



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
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WASHINGTON NAVY YARD, DC 20376-0001

IN REPLY REFER TO
NAVSEAINST 4720.14D
Ser 392D/0090
5 MAR 04

NAVSEA INSTRUCTION 4720.14D

From: Commander, Naval Sea Systems Command

Subj: TEMPORARY ALTERATIONS TO ACTIVE FLEET SUBMARINES

- Ref:**
- (a) NAVSEAINST C9210.4A; Changes, Repair and Maintenance to Nuclear Powered Ships
 - (b) NAVSEA SL720-AA-MAN-010; Fleet Modernization Program Management and Operations Manual
 - (c) NAVSEAINST 4130.12A; Configuration Management Policy and Guidance
 - (d) NAVSEA SS800-AG-MAN-010/P-9290; System Certification Procedures and Criteria Manual for Deep Submergence Systems (A)
 - (e) NAVSEAINST 4720.11C; Shipboard Installations and Modifications Performed by Alteration Installation Teams
 - (f) NAVSEA S9070-AA-MME-010/SSN/SSBN; Guidance Manual for Submarine Temporary Alterations
 - (g) COMSUBLANT/COMSUBPACINST 4131.1B; Submarine Combat Systems Configuration Control
 - (h) NAVSEA 0924-062-0010; Submarine Safety (SUBSAFE) Requirements Manual
 - (i) NAVSEANOTE 5000; Activities Authorized to Perform SUBSAFE Work
 - (j) CINCLANTFLT/CINCPACFLTINST 4790.3; Joint Fleet Maintenance Manual
 - (k) NAVSEA 0902-018-2010; General Overhaul Specifications for Deep Diving SSBN/SSN Submarines
 - (l) NAVSEA 0989-037-2000; Commissioned Submarine General Reactor Plant Overhaul and Repair Specification

1. Purpose. To state policy, procedures, and responsibilities for the technical design approval and configuration control of Temporary Alterations (TEMPALTs).

2. Cancellation. NAVSEAINST 4720.14C of 28 Jan 2003. (R)

3. Scope. This instruction applies to all TEMPALTs proposed for accomplishment on active submarines under the cognizance of NAVSEA. (R)

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4. Exclusions. This instruction does not apply to the following:

a. Reactor Plant Systems and Equipment. Changes to reactor plant systems and equipment as defined in reference (a).

b. Strategic Systems Programs Alterations (SPALTs). SPALTs affecting only the configurations or capabilities of systems and equipment under the cognizance of the Strategic Systems Programs (SSP). However, temporary relocations and installations or removals of SSP-cognizant equipment or systems are covered by this instruction.

c. SHIPALTs/ORDALTs/Design Changes. Permanent changes designated modernization actions as defined in references (b) and (c).

d. Field Changes. Alterations accomplished as field or service changes, Engineering Change Proposals (ECPs), etc., that affect only the internals of a system or equipment and which have no impact on the ship or any other system or equipment.

R) e. Noncombatants. Alterations accomplished on submersibles not under the cognizance of the Naval Sea Systems Command (NAVSEA) except as requested by Chief of Naval Operations (CNO), the applicable Type Commander (TYCOM), or the applicable Ship Acquisition Project Manager (SHAPM).

f. Availability Testing. Temporary alterations performed as part of dry-dock or dockside testing during the overhauls and other availabilities.

g. Test Gauges. Temporary installation of mechanical gauges which do not enter a SUBSAFE boundary and which connect to fittings designed and installed for test equipment attachment. The use of test gauge fittings for other than test equipment attachment will be approved by NAVSEA before usage.

A) h. Submersibles under the cognizance of NAVSEA that are subject to certification by reference (d).

5. Background

a. Navy regulations and implementing directives clearly delegate responsibility to NAVSEA for the technical approval and configuration control of alterations to ships. Within NAVSEA Headquarters, references (b), (c), and (e) assign responsibility

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for technical approval and configuration control of alterations on active fleet ships.

b. TEMPALTs are accomplished on submarines to provide short-term solutions of operational problems or situations affecting safety, mission objectives, or test and evaluation of proposed designs. Most of these alterations fall within one of the following categories:

(1) At-sea testing and evaluation, i.e., including sea trials, fast cruise, sonar certification, weapon or missile system certification trials, and Operational Evaluation/Technical Evaluation (OPEVAL/TECHEVAL)

Research and development support

Scientific Mission Support

Tactical Mission & Battle Group support

(5) Exercise support

c. The following time requirement guidelines should be followed for the length of time TEMPALTs are to remain onboard. The maximum limit is 14 months without TYCOM validation of requirement and specific NAVSEA concurrence:

At-sea test and evaluation - 6 months

(2) Research & Development - 6 months

(3) Scientific Mission - 6 months

Tactical Missions/Battle Group - 14 months

Exercise - 6 months

d. Certain circumstances require special categories of TEMPALTs to be designated as Operational Alterations (OPALTs). There are two categories of OPALTs: (1) TEMPALTs used in advance of Ship Alterations (SHIPALTs). These OPALTs have the same requirements as SHIPALTs; i.e., complete logistics support, entered on baseline configuration drawings, Planning Yard review, training, etc., but will not replace the classwide SHIPALT; and, (2) installation of equipment for a duration greater than 14 months to support long term at-sea evaluations or special mission requirements for the fleet. These OPALTs shall provide adequate Integrated Logistic Support (ILS) in

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accordance with references (b), (f) and (g) including approved NAVSEA drawings or software certification, preliminary technical manuals and Maintenance Requirement Cards (MRCs), revised Allowance Parts Lists (APLs), updated On-Board Repair Parts (OBRPs), training, etc. Configuration change form (OPNAV 4790CK) must be submitted for all OPALTS per reference (f).

- R) e. NAVSEA PMS392 is cognizant of TEMPALTS affecting operational attack submarines (SSNs) and fleet ballistic missile submarines (SSBNs). PMS 395 is cognizant of TEMPALTS affecting SSN683, AGSS 555, and NR-1.

6. Policy

a. TEMPALTS will not be accomplished on active submarines unless detailed design packages have been reviewed and approved by NAVSEA for the specific submarine or class of submarines designated to receive the alterations.

b. All alteration design packages will be prepared per reference (f). TEMPALTS impacting SUBSAFE boundaries will meet the requirements of the SUBSAFE Manual, reference (h). SUBSAFE work shall only be performed and certified by qualified, authorized activities identified in reference (i). TEMPALT packages submitted to NAVSEA for approval shall identify the installing and certifying activities designated to accomplish the SUBSAFE work. Note that reference (i) requires contracting through the local Supervisor of Shipbuilding whenever a private shipbuilder is used for SUBSAFE TEMPALT installations in order to provide Quality Assurance (QA) of SUBSAFE work. URO/MRCs and associated selected record data must be updated to account for changes to ship configuration as a result of a TEMPALT installation that would warrant periodic inspections; for example, added hull penetration for Electrical Hull Fitting (EHF). URO/MRC 029, Access to Vital Equipment, must be accomplished by Forces Afloat in the vicinity affected by the TEMPALT after each installation.

c. Alteration design will be reviewed for design adequacy as given in reference (f); e.g., safety, impact on ship stability, operational characteristics, ship structure, shock requirements (as considered applicable by NAVSEA), ship services and ship interfaces, electrical system interfaces, habitability, atmosphere control, ship silencing, arrangements, and impact on stowage. NAVSEA 08 shall be consulted in all matters relating to or affecting the nuclear propulsion plant. Strategic Systems Programs (SSP) will be consulted in all matters relating to or

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affecting the Strategic Weapons System (SWS) (e.g., navigation, fire control, launcher, and associated support systems). The Planning Yard will review alteration design packages as directed by NAVSEA.

d. TEMPALT design packages may be prepared and submitted on a class or multiship basis, especially when alterations are planned for the duration of specific deployments on multiple ships. Guidelines for development of multiship design packages are as follows:

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(1) Where major configuration differences exist within the group of applicable ships, shipchecks shall be performed on one of each ship configuration type. Separate views depicting configuration differences for the applicable ships shall be provided in the class or multiship TEMPALT Data Package submitted for approval. Once alteration design is approved for a group of ships, alteration installations may be authorized by the TYCOM on any ship for which the design has been approved after verification of applicability by shipcheck. If, during verification of applicability of an approved class TEMPALT to an applicable hull, variations are found to be required, revision(s) to the original design package shall be submitted and approved by NAVSEA prior to alteration installation.

(2) Subsequent requests for extension of applicability of a multiship design package to other ships of its class shall include revisions to the original design package to reflect increased ship applicability.

e. For those TEMPALTs approved as classwide alterations in advance of a SHIPALT, once the SHIPALT is approved and issued, the applicable TEMPALT is considered superseded. The TEMPALT will not be authorized for further installations.

f. Where possible, alteration design packages will utilize standard concepts such as permanent or temporary rack approvals as class designs.

g. For projected accomplishment of TEMPALTs on submarines, the Sponsoring Activity will coordinate design requirements with NAVSEA early in the planning process. The Sponsoring Activity is responsible for installations and removals. The Sponsoring Activity must ensure that the project or program funding profile for all TEMPALTs includes the preparation of detailed installation design packages, funding of unique studies incidental to the review, logistics, TEMPALT installation and

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the restoration of the ship to its original configuration upon removal. All funding must be in place prior to TEMPALT installation. The Sponsoring Activity also is responsible for identifying installation test and evaluation requirements. Authorization to install any TEMPALT on a submarine rests solely with the applicable TYCOM (COMSUBLANT or COMSUBPAC), who shall consider the cumulative impact of all TEMPALTs installed, including weight and moment impact for each underway. NAVSEA will assist the TYCOM upon request by calculating the cumulative weight and moment impacts of all alterations and weight changes identified by the TYCOM. The TYCOMs will maintain a system of accountability to track the installation and removal of TEMPALTs. NAVSEA technical design approval is neither authorization to accomplish an alteration nor certification of desirability of accomplishment. NAVSEA approval is for adequacy of alteration design only. All TEMPALTs must be removed prior to depot availability unless specifically approved and authorized to remain in place by NAVSEA and TYCOM respectively.

h. In all cases, NAVSEA and TYCOMs will be notified by the Sponsoring/Installing Activity by naval message when any temporary installation is accomplished on any active submarine and when any temporary installation is relocated or removed. As a minimum, installation messages will contain the TEMPALT's number and title, ship's name and hull number, date of installation, any preliminary ILS provided, proposed removal date, the Installing Activity's point of contact and will reference the NAVSEA approval and TYCOM's installation authorization. In addition, the installation message will include a statement certifying that the installation was accomplished in accordance with the technical data package; and any discrepancies were adjudicated in accordance with references (j) or (k), as applicable. If training is required, the installation message will also include names of ship's personnel trained to operate the TEMPALT equipment. This requirement applies each time the alteration is made on the same ship in the case of repeated alteration accomplishments. Removal messages will contain the TEMPALT's number and title, ship's name and hull number, date of removal, the Removal Activity's point of contact and a statement certifying that the ship was restored to original configuration or any outstanding related item preventing restoration.

7 Procedures

a. All requests for TEMPALT design approval will be prepared and submitted as follows:

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(1) Requests for alteration design approval will be submitted as technical data packages. The package will consist of a TEMPALT baseline specification, alteration stress calculations, and all required alteration drawings (including reference documentation), all prepared per reference (f) with a forwarding letter. As a minimum, forwarding letters will contain a brief description of the alteration, purpose of the installation (i.e. Test, R&D, Scientific, Tactical or Exercise), requested approval date, and planned installation time frame. The package will be submitted as a single, finished, complete set unless prior written authorization has been granted by NAVSEA for incremental submission, or unless the alteration requires conceptual approval per paragraph 7.a.(3). In the latter case, NAVSEA conceptual approval of the proposed TEMPALT shall be obtained prior to preparation and submittal of the technical data packages. In support of OPALTs, an ILS CERT form must be included as part of the technical data package to address specific logistic impacts, points of contact and estimated completion dates in accordance with reference (b). Distribution of all technical data packages will be as follows:

(a) For attack submarines (SSN688 and SSN21 Class) the original forwarding letter and an electronic copy of the entire technical data package will be sent to:

Supervisor of Shipbuilding,
Conversion, and Repair, USN (SUPSHIPNN)
Attn: Code 270
4101 Washington Ave. Bldg 2
Newport News, VA 23607-2770

(b) For Submarine NR-1 the original forwarding letter and an electronic copy of the entire technical data package will be sent to:

General Dynamics Electric Boat Division
Attn: Dept. 472
75 Eastern Point Road
Groton, CT 06340-4989

(c) For USS DOLPHIN (AGSS 555) the original forwarding letter and an electronic copy of the entire technical data package will be sent to:

Portsmouth Naval Shipyard
Attn: Code 205
Portsmouth, NH 03804-5000

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R) (d) For all other TEMPALTs, the forwarding letter and technical data package will be sent to the cognizant program office (e.g. PMS395, PMS398, PMS350, PMS392D2, PMS450).

(e) One copy of the forwarding letter without the technical data package will be sent to:

Applicable TYCOM(s) (CSL - N4072)
(CSP - N45)

Applicable Squadron(s), Group(s), etc
Applicable Ship(s)

Other interested activities, as required

(2) To allow adequate time for NAVSEA technical review, the following guidelines are provided:

(a) For all previously approved alterations with minor revisions not affecting hull attachments, SUBSAFE, or special weapons loading, handling, or launching procedures, NAVSEA will receive the complete revised technical data package not less than 10 working days prior to the requested approval date.

(b) For all other alterations not requiring hull attachment (no hydrodynamics or SUBSAFE impact) or special weapons loading, handling, or launching approval, NAVSEA will receive the complete technical data package not less than 20 working days prior to the requested approval date.

(c) For all alterations requiring hull attachment (hydrodynamics and/or SUBSAFE impact) or special weapons loading, handling, or launching approval, and all OPALTs, NAVSEA will receive the complete technical data package not less than 40 working days prior to the requested approval date.

(3) Alterations which are to be located within zones described by enclosure (2) of reference (a), or which will interface with, enter into, modify, relocate, or remove any reactor plant system or equipment as defined by reference (a), must be submitted to Submarine Reactor Plant Planning Yard (RPPY) for technical concurrence when appropriate, and to NAVSEA for conceptual and technical approval when required by Section 9020-0-c of reference (1). A request for conceptual approval of the temporary alteration will be prepared in accordance with reference (f) prior to performing detailed design work. PMS392 will coordinate with SEA 08 for review and approval of both the

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conceptual approval request and the technical data package approval request.

(4) Any interface with, entry into, modification, relocation, or removal of any equipment or system under the cognizance of SSP will be approved by SSP prior to the commencement of alteration design. The approval document will be referenced in the alteration design specification and on all applicable drawings, and a copy of the approval document will be submitted in the technical data package as part of the support or reference documentation.

b. Upon receipt of NAVSEA technical design approval, the design activity will provide a digital copy of the technical data package to NAVSEA, SUPSHIPNN, and the Planning Yard. A hard copy will also be provided to the appropriate TYCOM(s).

c. Concurrent with alteration accomplishment, the Sponsor/Installing Activity will provide two hard copies and one digital copy of the approved technical data package to the ship. Ship's copies will be delivered each time the alteration is accomplished. Also, one hard copy of the approved technical data package will be delivered to each TRIDENT Refit Facility for all SSBN 726 Class TEMPALT installations, and one hard copy of each SSBN 726 Class Command and Control System (CCS) approved technical data package will be delivered to the Naval Undersea Warfare Center (NUWC), Code 22.

d. Memorandum of Agreement (MOA) with the Squadron, Intermediate Maintenance Activity (IMA), ship and other applicable organizations shall be established by the sponsor/installing activity for all TEMPALT installations and removals. All work will be performed in accordance with reference (j).

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8. Responsibilities

a. Sponsoring Activities

(1) Identify those TEMPALTs which support a special mission for the duration of a specific deployment and which are being considered for class and multiship approval.

(2) Coordinate design requirements with NAVSEA early in the planning process for the projected accomplishment of TEMPALTs on submarines.

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(3) Provide project or program funding and coordination for all phases of TEMPALT development, including detailed design packages, installation, storage of SUBSAFE material that is to be retained for future installation within the SUBSAFE boundary, and restoration of the ship to its original configuration.

(4) Identify installation test and evaluation requirements of all TEMPALTs.

(5) Ensure that provisions have been made for the restoration of the ship(s) to original pre-TEMPALT configuration after removal of TEMPALTs.

(6) Ensure that a copy of the NAVSEA approval letter is forwarded to the Installing Activity (and cognizant Supervisor of Shipbuilding if applicable) prior to the start of installation.

(7) Identify installing and certifying activities within TEMPALT packages that include SUBSAFE work when submitted to NAVSEA for approval.

(8) Ensure that the equipment is inspected prior to each use. This inspection shall verify that the TEMPALT has not been modified (hardware or software) from the approved design and that the hardware condition is suitable for continued use (i.e. no missing parts, no structural issues such as cracks, no safety hazards such as deficient insulation, etc.).

(9) Prepare alteration design packages in accordance with reference (f) and this instruction. Design packages will include a list of items/equipment requiring restoration and reference appropriate class drawings to accomplish the restoration.

(10) Ensure Installing Activity nonconformances are adjudicated in accordance with departure from specification procedures of reference (j).

(11) Ensure the Installing Activity has established a MOA for all work to be performed and accomplish all work in accordance with reference (j) and this instruction.

(12) Ensure the Installing Activity notifies the cognizant program office, applicable TYCOM and Sponsoring Activity by naval message whenever a TEMPALT has been accomplished, relocated, or removed.

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(13) Provide a copy of the approved technical data package upon completion of initial installation to NAVSEA and TYCOM(s).

(14) Ensure the Installing Activity provides copies of the approved technical data package to the ship each time the alteration is accomplished.

(15) The sponsoring activity has full responsibility for any ILS that may be required for a TEMPALT.

b. Installation Activities

(1) For the purpose of adjudicating nonconformance, TEMPALT drawings are considered non-deviation drawings. In cases where the approved TEMPALT design must be modified to suit a particular installation, the required nonconformance to TEMPALT design will be adjudicated by the Installing Activity as follows:

(a) If the Installing Activity is a shipyard or a private shipbuilder, nonconformance shall be adjudicated in accordance with Section 9020-1-q of reference (k).

(b) For all other Installing Activities, nonconformance shall be adjudicated in accordance with departure from specification procedures of reference (j).

(2) Ensure that the design documentation for TEMPALTs has been approved by NAVSEA prior to the start of shipboard work in accordance with the policy and procedures of this instruction.

(3) Ensure that authorization has been obtained from the applicable TYCOM prior to installation.

(4) Establish a MOA for all work to be performed and accomplish all work in accordance with reference (j) and this instruction.

(5) Ensure URO/MRC 029, Access to Vital Equipment, is accomplished by Forces Afloat in the vicinity affected by the TEMPALT after each installation.

(6) Notify NAVSEA (PMS392 or PMS395), applicable TYCOM, and Sponsoring Activity by naval message whenever a TEMPALT has been accomplished, relocated, or removed.

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(7) Provide copies of the approved technical data package to the ship each time the alteration is accomplished

c. NAVSEA or Designated Activity

(1) Provide an adequate and responsive engineering review for conceptual and technical approval.

(2) Ensure that TEMPALTs are technically satisfactory (e.g., SUBSAFE, weight and moment, stability, missile hazard, access to and operation of vital equipment, etc.).

(3) Ensure that OPALT submittals provide for the same support as SHIPALTs.

(4) Coordinate with Naval Reactors (NAVSEA 08) on the technical adequacy of proposed TEMPALTs as required.

(5) Identify in the approval letters approved installation duration when different than the standard duration given above and all changes to ship's characteristics or limitations (e.g. depth limits).

(6) Ensure that TEMPALTs are addressed within the current NAVSEA 07/TYCOM audit structure.

d. Strategic Systems Programs (SSP). Provide technical approval of TEMPALT interfaces with cognizant equipment and systems.

e. TYCOMs

(1) Authorize installation of only those TEMPALTs, which have been approved for accomplishment per this instruction

(2) For installing activities (other than naval shipyards and private shipbuilders) adjudicate non-conformance to approved TEMPALT design in accordance with departure from specification procedures or reference (j).

(3) Maintain administrative control and configuration status accounting relating to installation and removal of TEMPALTs.

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(4) Notify CNO when authorizing installation of TEMPALTs which impact ship mission or operational capabilities.

(5) Assess the cumulative weight and moment impacts of all weight changes (TEMPALTs only) for each underway.

(6) Accomplish removal of TEMPALTs within the required installation duration. A T&E, R&D, Scientific or Exercise TEMPALT for which the TYCOM determines it is necessary to leave it installed for up to 14 months shall be reviewed by the TYCOM to ensure that the extension does not change the use category from a benign use to a Tactical Mission or Battle Group support use. If the TEMPALT will now remain installed during a Tactical or Battle Group Support Mission, it shall be resubmitted to NAVSEA for approval. All TEMPALTs with installations to be extended beyond 14 months shall be resubmitted to NAVSEA for approval.

f. Planning Yard

(1) Review proposed TEMPALTs and OPALTs for compliance with reference (f) as directed by NAVSEA and assist as requested to support analysis of the cumulative weight effect of multiple TEMPALTs prior to each underway.

(2) Maximize use of shipchecks, photos, overlays, 3D models and mockups where appropriate to validate that installed systems are satisfactory and not adversely impacted by the proposed installations.

(3) Ensure that OPALTs and all other TEMPALTs with requested installation durations in excess of 6 months do not interfere with configuration management of planned modernization actions.

(4) For SSBN 726 Class and SSN 21 Classes, TEMPALTs which affect engine room arrangements will be installed and reviewed in the propulsion plant mockup prior to final design approval on a case basis as directed by NAVSEA.

g. Supervisor of Shipbuilding

(1) Provide management coordination and oversight of work including, but not limited to, contracts, engineering, in-process surveillance, and quality assurance for TEMPALT installations accomplished by private shipbuilders.

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- A) (2) Monitor the certification status of SUBSAFE boundaries worked by private shipbuilders during TEMPALT installations. Report on the certification continuity status subsequent to completion of TEMPALT installations in accordance with reference (h).



John H. James Jr.

By direction

Distribution:

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