

VOLUME VI
CHAPTER 16
HABITABILITY

REFERENCES.

- (a) OPNAVINST 9640.1 - Shipboard Habitability Program
- (b) NAVSEAINST C9210.4 - Changes, Repairs and Maintenance to Nuclear Powered Ships
- (c) NAVSEAINST 9210.14 - Changes to Submarine Tenders and Destroyer Tenders with Nuclear Support Facilities, Requirements Concerning
- (d) NAVSEA SL720-AA-MAN-030 - Navy Modernization Process Management and Operations Manual
- (e) COMNAVAIRFORINST 9640.1 - Control of Habitability Improvements in Aircraft Carriers

LISTING OF APPENDICES.

- A Table of Habitability Project Technical Requirements and Actions
- B Sample Habitability OPTAR Augment Funding Request
- C Advance Planning Milestones

16.1 PURPOSE. To provide guidance in the requirements for implementing various habitability programs, and to identify the sources of assistance available for these programs.

16.1.1 Policy. The Chief of Naval Operation's shipboard habitability policy, as set forth in reference (a), sets specific minimum standards for new construction and commissioned naval ships, establishes procedures for attainment, and assigns responsibility for implementation.

- a. Expenditure of ship's Operating Target (OPTAR) on habitability improvements, tools, and shipboard furniture and fixtures is considered a part of this program. Funds allocated to habitability must be obligated wisely to ensure the maximum, positive impact on shipboard quality of life.
- b. For the procurement of furnishings, food service equipment and laundry equipment, every effort must be taken to use the Navy approved equipment identified in the NAVSEA Warfare Center – Philadelphia (NAVSEAWARCEN PD) Code 434 online catalog identified in paragraph 16.2.2.1.4.o of this chapter.
- c. Unauthorized alterations and rearrangements are prohibited.
- d. Changes to spaces or systems covered by references (b) and (c) must be approved by Naval Sea Systems Command (NAVSEA) and conform to the requirements of Chapter 3 section 3.8 of this volume.
- e. (Surface Force Ships and Aircraft Carriers only) All changes to Ship Configuration as a result of habitability improvements, repair or replacement, regardless of the accomplishing activity, must meet the requirements of reference (d), Section 2 and Appendix A of this chapter.

16.1.2 Discussion. Shipboard habitability encompasses ship's systems and facilities which satisfy the basic human needs of the crew. Included are facilities and systems for eating, sleeping, personal hygiene, ventilation, climate control, and recuperative or leisure activity. Since funds are severely limited, a well-managed habitability program is essential to ensure ships conform to the minimum standards of shipboard habitability.

16.2 HABITABILITY IMPROVEMENT PROGRAMS.

16.2.1 Ship's Force Habitability Improvement Projects. A short-range program, initiated, planned and scheduled by the ship. This program uses ship's OPTAR funds, not to exceed \$25,000 per project, with the majority of the work being accomplished by Ship's Force.

- a. These projects are intended to be practical, workable, short-range projects representing the individual Commanding Officer's strategy for the enhancement of living quarters and personnel services areas on board ship.
- b. The emphasis of this program is to improve existing living conditions and the quality of life to meet the standards of reference (a) using Ship's Force labor and, when approved, special habitability fund augmentation. Allocation of these limited funds will be on a "fair share" basis in relation to Force requirements.
- c. Not all livability items fall within the purview of ship's habitability improvement projects or qualify for special habitability fund augmentation. Items of the following nature are not within the scope of this program.
 - (1) Replacement of consumable items such as mattresses, pillows, or utensils. These items should be programmed for regular OPTAR funding on an incremental basis.
 - (2) Improvements such as furnishings and lighting in working spaces and passageways which are more properly categorized as improvements in safety or operations.
 - (3) Unauthorized modifications or alterations. These modifications include alterations which affect compartment size or location, adding false bulkheads, overheads, or new equipment not previously installed.
 - (4) Normal ship maintenance and organizational repair responsibilities.
 - (5) The Deck coverings such as tile, terrazzo, etc. which are available via the Regional Maintenance Center (RMC) or Immediate Superior In Command (ISIC) Commercial Industrial Services contracts.
- d. Ship's OPTAR funds may be used to renew existing bulkhead sheathing and false overheads in food preparation, medical, dental, flag, Commanding Officer, Executive Officer, chapel, wardroom, and Chief Petty Officer (CPO) messing and lounge areas. Existing sheathing and false overheads in crew messing areas may be replaced when unserviceable. Sheathing and false overheads in all other areas will be removed when unserviceable and will not be replaced. There will be no new installations of bulkhead sheathing or false overheads.

- e. Due to the fiscal and physical limitations on this program, individual ships should develop a sensible, realistic and continuing plan for improving overall living conditions, with most of the work to be accomplished by Ship's Force.
- f. Commanding Officers may request funds to support an emergent Habitability Improvement Project through the chain of command at any time. The request should contain an itemized listing, in prioritized order, with location, nomenclature, National Stock Number (NSN), cost estimate, and other clarifying information.
- g. When requesting funds to replace food service equipment, comply with Type Commander (TYCOM) supply procedures. All requests must have clear and concise justification. Appendix B of this chapter provides a sample request letter.

16.2.2 Habitability Programs Under the Technical Sponsorship of Naval Sea Systems Command. These are programs under various titles that have evolved from the NAVSEA Habitability Program originally established in 1975. The common program element is approved NAVSEA title block drawings that define the scope and details for projects accomplished there under. These formalized programs are executed following long-range plans with the established goal of achieving and maintaining the Habitability Standards issued by reference (a) over the life of each ship.

- a. The TYCOM must authorize and fund individual habitability upgrade and refurbishment projects. For aircraft carriers, projects are per reference (h). Contractor services may be utilized for design and engineering support, procurement development and monitoring, and on board installation support. Installation support may be provided in the form of a Customer Contract Team (CCT) that accomplishes the full scope of the project or as professional technical advisor who assists untrained and inexperienced Ship's Force personnel with accomplishment of the work.
- b. The TYCOM is responsible for developing and maintaining the long-range five-year NAVSEA Habitability Life Cycle Program plan. Ships are selected for initial induction into the Program based on years in-service. Specific ensuing projects are based on non-compliance with criteria specified by reference (a), the general scope of habitability deficiencies as noted by the Board of Inspection and Survey, planned life cycle furniture replacement schedules, and other available documentation. Ship's Force input is encouraged.
- c. Design surveys are normally accomplished during Chief of Naval Operation's maintenance availabilities. Follow-on installation projects will be scheduled during subsequent maintenance availabilities until all designated compartments in each ship have been upgraded or new furniture has been received. Once all the designated compartments in any ship have been upgraded or refurbished, the process will repeat itself. That is, each compartment, after the initial upgrade, will be, per the TYCOM life cycle plan, scheduled for second and subsequent upgrades at specified intervals until such time that ship is removed from the program pending decommissioning.
- d. While the routine replacement of habitability hardware usually does not generate the requirement for changes to arrangements for ventilation, power and lighting, steam, support foundations, etc., more extensive projects such as upgrades may well generate these requirements. Where these changes result in requirements to increase the

capacity of the “hotel” systems providing support, a concurrent Ship Change Document (SCD) per reference (d) for upgrade of the “hotel” systems must be executed at TYCOM expense concurrent with the individual Program project. More detailed guidance in this area is provided by Appendix A of this chapter. Verification of whether or not SCDs are required to support individual projects may be made via the following TYCOM Codes:

- (1) COMNAVAIRPAC Shipboard Habitability Manager, Code N434A8.
 - (2) COMNAVAILANT Shipboard Habitability Manager, Code N431HE.
 - (3) COMNAVSURFPAC Shipboard Habitability Manager, Code N43TH.
 - (4) COMNAVSURFLANT Shipboard Habitability Manager, Code N436E6.
- e. Program projects should be prioritized in the following order.
- (1) Crew and CPO Berthing.
 - (2) Crew and CPO Sanitary Spaces.
 - (3) Troop Spaces.
 - (4) Food Preparation and Service Spaces.
 - (5) Laundry Spaces
- f. Per the authority of reference (a), the TYCOM may task and fund various agents including an RMC to accomplish the following:
- (1) Design habitability improvements for accomplishment by Forces Afloat or a CCT.
 - (2) Procure installation materials.
 - (3) Perform other management and engineering services.
 - (4) Provide installation or installation support services.

16.2.2.1 Program Responsibilities.

16.2.2.1.1 Chief of Naval Operations.

- a. Authorize Program.
- b. Establish shipboard habitability standards based on recommendations of Habitability Working Groups.

16.2.2.1.2 Naval Sea Systems Command.

- a. Establish technical policy.
- b. Approve furnishings, fixtures, materials, food service equipment and laundry equipment.
- c. Develop installation procedures.

16.2.2.1.3 Type Commander.

- a. The Habitability Program Manager must follow the Technical Requirements of Appendix A.

- b. Develop the Long Range Plan and establish priorities for attainment of standards. Provide these plans to the appropriate Expanded Planning Yard (EPY) updating plans as required.
- c. Plan, schedule, coordinate and monitor projects.
- d. Authorize, budget and fund the Program.

16.2.2.1.4 Regional Maintenance Center or Other Agent as Tasked and Funded by Type Commander.

- a. Solicit, award and administer contracts to support Program requirements for design, engineering and technical support and installation. Perform the duties of a Contracting Officer's Representative for the monitoring and oversight of Program contractors.
- b. Provide project coordination throughout the life of each project.
- c. Provide liaison with Fleet and TYCOMs, COMNAVSEASYSCOM, NAVSEAWARCEN PD In-Service Engineering Agents (ISEA), Life Cycle Managers (LCM), Planning Yards, other RMCs and other naval activities.
- d. Upon induction of the first ship of each class into the Program, submit preliminary habitability space arrangement concepts or drawings to COMNAVSEA's NAVSEAWARCEN PD ISEA or LCM for verification of conformance to applicable ship habitability specifications and criteria (e.g., reference (a)). Submittal of concepts or drawings for follow-on ships of the class is not required, unless different space arrangements are proposed. Submit the final habitability space arrangement drawings for NSWCPD ISEA review (prior to Planning Yard signature).
- e. Prepare, approve or task approval by the EPY NAVSEA drawings for the Program as required by Appendix A of this chapter. Provide copies of locally approved drawings to the EPY. (For nuclear-powered ships, drawings are submitted to the Hull Planning Yard or Reactor Planning Yard for review and approval.)
- f. Maintain a chronological record of all projects accomplished on each ship from the induction of the ship into the Program through decommissioning. This record includes initial ship check data, copies of all installation drawings, red-line drawings (if any) and other pertinent data.
- g. Identify and oversee the procurement of all required installation material. Maintain a material commodity database identifying all material approved for use under the Program.
- h. Prepare and update procurement specifications for habitability material.
- i. Identify requirements for Indefinite Delivery Indefinite Quantity Contracts to provide material for frequently used material items. (Contracts are normally awarded and administered by the Fleet Logistics Centers.)
- j. Operate material staging centers for the receipt, staging and shipping of project material.

- k. Perform quality assurance checks at material staging centers and onboard ships of new material and hardware. Prepare Quality Deficiency Reports and Reports of Discrepancy on requisitioned material as needed.
- l. Provide administrative assistance to the TYCOM in the preparation of long-range habitability improvement plans and related correspondence.
- m. Maintain a habitability web site to facilitate the dissemination of Program information.
- n. Respond to fleet requests for habitability assistance or support.
- o. Use NAVSEAWARCEN PD's web site to access the Navy online catalog for approved furniture, food service and laundry equipment at <HTTPS://NAVLOGTD.NAVY.MIL/HABITABILITY> .
- p. When required, request NAVSEAWARCEN PD ISEA or LCM support for approval of alternative food service, laundry equipment and furniture not found in the online catalog. When required, request NAVSEAWARCEN PD ISEA or LCM to conduct equipment selection, evaluation and testing. Also, request NAVSEAWARCEN PD support for equipment Integrated Logistics Support packages (parts support via Allowance Parts Lists, Tech Manuals and Maintenance Index Pages, Maintenance Requirement Cards) and Coordinated Shipboard Allowance List support.

16.2.2.1.5 Supply Activity.

- a. Prepare, contract, and procure materials.
- b. Administer other associated contracts.

16.2.2.1.6 Ship Commanding Officer. (When projects are accomplished by Ship's Force.)

- a. Assign project manager and petty officer supervision for projects.
- b. Assign an adequate labor force for removal, space preparation, installation and required fire watches working under technical advisor supervision.
- c. Conduct training programs.
- d. Account for, coordinate all movement of, and store all project material as it is received on board.
- e. Coordinate all required tag-out or in paperwork and Work Authorization Forms.
- f. Dispose of all retrograde material generated by the project.
- g. Report changes affecting repair parts support to Naval Inventory Control Point. Technical data will be provided to the ship by the Agent preparing installation drawings.
- h. Report completion to the TYCOM with summary of lessons learned.
- i. Ensure Ship's Selected Records are updated, as appropriate. Technical data will be provided to the ship by the Agent preparing installation drawings.

16.2.2.2 Project Milestones. Advanced Planning milestones for scheduled projects are listed in Appendix C of this chapter for aircraft carriers and submarine forces and Volume II, Part II, Chapter 2, Appendix D of this manual for surface force ships.

16.2.2.2.1 Advance Planning Notice (Surface Force Ships only). This TYCOM generated notice identifies Projects proposed for accomplishment, and provides work scope details including, if applicable, Ship's Force manpower requirements. This notice also requests Commanding Officer's comments, concurrence, and commitment of resources to the proposed projects.

16.2.2.2.2 Advance Planning Notice (Aircraft Carriers only). Habitability projects are entered into the Availability Work Package. Volume II, Part I, Chapter 3 of this manual provides guidance in the development and revision of the Availability Work Package.

16.2.2.2.3 Project Confirmation Notice. Following receipt of the Commanding Officer's concurrence with the proposed work scope and commitment of resources, the TYCOM confirms the projects. Thereafter, any modification or change to the scope of the projects will adversely affect scheduled milestones and could result in project deferral or cancellation.

16.2.2.2.4 Project Authorization. (Applicable to projects accomplished by Ship's Force.) Upon receipt of the Commanding Officer's project start request, normally about two weeks before the start of the maintenance availability, the TYCOM evaluates readiness to begin the project and authorizes the project to be started. Rip-out must not proceed until receipt of this authorization.

16.2.2.3 Project Completion Report. (Applicable to projects accomplished by Ship's Force.) Following completion of the project, the Commanding Officer must prepare a letter describing the project experience, which will be used by the TYCOM to update planning and installation practices. The letter should include the name and designation of the project, funds expended, certification that Integrated Logistics Support procedures have been followed, and any significant problems encountered, improvement recommendations, or lessons learned. Completion letters on all authorized projects should be forwarded via the chain of command to the TYCOM.

16.2.2.4 Integrated Logistics Support Reporting. For projects accomplished by Ship's Force, the ship is responsible for submitting any necessary OPNAV 4790/CK forms for Coordinated Shipboard Allowance List support. Technical data will be provided to the ship by the Agent preparing installation drawings. For projects accomplished by a CCT, the requirements of NAVSEA Standard Item 009-21 must be invoked.

16.3 NEW CONSTRUCTION SHIPS. U.S. Navy ships are built to meet the habitability standards of reference (a). Prior to certifying the ship's readiness for In-Service, the ISIC will conduct a Habitability Inspection to determine that the ship is materially ready for the crew to move aboard. The results of the Habitability Inspection must be reported to the TYCOM by message per Volume I, Chapter 3 of this manual.

16.4 NAVAL AIRPAC AND AIRLANT SPECIFIC HABITABILITY IMPROVEMENT PROGRAMS.

16.4.1 Aircraft Carrier Climate Control Improvement Team.

- a. The Aircraft Carrier Climate Control Improvement Team (ACCCIT) provides technical assistance to improve aircraft carrier habitability through specific improvements to air conditioning, heating, and ventilation systems serving manned spaces. The TYCOM schedules an ACCCIT visit every 12 to 15 months, but no greater than 24 months.

- b. 30 days prior to the visit, the ship will provide a list of 50 spaces the ship requests to be inspected to the Commander, Naval Air Force Program Manager. Criteria for the spaces to be nominated are:
 - (1) Normally manned.
 - (2) Spaces are being utilized as designated. Voids and storerooms that have been converted to offices or workshops by Ship's Force without alteration authorization will not be investigated.
 - (3) Space has not been investigated during a previous ACCCIT unless all discrepancies were corrected and a problem still exists.
 - (4) Main Propulsion and Auxiliary machinery spaces.
 - (5) Food Device and Laundry Spaces.
- c. During the visit, the team will provide On the Job Training for Ship's Force, validate alteration requirements, validate Planned Maintenance System coverage and assist in the preparation of Current Ship's Maintenance Project (CSMP) deferrals to document discrepancies found. Additionally, with Ship's Force assistance, the team will correct deficiencies as they are discovered if within their capability. Upon completion of the visit, a formal report will be issued listing discrepancies discovered, status of each, correction responsibility and recommended alterations. All corrected and uncorrected discrepancies identified during each survey will be submitted in electronic format (M0001 file) for submission into the ship's CSMP. The TYCOM will utilize this report to conduct follow-up ship checks to track completion of discrepancies.

16.4.2 Food Service and Laundry (Commander Naval Air Force Pacific) and Enhanced Quality Of Life Program (Commander, Naval Air Force Atlantic).

- a. The Food Service and Laundry (FS&L) and the Enhanced Quality Of Life (EQOL) Programs were developed to achieve and maintain high standards of material and operational readiness of food and hotel services equipment through intensified work definition, configuration analysis, corrective maintenance, and programmed and emergent equipment replacements.
- b. The FS&L and EQOL programs are a cooperative teaming effort involving the Aircraft Carrier TYCOM and Ship's Supply Department. The TYCOM will provide program management, labor funding and administer material procurement. The TYCOM will provide funding and oversight for material procurement. Ship's Force is instrumental in determining the requirements and opportunity for correction of material deficiencies. The FS&L and EQOL programs key objectives are:
 - (1) Advance planning.
 - (2) Technical expertise and continuity.
 - (3) Standardization of approved shipboard food service and laundry equipment.
 - (4) Achievement of full Allowance Parts List supportability.
 - (5) Maintenance and grooming support planning.
 - (6) Maintenance training for Ship's Force personnel.

- c. The replacement of food service or laundry equipment usually does not generate the requirement for changes to arrangements of ventilation, electrical, piping systems, and support foundations, etc. However, where changes result in net compartment increase to the capacity of the “hotel” systems providing support, or change the physical configuration of the ship’s structure, an SCD per reference (g) for upgrade of the “hotel” systems must be executed at TYCOM expense. The FS&L and EQOL programs are not intended to supplant the SHIPMAIN Entitled Process. All equipment replacements will consist of equipment that has been approved for shipboard use per the online catalog or by NSWCPD ISEA or LCM, including the interchangeability of like equipment.
- d. Not all food service or laundry equipment falls within the purview of the FS&L and EQOL programs. Items of the following nature are not within the scope of this program.
 - (1) Repair or replacement of non-approved equipment.
 - (2) Unauthorized modifications or alterations. These modifications include alterations which affect compartment size or location, adding false bulkheads, overheads, or new equipment not previously installed.
 - (3) Normal ship maintenance and organizational repair responsibilities.
 - (4) Deck coverings in spaces other than food service and laundry spaces.

APPENDIX A

TABLE OF HABITABILITY PROJECT TECHNICAL REQUIREMENTS AND ACTIONS

REQUIREMENT ATTRIBUTE	HABITABILITY IMPROVEMENT PROJECT TYPE			MODERNIZATION SCD REQUIRED	MINIMUM ACTION REQUIRED
	REPAIR	UPGRADE	REPLACE MENT		
Requires change in berthing capacity below CNO requirements		X	X	X	Process and execute SCD
Requires new berthing arrangement or design within existing compartment		X	X		For non-nuclear powered ships, provide drawings to Planning Yard. For nuclear powered ships, comply with NAVSEAINST C9210.4.
Requires new Head arrangement or design within existing compartment		X	X		For non-nuclear powered ships, provide drawings to Planning Yard. For nuclear powered ships, comply with NAVSEAINST C9210.4.
Requires new Lounge Area arrangement or design within existing compartment		X	X		For non-nuclear powered ships, provide drawings to Planning Yard. For nuclear powered ships, comply with NAVSEAINST C9210.4.
Replace lockers, berths, furniture, fixtures, food service or laundry equipment of exact same design within same frames, power supply and footprint	X				Use existing drawings to generate Bill of Material
Requires increased ventilation capacity to compartment		X	X	X	Process SCD, install in conjunction with Habitability Improvement Project
Requires rerouting of ventilation within existing capacity		X	X		For non-nuclear powered ships, provide drawings to Planning Yard. For nuclear powered ships, comply with NAVSEAINST C9210.4.

REQUIREMENT ATTRIBUTE	HABITABILITY IMPROVEMENT PROJECT TYPE			MODERNIZATION SCD REQUIRED	MINIMUM ACTION REQUIRED
	REPAIR	UPGRADE	REPLACEMENT		
Requires increased electrical capacity to compartment		X	X	X	Process and execute SCD
Requires use of spare breaker		X	X		Task Expanded Planning Yard to review and approve drawings
Requires rerouting of electrical cables within existing capacity		X	X		For non-nuclear powered ships, provide drawings to Planning Yard. For nuclear powered ships, comply with NAVSEAINST C9210.4.
Requires increased steam capacity, chill water capacity, etc. to compartment		X	X	X	Process and execute SCD
Requires rerouting of steam piping, chill water piping, etc. within existing capacity		X	X		For non-nuclear powered ships, provide drawings to Planning Yard. For nuclear powered ships, comply with NAVSEAINST C9210.4.
Requires modification of living space sprinkler system within existing capacity		X	X		For non-nuclear powered ships, provide drawings to Planning Yard. For nuclear powered ships, comply with NAVSEAINST C9210.4.
Requires additional sprinkler heads(s) to maintain adequate coverage (Per PY review)		X		X	Process SCD, install in conjunction with Habitability Improvement Project

15 Jan 2021

APPENDIX B**SAMPLE HABITABILITY OPTAR AUGMENT FUNDING REQUEST**

From: Commanding Officer, USS (Ship's Name and Hull No.)

To: TYCOM (as appropriate)

Subj: HABITABILITY OPTAR AUGMENT FUNDING REQUEST

Ref: (a) (Cognizant Fleet and TYCOM Instructions)

1. Request approval of a special OPTAR augmentation per reference (a) in the amount of (dollar amount) for the quality of life improvement project(s) as listed:

PRIORITY	NOMENCLATURE or NSN	QTY	COST EST
1	(Item description, location, etc.)		
2			
3			

TOTAL COST EST:

2. JUSTIFICATION (Conditions necessitating accomplishment of projects)
3. POINT OF CONTACT (Name, DSN or Comm telephone number, e-mail address, etc.)

COPY TO:
ISIC (as appropriate)

APPENDIX C**ADVANCE PLANNING MILESTONES**

<u>MILESTONE (A-MO)</u>	<u>ACTION</u>	<u>EVENT</u>
A - 23	TYCOM	ESTABLISH PLANNING ESTIMATE. TASK RMC WITH DESIGN SHIPCHECK
A - 22	RMC or AGENT	SHIP VALIDATION AND COMMENCE DESIGN
A - 14	TYCOM	SEND HABITABILITY PROJECT ADVANCE PLANNING NOTICE (SURFACE SHIPS)
A - 13	SHIP	INDICATE CONCURRENCE OR COMMITMENT TO PROJECT(S) TO TYCOM. ENTER PROJECTS(S) IN CSMP
A - 12	TYCOM	CONFIRM PROJECT
A - 9	TYCOM (AIRCRAFT CARRIERS)	ENTER PROJECTS IN AVAILABILITY WORK PACKAGE (AWP)
A - 8	PMS 312C (CVNs), SHIP, TYCOM (AIRCRAFT CARRIERS)	PROJECT REVIEW CONFERENCE (PRC)
A - 8	RMC OR AGENT	PREPARE SPECIFICATION DEVELOPMENT PACKAGE AND FORWARD TO APPROPRIATE PLANNING ACTIVITY
A - 8	RMC OR AGENT	PREPARE MATERIAL REQUISITIONS
A - 7	RMC OR AGENT	SEND REQUISITIONS TO FLEET LOGISTICS CENTER
A - 6	RMC OR AGENT (SURFACE SHIPS)	ISSUE DRAWINGS TO EPY
A - 2	RMC, AGENT OR SHIP	PROJECT KICK-OFF BRIEFING
A	SHIP OR RMC AGENT	START AVAILABILITY OR PROJECTS
COMP	SHIP (APPLICABLE TO PROJECTS ACCOMPLISHED BY SHIP'S FORCE)	SEND COMPLETION REPORT