt to accomplish alterations to ships and will be denied access to ships.

9. Alteration Installation Team (AIT) Sponsor. The Systems Command Naval Air (NAVAIR), Naval Supply (NAVSUP), Naval Sea (NAVSEA) or Space and Naval Warfare (SPAWAR), Program Executive Officer (PEO), (including Participating Manager (PARM) or Ship Program Manager (SPM), Commander Pacific Fleet (COMPACFLT), Type Commander (TYCOM), Chief of Naval Operations (CNO) or other government activity that tasks and funds the AIT Manager/AIT.

10. Alteration, Mature. An alteration that has a reasonable expectation of successful installation, operation, maintenance and interoperability and is fully supported logistically. A mature alteration has a Justification Cost Form (JCF), Ship Alteration Record (SAR), Ship Alteration Installation Drawing (SIDs) and an approved Integrated Logistics Support (ILS) Certification Form.

11. Alteration, Permanent. Any logistically supported alteration, which is intended to remain on board the ship for more than 1 year or more than 1 operational deployment. These alterations are accomplished as Ship Alterations (SHIPALTs), Alterations Equivalent to Repair (AERs), Type Commander (TYCOM) alterations and other System Commands (SYSCOMs) and TYCOM alterations (e.g. Field Changes [FCs], Engineering Changes [ECs]).

12. Alteration Scheduling. The act of slating an alteration for installation on a given ship in a specific timeframe. Ship Program Manager (SPMs) schedule all alterations for installation during all Chief of Naval Operations (CNO) Availabilities via the SPM's Availability Advance Planning and Authorization Letters except for Title D and F alterations and Alteration Equivalent to Repair (AERs), which are scheduled by the Type Commander (TYCOM). TYCOMs schedule all alterations outside of the CNO Availability.

13. Alteration, Temporary (TEMPALT). Any alteration that provides given capabilities on a temporary basis (not to exceed one (1) year or one (1) operational deployment in duration). TEMPALTs support Research, Development, Test and Evaluation (RDT&E), exercise or mission requirements. TEMPALTs are reviewed, technically approved by the Ship Program Manager (SPM) and authorized and scheduled for accomplishment by the Type Commander

(TYCOM). All TEMPALTs impacting Battle Force interoperability or that are Command, Control, Communications, Computer, Intelligence (C4I) or Combat System related, need to be approved by the Fleet Commander-in-Chief (FLTCINC) in accordance with the D-30 process, before they can be installed. The Ship Program Manager (SPM) review considers logistic support, safety, technical adequacy, impact on ship stability, operational characteristics, damage control, ship structure, ship services, ship interfaces and habitability. Integrated Logistics Support (ILS) (final or preliminary) needs to be identified on the TEMPALT authorization letter and provided at time of installation. Alterations which are intended to be installed for a period in excess of one year or for more than one operational deployment are permanent changes to a ship's configuration and shall be accomplished accordingly (see "Alteration, Permanent"). After completion of testing requirements, mission or exercise support requirements or one year, whichever comes first, TEMPALTs must be removed and the ship restored to its previous configuration. The activity sponsoring the accomplishment of the TEMPALT shall be responsible for funding the removal of the TEMPALT and the restoration of the ship.

14. As-Built. Drawings prepared or developed by an Alteration Installation Team (AIT), approved by the Planning Yard (PY), used for installation, and revised to indicate the actual, as installed, configuration on the ship.

15. Battle Force Baseline Configuration Alterations. All Command, Control, Communications, Computer, Intelligence (C4I) and Combat System Alterations and alterations impacting Interoperability, that have been approved by the Fleet Commander-in-Chief (FLTCINC) for a specific ship in a specific Battle Force, in accordance with the D-30 process. These alterations should be technically approved by the Ship Program Manager (SPM) and coordinated with the Alteration Management Planning (AMP) Office, AMP Field Coordinating Offices (FCOs) and Naval Supervising Activities (NSAs), in accordance with this document.

16. Completion Report, Final. A message report from the ship receiving the alteration identifying that all discrepancies, noted in the Installation Completion Report, have been satisfactorily resolved. This message report is not required if the Installation Completion Report message also served as the Final Completion Report.

17. Completion Report, Installation. A mandatory message report from the ship receiving the alteration identifies the successful accomplishment of the alteration. This message will be drafted by the Alteration Installation Team (AIT) and provided to the ship for concurrence prior to the AIT's final departure. The ship will ensure that all known discrepancies associated with the alteration are fully documented, along with the activity responsible for resolution of each discrepancy and the estimated date of resolution. If no discrepancies exist, this report will also serve as the Final Completion Report.

18. Equipment Alteration. Any modification, other than a Ship Alteration (SHIPALT), to the configuration of an equipment or system (including embedded equipment, computer programs and expendable ordnance) after establishment of the product baseline. An Equipment Alteration involves a change in design, type of material, quantity, installed location, logistics, supportability or the relationship of the component parts of an assembly within the ship. Equipment Alterations include the addition, deletion, rework or replacement of parts, assemblies or equipment; or changes in assembly procedures. Alterations to associated

computer programs include the incorporation of different computer program versions and approved modifications or corrections to both operational test and maintenance programs. Equipment Alterations are initiated by approved Class I Engineering Change Proposals (ECPs). Equipment Alterations apply equally to changes installed in delivered systems and equipment, and changes installed in systems and equipment in production to identify differences from an established product baseline. Equipment Alterations may be initiated to correct a design defect, to change equipment operational capability, to eliminate safety hazards, to update obsolete components to change an external interface, or for any combination of these reasons. There are 6 types of Equipment Alterations:

a. Machinery Alteration (MACHALT). A planned change, modification or alteration of any in-service Hull, Mechanical or Electrical (HM&E) equipment when it has been determined by the MACHALT Configuration Control Board that the alteration or modification meets all of the following conditions:

(1) Can be accomplished without changing an interface external to the equipment or system.

(2) Are modifications made within the equipment boundary or are a direct replacement of the original equipment system.

(3) Can be accomplished without the ship being in an industrial activity.

(4) Will be accomplished individually and not conjunctive with a SHIPALT or other MACHALT.

If power, weight or air conditioning requirements are modified, the modification must be discussed with the appropriate Ship Program Manager (SPM), who will decide whether to proceed with the modification as a MACHALT or a SHIPALT.

b. Ordnance Alteration (ORDALT). An ORDALT is a change made to ordnance equipment or their associated computer programs by the addition, deletion, rework or replacement of parts, assemblies or equipment, or by a change in assembly procedures. Computer Program changes are any changes to maintenance or operational software.

c. Field Change (FC). A mechanical, electronic or electrical change, modification or alteration made to electronic equipment after delivery to the government or installation on-board ship. It includes software changes, which does not impact interfaces to other equipment within the ship, change the footprint, form or fit or change power, weight or air conditioning requirements. If power, weight or air conditioning requirements are modified, the modification must be discussed with the appropriate SPM, who will decide whether to proceed with the modification as a field change or SHIPALT. Field Changes are initiated and approved by the Systems Command and are implemented by Field Change Bulletin (FCB). Alteration Installation Team (AIT) or Ship's Force can accomplish FCs. For these specific types of alterations, the SPM shall be notified of the approved changes affecting their respective platforms. The SPM shall be periodically advised of installation status and shall be notified of any logistics upgrades, which have been completed as a result of the alteration.

d. Engineering Change (EC). A modification, usually to Under-Sea Warfare (USW) equipment or systems or other equipment groups as designated by the Systems Command, Program Manager (PM), Participating Manager (PARM) or Configuration Control Board (CCB).

e. Alteration & Improvement (A&I) Item. Tests, inspections, and minor alterations to submarines and submarine tenders. No significant Integrated Logistics Support (ILS) impact or significant material is required. A&I items are approved by Naval Sea Systems Command (NAVSEA) and authorized by the Type Commander (TYCOM).

f. Software delivery alteration. Any Operational Computer Program change that is not an ORDALT or FC. These programs must satisfy all platform and system certification requirements before they can be installed, or must have interim authority to be used if they have not passed appropriate software certification criteria. Provisioning Parts List (PPL) certification is required if the software is to run on the IT-21 Local Area Network (LAN).

19. Hardware Systems Commands (HSC). Commander Naval Sea Systems Command (COMNAVSEASYSCOM) is the lead hardware systems commander for the life cycle management of ships. Commander, Naval Air Systems Command and Commander, Space and Naval Warfare Systems Command are also hardware systems commands. They must coordinate with COMNAVSEASYSCOM in the development of technical requirements essential to performing quality maintenance. The HSC provides Naval Supply (NAVSUP) with sufficient, accurate, up-to-date technical information to ensure consistent procurement and control of material that fulfills all technical requirements.

20. Industrial Activity (IA). An IA is an activity capable of performing all aspects of work on ships. These activities generally include Naval Bases, Naval Ship Repair Facilities (NSRFs), Fleet Maintenance Activities, Trident Refit Facilities (TRFs), public (Naval) shipyards, and private shipyards, which hold Agreements for Boat Repair (ABR) or Master Ship Repair Agreements (MSRAs) in accordance with the Naval Sea Systems Command (NAVSEA) Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP), USN Operations Manual.

21. Integrated Logistics Support (ILS) Certification Forms. The ILS forms specified in Section 8-1.3.2 and Section 8 Exhibit II of the Fleet Modernization Program (FMP) Manual in which the Ship Program Manager (SPM) identifies all ILS elements that are required for a specific alteration. ILS Certification Forms may be general (applicable to all alteration installations) or conditional (applicable to only a specific alteration installation).

22. Maintenance Program Master Plan (MPMP). The MPMP provides a general overview of the Program Executive Office (PEO's) and/or Ship Program Manager's (SPM's) maintenance plan for the ship class. It specifies key elements such as depot-level availability intervals and duration, frequency of intermediate-level availabilities and any special maintenance, maintenance support or infrastructure requirements.

23. Naval Supervising Activity (NSA). The single Naval Activity charged with the responsibility of oversight of work being accomplished on U.S. Naval ships during any type of availability. The NSA has overall responsibility for integrating the planning and execution of work on Naval Ships by all involved activities. Implementation of an integrated planning, schedule, work control, and ship certification process is essential to a project's success. Effective coordination

and oversight must be provided to ensure that all work performed during any availability will allow the NSA to meet the overall project schedule, cost, and quality requirements. NSAs have the authority and responsibility to preclude and/or stop AITs from performing work when they are found to be in non-compliance with this or other invoked specifications. NSAs shall notify the applicable program office and NAVSEA 04 of any AIT work suspension/cancellation.

24. Quality System. A documented set of rules and procedures, which will assure that all provided supplies and services conform to a prescribed level of quality. For alterations accomplished on ships, the minimum prescribed level of quality shall be that specified in MSRAs and Agreements for Boat Repair (ABRs) as outlined in Naval Sea Systems Command (NAVSEA) Standard Item 009-04. (See Appendix D)

25. Quick reaction alteration. Alterations that are driven by an emergent requirement that requires rapid entry of high priority Secretary of Defense (SECDEF), Secretary of the Navy (SECNAV), Chief of Naval Operations (CNO), national interest items or vital technical changes into Fleet Modernization Program (FMP) process. Quick reaction alterations necessitate rapid Ship Alteration (SHIPALT) development and close coordination between Operations Navy (OPNAV) Resource Sponsors and the Hardware System Command (HSCs).

26. Red Lines or Red Lined Installation Drawings. Planning Yard (PY)-approved Ship Alteration Installation Drawings (SIDs) that have been revised manually (preferably in red ink) by the Alteration Installation Team (AIT) to reflect all approved deviations and variances of the completed installation.

27. Regional Maintenance and Modernization Coordination Office (RMMCO). A Regional Maintenance Center-aligned; Fleet-chartered organization that serves as the primary point of entry for all waterfront related alteration and maintenance activities. The RMMCO will serve as the "gate keeping" office for Alteration Installation Team (AIT) check-in and check-out, where applicable. The RMMCO's AIT Check-In/Check-Out application located at https://rmmco.navy.mil provides the AIT On-site Installation Coordinator/AIT Leader with a means to initiate the check-in procedures required for the installation of an alteration aboard ship. It also provides a means to measure performance of these installations.

28. Scheduled/Non-Scheduled Chief of Naval Operations (CNO) Availabilities. CNO Scheduled availability is a depot level maintenance window that is scheduled by CNO in accordance with the Maintenance Program Master Plan (MPMP) for the ship.

a. CNO Scheduled Maintenance Availabilities greater than 6 months in duration are:

Overhaul. Availability scheduled for accomplishment of industrial maintenance and modernization. Types of Availabilities include:

Regular Overhaul
Complex Overhaul (COH)
Engineered Overhaul (EOH)
Refueling Overhaul (ROH)
Refueling Complex Overhaul (RCOH)

Engineered Refueling Overhaul (ERO)

Other Availabilities. Availability scheduled primarily for industrial maintenance and installation of major, high priority alterations. Types of these include:

Depot Modernization Period (DMP)
Planned Incremental Availability (PIA)
Docking Planned Incremental Availability (DPIA)

b. CNO scheduled maintenance availabilities less than six months in duration are short, labor-intensive availabilities scheduled for accomplishment of industrial maintenance and modernization. Types of these availabilities include:

Selected Restricted Availability (SRA)
Docking SRA (DSRA)
Phased Maintenance Availability (PMA)
Docking Phased Maintenance Availability (DPMA)
Service Craft Overhaul (SCO)
Extended SRA (ESRA)
Extended Docking SRA (EDSRA)
Incremental SRA (ISRA)

c. Non-CNO Scheduled Availability. Availability that is not scheduled by CNO. The CFFC/TYCOMs assign and schedule Restricted Availabilities (RAVs), Technical Availabilities (TAVs) and Voyage Repair (VR) Availabilities.

29. Ship Alteration (SHIPALT). Approved permanent change to the configuration of a ship, which is documented as a Ship Alteration Record (SAR), and implemented through the Fleet Modernization Program (FMP) Process. SHIPALTs are classified by the following titles:

a. Title “D” SHIPALT. A Title "D” SHIPALT is an "alteration equivalent to a repair" that is formally approved by Naval Sea Systems Command (NAVSEA) in the form of a SAR. It may require Centrally Provided Material (CPM) and is programmed and funded by the Type Commander (TYCOM). It does not require Headquarters Centrally Provided Material (HCPM). A Title "D" SHIPALT may specify whether it should be accomplished only by a depot level maintenance facility, or if it is within the capabilities of ship's force or Intermediate Maintenance Activity (IMA) to accomplish. A Title "D" SHIPALT shall be issued for all non-nuclear Alteration Equivalent to Repair (AERs) that require changes to the equipment or system Integrated Logistics Support (ILS).

b. Title “F” SHIPALT. A Title "F" SHIPALT is an "alteration equivalent to a repair" that is formally approved by NAVSEA in the form of a SAR. It does not require CPM and is programmed and funded by the TYCOM. Ship’s force or an Intermediate Maintenance Activity (IMA) can accomplish a Title “F” SHIPALT. It is usually limited to the equipment removals or relocations or minor wiring, piping or ducting modifications.

c. Title “K” SHIPALT. A permanent alteration to provide a military characteristic, upgrade existing systems or provide additional capability not previously held by a ship, which

affects configuration controlled areas or systems of a ship or which otherwise requires the installation of HCPM. These SHIPALTs are approved for development and authorized for accomplishment by the Chief of Naval Operations (CNO) (military improvements) or the Hardware System Command (HSCs) (non-military improvements). Commander Naval Sea Systems Command (COMNAVSEASYSCOM) provides the technical approval for Title "K" SHIPALTs.

d. Title "K-P" SHIPALT. A Title "K" SHIPALT that is within forces afloat or Alteration Installation Team (AIT) capability for accomplishment and for which required special program and centrally provided materials are provided as a package by the HSC.

30. Ship's Program Manager (SPM). The Naval Sea Systems Command (NAVSEA) organization responsible for management of ships' acquisition, overhauls, or repairs.

31. Type Commander Alterations (TYCOMALTs). Type Commander (TYCOMs) are authorized to approve temporary changes to compartments of ships, other than nuclear support facilities or compartments adjacent to ship nuclear support facilities, through use of TYCOMALTs subject to the requirements laid out in OPNAVINST 4720.2 (Series) and CINCLANTFLT/CINCPACFLT 4790.3 (Series). The definition of a TYCOMALT is currently under review and may be changed in the next revision of the Fleet Modernization Program (FMP) Manual.

32. Work Authorization Form (WAF). A WAF 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. Additional information is contained in CINCLANTFLT/CINCPACFLT 4790.3 (Series) (Joint Fleet Maintenance Manual) Volume IV, Part I, Chapter 21.