



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
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NAVSEAINST 4720.14B
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3 May 1999

NAVSEA INSTRUCTION 4720.14B

From: Commander, Naval Sea Systems Command

Subj: TEMPORARY ALTERATIONS TO ACTIVE FLEET SUBMARINES

- Ref:
- (a) NAVSEAINST C9210.4; 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 Guidelines (R)
 - (d) NAVSEAINST 4720.11; Shipboard Installations and Modifications Performed by Alteration Installation Teams
 - (e) NAVSEA S9070-AA-MME-010/SSN/SSBN; Guidance Manual for Submarine Temporary Alterations
 - (f) COMSUBLANT/COMSUBPACINST 4131.1B; Submarine Combat Systems Configuration Control (R)
 - (g) NAVSEA 0924-062-0010; Submarine Safety (SUBSAFE) Requirements Manual
 - (h) NAVSEANOTE 5000; Identification of Activities Authorized to Perform SUBSAFE Work (A)
 - (i) CINCLANTFLT/CINCPACFLTINST 4790.3; Joint Fleet Maintenance Manual (R)
 - (j) NAVSEA 0902-018-2010; General Overhaul Specifications for Deep Diving SSBN/SSN Submarines (A)
 - (k) NAVSEA 0989-037-2000; Commissioned 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). (R)

2. Cancellation. NAVSEAINST 4720.14A of 30 October 1992.

3. Scope. This instruction applies to all TEMPALTs proposed for accomplishment on active fleet combatant 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.

A) e. Noncombatants. Alterations accomplished on submarines or 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). Also, alterations accomplished on noncombatant submersibles under the cognizance of NAVSEA PMS395.

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.

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 (d) assign responsibility

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

b. TEMPALTs are accomplished on nuclear 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, and weapon or missile system certification trials (R)
- (2) Research and development support
- (3) Operational Evaluation/Technical Evaluation (OPEVAL/TECHEVAL)
- (4) Mission 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: (A)

- (1) At-sea test and evaluation - 6 months
- (2) Research & Development - 6 months
- (3) OPEVAL/TECHEVAL - 6 months
- (4) Special Missions/Battle Group - 14 months
- (5) 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 (R)

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requirements for the fleet. These OPALTs shall provide adequate Integrated Logistic Support (ILS) in accordance with references (e) and (f) 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.

A) Configuration change form (OPNAV 4790CK) must be submitted for all OPALTS per reference (e).

R) e. NAVSEA PMS392 is cognizant of TEMPALTs affecting operational attack submarines (SSNs) and fleet ballistic missile

A) submarines (SSBNs). PMS350 is cognizant of TEMPALTs affecting SSN21 Class hulls pending transition of in-service support to PMS392.

6. Policy

a. TEMPALTs will not be accomplished on active fleet 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.

A) b. All alteration design packages will be prepared per reference (e). TEMPALTs impacting SUBSAFE boundaries will meet the requirements of the SUBSAFE Manual, reference (g). SUBSAFE work shall only be performed and certified by qualified, authorized activities identified in reference (h). TEMPALT packages submitted to NAVSEA for approval shall identify the installing and certifying activities designated to accomplish the SUBSAFE work. Note that reference (h) 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.

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c. Alteration design will be reviewed for design adequacy; (R
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, ship
silencing, arrangements, and impact on stowage. NAVSEA 08 shall
be consulted in all matters relating to or affecting the nuclear
propulsion plant. SSP will be consulted in all matters relating
to or affecting the Strategic Weapons System (SWS) (e.g.,
navigation, fire control, launcher, and associated support
systems). The Planning Yard will review alteration design (A
packages as directed by NAVSEA.

d. For mission support and at-sea/certification TEMPALTs, (A
alteration design packages shall 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:

(1) Where major configuration differences exist within (A
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, alterations 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 accomplishment.

(2) Subsequent requests for extension of applicability (A
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 (A
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.

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- A) f. Where possible, alteration design packages will utilize standard concepts such as permanent or temporary rack approvals as class designs.
- R) 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 and the restoration of the ship to its original configuration. 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 accumulative impact of all TEMPALTs installed and being installed. The TYCOMs also should 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.
- A) h. In all cases, NAVSEA, TYCOMs and the Sponsoring Activity will be notified by the Installing Activity by naval message when any temporary installation is accomplished on any active fleet 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 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 (i) or (j), 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

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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:

(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 (e) with a forwarding letter. As a minimum, forwarding letters will contain a brief description of the alteration, purpose of the installation, requested approval date and planned installation time frame. TEMPALTs require adequate preliminary ILS per reference (f). 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. Distribution of all technical data packages will be as follows:

(a) The original forwarding letter and three (four for SSBN 726 Class TEMPALTs) copies of the entire technical data package will be sent to:

Commander
Naval Sea Systems Command
(attn: PMS392A4 or PMS350 as applicable)
2531 Jefferson Davis Hwy
Arlington, VA 22242-5160

(R)

(b) 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

(R)

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- R) (2) To allow adequate time for NAVSEA review, the following guidelines are provided:
- R) (a) For all 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.
- R) (b) 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.
- R) (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 (k). A request for conceptual approval of the temporary alteration will be prepared in accordance with reference (e) prior to performing detailed design work. PMS392 will coordinate with SEA 08 for review and approval of both the 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.
- R) b. Upon receipt of NAVSEA technical design approval, the design activity will provide a digital copy of the technical data package to NAVSEA (PMS392 or PMS350 as applicable) and Planning Yard. A hard copy will also be provided to the appropriate TYCOM(s).

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c. Concurrent with alteration accomplishment, the 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. (R)

d. NAVSEA will conduct a design review to assess impact to ship/ship systems; e.g., ship safety, personnel safety, impact on operational capability, systems interfaces, equipment arrangement, impact on stability, impact on ship systems, and technical adequacy and accuracy.

e. Memorandum of agreement (MOA) with the Squadron, IMA, ship and other applicable organizations will be established for all TEMPALT installations and removals. All work will be performed in accordance with reference (i). (A)

8. Responsibilities

a. Sponsoring Activities (R)

(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. (A)

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

(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. (A)

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

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

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- A) (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.
- A) (7) Identify installing and certifying activities within TEMPALT packages that include SUBSAFE work when submitted to NAVSEA for approval.
- A) b. Design and Installation Activities
- A) (1) The Design Activity will prepare alteration design packages in accordance with reference (e) and this instruction. Design packages will include a list of items/equipment requiring restoration and reference appropriate class drawings to accomplish the restoration.
- A) (2) For the purpose of adjudicating nonconformance, TEMPALT drawings are considered nondeviation 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) (a) If the Installing Activity is a naval shipyard or a private shipbuilder, nonconformance shall be adjudicated in accordance with Sections 9020-1-R or 9020-1-S of reference (j), as applicable.
 - A) (b) For all other Installing Activities, nonconformance shall be adjudicated in accordance with departure from specification procedures of reference (i).
- R) (3) The Installing Activity will ensure that the design documentation for TEMPALTs has been approved by NAVSEA prior to the start of shipwork in accordance with the policy and procedures of this instruction.
- R) (4) The Installing Activity will ensure that authorization has been obtained from the applicable TYCOM prior to installation.
- A) (5) The Installing Activity will establish a MOA for all work to be performed and accomplish all work in accordance with reference (i) and this instruction.

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(6) The Installing Activity will ensure URO/MRC 029, Access to Vital Equipment, is accomplished by Forces Afloat in the vicinity affected by the TEMPALT after each installation. (A)

(7) The Installing Activity will notify NAVSEA (PMS392), applicable TYCOM and Sponsoring Activity by naval message whenever a TEMPALT has been accomplished, relocated, or removed. (R)

(8) The Design Activity will provide a copy of the approved technical data package to NAVSEA and TYCOM(s). (A)

(9) The Installing Activity will provide copies of the approved technical data package to the ship each time the alteration is accomplished. (A)

c. NAVSEA

(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.). (R)

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

(4) Obtain Planning Yard review and input on TEMPALTs and OPALTs requiring their review, including all OPALTs used in advance of SHIPALTs. (R)

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

(6) Identify in the approval letters those TEMPALTs designated as OPALTs.

(7) Ensure that TEMPALTs are addressed within the current SEA 92/TYCOM audit structure. (A)

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

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e. TYCOMs

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

R) (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 (i).

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

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

f. Planning Yard

R) (1) Review proposed TEMPALTs and OPALTs for compliance with reference (e) as directed by NAVSEA.

(2) Ensure that no adverse impact to operation and access to equipment results from the temporary installation.

R) (3) 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.

(4) Ensure that OPALTs comply with approved combat weapons and communication baseline.

R) (5) For SSBN 726 Class, TEMPALTs which affect engine room arrangements will be installed and reviewed in the TRIDENT mockup prior to final design approval on a case basis as directed by NAVSEA.

A) g. Supervisor of Shipbuilding. Provide QA of SUBSAFE work for TEMPALT installations accomplished by private shipbuilders.



S. M. BONWICH
EXECUTIVE DIRECTOR
SUBMARINE DIRECTORATE

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